



Clinical Translational Research Program

FULL APPLICATION

Closing date: May 1st, 2019

INSTRUCTIONS TO APPLICANTS

Support resources

It is strongly recommended that applicants read the Clinical Translational Research Program information sheet prior to developing their Full Application Form. This provides key information on the eligibility and selection criteria.

Feedback has been provided to all applicants invited to submit Full Applications and can be addressed via revision to the material developed for their project and as well as at Section B3.

Some of the details requested in this Full Application Form include provision of information previously provided in the EOI, applicants are recommended to review and revise this material in light of the Feedback provided.

Enquiries can be directed to:

Heather Smith
Senior Executive Officer
Mindgardens Neuroscience Network
E: h.smith@mindgardens.org.au
M: 0401 223 788

Completing the Full Application Form

All Full Applications must be submitted using this form.

All sections of this form and attachments must conform to the following:

- > Left and right margins of at least 2cm
- > Font no smaller than 11 point (preferred font is Arial)
- > Line spacing of 1.15

When saving this form, please use the naming convention:

CTRP_FullApplication_Chief Investigator-Surname

(e.g. *CTRP_FullApplication_Smith*)

Information provided in this Full Application may be provided to advisors supporting the CTRP Selection Review Panel for the purpose of assessment and identifying synergies between projects.

Submitting the Application Form

The Full Application should be submitted as a Word document.

The Application Form must be emailed to:

Heather Smith
Senior Executive Officer
Mindgardens Neuroscience Network
E: h.smith@mindgardens.org.au

by May 1st, 2019

SECTION A – OVERVIEW

Chief Investigator: <i>Please include title</i>	Conjoint Professor Nicholas Lintzeris
Host Organisation	South East Sydney Local Health District (SESLHD)
Project title	Optimising comorbidity care via clinical information systems
Project summary (300 words) <i>Summarise your research question(s) and methodology. Outline the potential benefits, including how this project will be translated into practice change that will impact patient outcomes or population health and wellbeing</i>	<p>Aim and objective</p> <p>This project aims to improve the health, wellbeing and safety of people in SESLHD who have co-occurring mental health and substance use disorders and are clients of both mental health (MH) and drug and alcohol (DA) services. This will be achieved by co-designing and implementing a 'Comorbidity Package' which will articulate approaches (procedures, training, guides, dashboards, alerts, reminders) for enhancing coordinated care and collaboration between services with a focus on optimising the use of the shared clinical information system (CIS).</p> <p>This project will leverage the opportunities of a shared CIS, by engaging clinicians, academics, consumers, service managers and data coordinators in developing and implementing a co-designed 'Comorbidity Package'.</p> <p>Research questions</p> <ol style="list-style-type: none"> 1. Is there an increase in coordinated care for clients of both community mental health and drug and alcohol services in SESLHD following implementation of the Comorbidity Package? 2. Is there an improvement in the quality of care (patient safety, experience and clinical outcomes) following implementation of the Comorbidity Package? 3. How do users perceive the Comorbidity Package, e.g. do they find it clear and easy to use? 4. How has collaboration between the community mental health and drug and alcohol teams changed following implementation of the Comorbidity Package? <p>Methodology</p> <p>Participatory Action Research (PAR) will be used as a method that facilitates an iterative, co-design approach and is associated with improved implementation outcomes and sustained change.</p> <p>Intervention</p> <p>The implementation of the 'Comorbidity Package' across participating SESLHD MH and DA services.</p>

	<p>Project Outputs</p> <p>(a) The 'Comorbidity Package' designed to improve coordinated care for clients with severe mental illness and substance use disorder through enhanced utilisation of CIS,</p> <p>(b) identification and piloting of patient and service specific comorbidity indicators within the CIS that can be used by clinicians and service managers for multiple purposes including enhanced patient care, quality improvement, service evaluation and workforce development; and</p> <p>(c) a platform for scale up across other LHDs.</p>
List all sites in which the project will be conducted	<p>This project will be conducted in the clinical teams in South East Sydney Local Health District (SESLHD) with 1-2 of the Eastern Sector Community MH Teams and the Eastern Sector DA Services.</p> <p>Investigators are a collaboration from SESLHD, UNSW, and Black Dog Institute (BDI). The project is also supported by partners from MoH, MNCLHD, and University of Sydney.</p>
<p>Total amount requested (excluding GST)</p> <p><i>Not to exceed \$150,000</i> <i>Details to be provided in Section E</i></p>	\$150,000
<p>Project duration</p> <p><i>Up to 24 months</i></p>	24 months
<p>Submissions to other funding sources for this project</p> <p><i>Include any planned or submitted applications. List the funder, expected date of notification of success and the amount(s) requested.</i></p>	No other funding has been sought for this project, however it does build on existing funded work and positions (which are listed under <i>E.2: Host or Partner Organisation contributions</i>).

SECTION B – PROJECT PLAN

B.1 Research Plan

Provide a detailed research plan that includes the following information:

B.1.A Background and priority research questions (maximum 500 words)

- > Describe the problem that is being addressed by the proposal.
- > Provide evidence of whether the proposed intervention/activity has been evaluated or tested/validated before. Describe any preliminary findings and how they will be built on.
- > Describe why this research will answer a question that is a priority for the health of individuals or communities in our district and for your organisation.
- > Describe the aims of the research, including a clear statement of the research question(s).

The problem

Mental health problems and substance use seem to go hand in hand. One study of comorbidity in clients of MH and DA services found that 44% of mental health services patients reported problematic substance use and three-quarters of drug service patients reported at least one psychiatric disorder (1). Unfortunately, people who suffer from comorbid mental health and substance use disorders are at greater risk of relapse, hospitalisation, violence, incarceration, homelessness, and serious infections such as hepatitis and HIV, than those people who suffer from either disorder on its own, and have poorer treatment prognosis (2). Happily however, when mental health and substance abuse treatments are integrated into a single cohesive package, evidence suggests prognosis for recovery is much improved (2). Such cohesive treatment is only possible if MH and DA services collaborate effectively. Given the prevalence and myriad harms associated with comorbid mental health and substance use disorders, it is vital that we find ways to improve collaboration between MH and DA services.

The NSW Clinical Guidelines (2009), the Living Well Strategic Plan (2014), and the National Comorbidity Guidelines (2016) provide direction to healthcare workers for the care of people who have co-occurring mental health and substance use disorders (3-5). Priorities include increasing staff confidence, enhancing consumer participation, and improving coordination of systems across separate teams. Routine screening, assessment, and collaborative care planning are recommended for every client, regardless of which service they attend first. Specifically, the coordination of health responses into a cohesive approach has been found to prolong client retention, increase treatment satisfaction, improve quality of life, and increase the use of community-based services. However, as highlighted by Root Cause Analyses (RCAs) in SESLHD and at the state level, a common theme in reviews of SAC1 and 2 events is a lack of communication and coordination between health services (6).

Evidence for the intervention and methodology

Collaborative and coordinated care requires a strong working relationship (13, 14). Unfortunately such strong relationships between separate health services are rare (6). This project will use the PAR framework, a series of guidelines designed by clinicians in regional Australia (7), to enhance collaboration between MH and DA services. An inclusive, PAR framework was designed by clinicians in regional Australia (8) and used to guide the development and implementation of a collaborative model of care in MH and DA services. The process increased communication between MH and DA staff (MH by 29%; DA by

42%) and their level of collaboration (MH by 18%, DA by 28%), and it was both highly acceptable to staff (95% $\geq 3/4$) and highly satisfactory to clients (90% $\geq 3/4$).

CISs, with their shared networks and ability to centralise information, have the power to improve collaboration and coordinated care between services, through: (i) sharing of care plans and problem lists, (ii) improving services' ability to arrive at agreed-upon standards of care, (iii) in-built functionality for generating clinical updates and alert mechanisms, (iv) increasing ease of communication between consumers and teams within a shared network (Freidman, 2016). Sadly however healthcare workers often under-utilise the full functionality of CISs (8) making it difficult to capitalise on the opportunities these systems provide for improving collaboration between services.

SESLHD MH and DA services already have a shared CIS that allow for shared care plans, problems lists, clinical updates and opportunities for communication. They use separate (but connected) sections of the CIS and each service has access to the other service's information.

Regrettably neither service reliably uses the information recorded there.

We propose that if the shared CIS can be better utilised to reflect the comorbidity guidelines and NSW Health policy, it will enhance the clinical care delivered to this vulnerable group of clients. We will utilise the PAR framework (7) to work with MH and DA teams to develop a "Comorbidity Package" that articulates the co-designed ways of improving coordinated care (eg. Procedures, training, guides, dashboards, alerts, reminders).

A priority for the health of individuals, communities and services

Improving clinical care for clients with severe co-occurring MH and DA problems is prioritised in NSW State (10), Rural (11) and Aboriginal (12) health plans, as is improving the use of existing CISs. Our project will harness the potential for digital transformation to better connect and streamline collaboration between MH and DA services.

Aim

To leverage the opportunities that our new CIS provides by engaging clinicians, academics, consumers, service managers and data coordinators in developing and implementing the 'Comorbidity Package'.

Research questions

1. Is there an increase in coordinated care for clients of both community mental health and drug and alcohol services in SESLHD following implementation of the Comorbidity Package?
2. Is there an improvement in the quality of care (patient safety, experience and clinical outcomes) following implementation of the Comorbidity Package?
3. What are user perceptions of the Comorbidity Package and does it have user acceptability?
4. How has collaboration between the community mental health and drug and alcohol teams changed following implementation of the Comorbidity Package?

SECTION B – PROJECT PLAN

B.1.B Research design and methods (maximum 1000 words)

- > Provide a detailed description of the research design and methods, including study type, sites(s), setting, patient/provider population and selection, comparison/reference/control group(s)/site(s), primary and secondary outcome(s), objective process and outcome measure(s) including baseline, intervention and follow-up period(s) as appropriate, data sources or qualitative tools/instruments, power/sample size calculation, and statistical analysis plan, including data linkage plan where required.
- > Provide details about any costing component or economic evaluation.

Clinical population: People with co-occurring MH and DA problems who have an open encounter in both Community Mental Health and Drug and Alcohol Services.

Participants: Key stakeholders from both MH and DA services including: consumers and consumer representatives, clinicians, service managers, senior managers, researchers, eMR application specialists, and data managers.

Intervention: Rather than trialling a new clinical intervention for patients, this project will develop and evaluate the 'Comorbidity Package' - which involves a range of approaches related to the use of our shared CIS (e.g. procedures, workforce development resources, guides, dashboards, alerts, reminders, and patient and service level indicators) that aim to enhance the care of patients with severe mental health and drug and alcohol comorbidity.

Method: This PAR implementation framework will be used to bring together clinicians, data managers, service managers, and consumer representatives to facilitate the co-design process. There are six core components (or steps) that are evidence-based and can be operationalised through flexible activities chosen by participants.

Step 1: Identify key stakeholders and form a collaborative partnership.

Step 2: Establish the current state.

Step 3: Build relationships and develop a shared vision.

Step 4: Co-design practice changes, review and amend.

Step 5: Develop clinical supports.

Step 6: Embed sustainability.

Our project:

Steps 1 & 2: Engagement with staff and establishing the current state (Months 1-6).

Finalise sites and Ethics. Engage consumer representatives, senior clinicians, managers, researchers, CIS application specialists, and data managers in identifying the information already available in the CIS, e.g.

- a) the extent of co-occurrence and the level of service collaboration and care coordination,
- b) health outcome measures and variables used in each service,
- c) the capability of the CIS to flag and support coordinated care for this population, and
- d) mapping existing coordinated care processes.

Steps 3 & 4: Develop and implement a 'Comorbidity Package' (Months 6-18).

Engage clinicians, consumers, researchers, managers, CIS application specialists etc in action research co-design to review baseline information and identify processes within the existing clinical information system that could be used collaboratively to enhance treatment

of co-occurring conditions and to support coordinated care (e.g. clinical updates, alerts, use of each other's forms, shared or consistent treatment plans, transfer of care documents, dashboards). This stage will include a design workshop which will create prototype strategies for enhancing communication and collaboration between services, and help find solutions to implementation barriers (Chan, 2018).

Steps 5 & 6: Sustain practice change (Months 18-24, ongoing).

Develop and monitor performance indicators and clinical supports for staff, build staff confidence, evaluate change in collaboration and care coordination and change in patient-reported and clinical outcomes.

Data Collection and Analyses

Evaluation of the comorbidity package will consist of a mixed-methods pre vs post (2017 vs 2020) comparison of (a) patient experience, clinical outcome and safety measures; and (b) stakeholder ratings and CIS indicators of collaboration and coordinated care. Measurement and analysis of the research questions include:

Question 1.

Is there an increase in coordinated care for clients of both community mental health and drug and alcohol services in SESLHD following the implementation of the 'Comorbidity Package'?

Measure and Analysis 1: Pre- and post-intervention administration of the Coordinated Action Checklist, a validated measure of coordinated care (15). Change in scores analysed using *t*-tests.

Measure and Analysis 2: Medical record audits at pre- and post-intervention to measure indicators of coordinated care, for example:

- % of treatment plans that are inclusive and specific about the roles of both services.
- % of activity data and clinical notes indicating coordinated care planning.
- number of service-designed processes used (eg, clinical updates, internal referral forms, system alerts, dashboards).
- CIS access audit data (number of clinicians looking at the other service's notes/treatment plans).

Some information will be from CIS extracts and some will require manual audit.

Question 2.

Is there an improvement in the quality of care (patient safety, experience and clinical outcomes) following implementation of the Comorbidity Package?

a. routine clinical outcomes – *There is not currently a consistent clinical outcome measure used by both services and this is one area that will be explored within the PAR focus groups, to identify what measures they currently find useful and whether a shared outcomes measure would be beneficial.* As client outcomes are already measured routinely by the Alcohol Treatment Outcome Profile (ATOP) in DA, and the Health of the Nation Outcome Scales (HoNOS) and the Kessler Psychological Distress Scale (K10) in MH (16-18), we will examine these available data to assess the impact of the package on clinical outcome. This will be achieved by identifying a cohort of patients after the development of the Comorbidity Package (eg clients with new treatment episode commencing in 2020) and a matched patient group from 2017.

b. patient experience – patient experience measures are routinely collected in both DA and MH services and 2017 and 2020 results will be compared.

c. safety – IIMS reports will be compared for the 2017 and 2020 calendar years with a focus on SAC 1 & 2s.

Question 3.

What are user perceptions of the Comorbidity Package and does it have user acceptability?

Measure and Analysis 1: Pre- and post-intervention focus groups will be analysed using thematic analysis to identify themes of clinicians' experiences of the Comorbidity Package and their application of it in clinical practice and the CIS.

Question 4.

How has collaboration between the community mental health and drug and alcohol teams changed following implementation of the Comorbidity Package?

Measure and Analysis 1: Pre- and post-intervention administration of The Wilder Collaboration Factors Inventory (CFI) a validated measure of collaboration. Pre-post change scores analysed using *t*-tests.

Measure and Analysis 2: Pre- and post-intervention focus groups will be reviewed using thematic analysis to identify themes of change in the system.

SECTION B – PROJECT PLAN**B.1.C Expected impacts of research (500 words)**

- > Outline what new evidence the research will generate
- > Describe how the evidence generated through this research is likely to impact the health of individuals or communities in our district and for your organisation:
 1. Clinical care for those with mental health, drug and alcohol and/or neurological disorders, including cognitive impairment, developmental disorders and stroke.
 2. Public health or preventative interventions for mental health, drug and alcohol, and/or neurological disorders
 3. Models of care that involve clinicians, academics and consumers working together to develop novel services and evaluation platforms
 4. Projects that involve digital transformation that can be demonstrated to lead to improvement in current hospital, primary, or community care practices

Project Outputs

(a) The 'Comorbidity Package': this is designed to improve coordinated care for clients with severe mental illness and substance use disorder through enhanced utilisation of CIS by MH and DA staff.

(b) Identification and piloting of patient- and service-specific comorbidity indicators within the CIS that can be used by clinicians and service managers for multiple purposes including enhanced patient care, quality improvement, service evaluation and workforce development.

(c) A platform for scale up across other LHDs: this study aligns with NSW and SESLHD strategic priorities for maintaining health and promoting community well-being and health equity. It meets the NSW mental health reform priorities detailed in Living Well: a strategic plan for mental health in NSW 2014 – 2024: 6.2.5 “Ensure that population health activities appropriately target people with lived experience of mental illness, including interventions to address smoking, physical activity, nutrition and use of alcohol and other drugs (2)”.

Expected impacts

1. Projects that involve digital transformation that can be demonstrated to lead to improvement in current hospital, primary, or community care practices

The principal purpose of this study is to show that developing a more streamlined system for: (i) identifying clients with co-occurring MH and DA conditions and (ii) fostering coordinated care between MH and DA services, will lead to significant improvements in the quality of care (patient safety, experience and clinical outcomes) provided to a vulnerable consumer group in an historically challenging area of healthcare. If improved use of the functionality in CIS is shown to improve inter-agency collaboration and co-ordination of care, benefits such as earlier identification of comorbidity and increased numbers of clients receiving coordinated care could be seen immediately.

2. Public health or preventative interventions

Although population-level research suggests that only a minority of individuals suffering from MH disorders will access treatment from healthcare services, those with more severe mental illness are more likely to access treatment, particularly persons diagnosed with

schizophrenia, major depression and anxiety disorders (19-22). Similarly, individuals with co-occurring disorders place a greater demand on treatment services than those with substance misuse alone (23). Optimally reducing these negative impacts will, therefore, require both improving population health through the implementation of effective prevention and early intervention strategies, and increasing the reach and accessibility of existing effective treatments. This study is a critical step because it targets the early identification of co-occurring disorders and the streamlining of access, treatment and referral processes. If successful, the Comorbidity Package could be initiated in multiple LHDs to effect change nationally.

3. Clinical care

Evidence suggests that people with co-occurring mental health and substance dependence conditions benefit from care that is coordinated between specialised MH and DA services (9). If we can improve care coordination from when comorbidity is flagged, research indicates that clinical improvements will include reduced severity of MH symptoms, reduced relapse into substance misuse, and fewer acute care admissions (3-5).

4. Models of care that involve clinicians, academics and consumers

The Comorbidity Package reflects best-evidence practice because it combines the best available research evidence with the expertise of consumers and service providers (24). It can inform the development of existing or planned collaborative models of care by enhancing model uptake, evaluation and effectiveness.

SECTION B – PROJECT PLAN**B.2 References and publications (maximum 1 page)**

Include a list of references used to describe the Research Plan in B.1.

If the investigators have published or presented any preliminary or relevant research to the proposed project, please include these here.

1. Weaver, T., Madden, P., Charles, V., Stimson, G., Renton, A., Tyrer, P., & et al. (2003). Comorbidity of substance misuse and mental illness in community mental health and substance misuse services. *British Journal of Psychiatry*. 183, 304-313.
2. Drake, R.E., Mueser, K.T., Brunette, M.F., & McHugo, G.J. (2004). A review of treatments for people with severe mental illnesses and co-occurring substance use disorders. *Psychiatric Rehabilitation Journal*. 27(4), 360-373.
3. NSW Department of Health. (2009). NSW Clinical Guidelines for the Care of Persons with Comorbid Mental Illness and Substance Use Disorders in Acute Care Settings Sydney, NSW: Department of Health
4. NSW Mental Health Commission. (2014). Living Well: A Strategic Plan for Mental Health in NSW. Sydney
5. Marel, C., Mills, K. L., Kingston, R., Gournay, K., Deady, M., Kay-Lambkin, F., & et.al. (2016). Guidelines on the management of cooccurring alcohol and other drug and mental health conditions in alcohol and other drug treatment settings
6. RCAs
7. Friedman, A, Jenna Howard, Eric K. Shaw, Deborah J. Cohen, Laleh Shahidi and Jeanne M. Ferrante (2016) Facilitators and Barriers to Care Coordination in Patient-centred Medical Homes (PCMHs) from Coordinators' Perspectives, *Journal of the American Board of Family Medicine*, 29 (1) 90-101.
8. Laerum, H. Ellinsen, G. Faxvaag, A. (2001). Doctors' use of electronic medical record systems in hospitals: cross section survey. *BMJ*, 323. 1344-1348.
9. framework paper
10. CF
11. Baker, & Velleman, R. (Eds.). (2007). Clinical handbook of co-existing mental health and drug and alcohol problems. East Sussex: Routledge NSW Mental Health Commission.
12. NSW state plan
13. Rural plan
14. Aboriginal health plan
15. Supper, I, Catala, O. Lustman, M., Chemla, C., Bourgueil, Y, Letrilliat, L. (2014) Interprofessional collaboration in primary health care: a review of facilitators and barriers perceived by involved actors. *Journal of Public Health*, 37(4), 716-727.
16. Friedman, A, Jenna Howard, Eric K. Shaw, Deborah J. Cohen, Laleh Shahidi and Jeanne M. Ferrante (2016) Facilitators and Barriers to Care Coordination in Patient-centered Medical Homes (PCMHs) from Coordinators' Perspectives, *Journal of the American Board of Family Medicine*, 29 (1) 90-101.
17. CAC
18. ATOP; Ryan, 2015
19. HoNOS;
20. K10
21. Kessler et. al. (1999). Past-year use of outpatient services for psychiatric problems in the national comorbidity survey. *Am J Psychiatry*, 156(1), 115-123.
22. Wang, P., Lane, M., Olfson, M., Pincus, H., Wells, K., & Kessler, R. (2005). Twelve-month use of mental health services in the United States: results from the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62(6), 629-640.
23. Leaf, P., Livingston, M., Tischler, G., Weissman, M., Holzer, C., & Myers, J. (1985). Contact with health professionals for the treatment of psychiatric and emotional problems. *Medical Care*, 23(12), 1322–1337.
24. Vasiliadis, e. a. (2007). Do Canada and the United States differ in prevalence of depression and utilization of services. *Psychiatric Services*, 58(1).
25. Tempier, R. (2009). Mental disorders and mental health care in Canada and Australia: comparative epidemiological findings. *Soc Psychiatry Psychiatr Epidemiol*, 44(1), 63-72.

26. Sackett, D. L., Rosenberg, W. M. C., Muir-Gray, J. A., Haynes, R. B., & Richardson, W. S. (1996). Evidence based medicine: what it is and what it isn't. *BMJ*, 312(71).

SECTION B – PROJECT PLAN

B.3 Response to feedback (250 words)

Please respond to feedback on the Expression of Interest provided by the Review Panel.

Unsure of what the actual measurement indicators are. Please expand and clarify. How will they actually measure the outcomes? How will these outcomes impact Mental Health patients with Drug and Alcohol problems?

This project involves multiple indicators of interest:

1. Clinical Indicators that will be identified by the key clinical stakeholders, implemented as part of the project intervention, and will remain after this study concludes. Specific indicators will be chosen by PAR participants but are anticipated to fit into categories such as the following:
 - a. *Indicators of co-morbidity.* We seek to identify through mapping the existing CIS data and focus groups with stakeholders, potential indicators of Comorbidity that either already exist in the CIS but are under-utilised or could be added into the CIS to facilitate the identification of clients. Identifying an indicator of the presence of comorbidity, is the first crucial step in allowing services to monitor the prevalence, treatment journeys, and clinical outcomes of clients with comorbid MH and DA problems.
 - b. *Indicators of clinical outcome.* There are existing measures of clinical outcome in the CIS, but these are different for DA and MH services. We will look at both DA and MH outcomes for the clients in the identified outcomes cohorts as a gauge of the impact of the Comorbidity Package on clinical outcomes. We will also work with MH and DA stakeholders to identify what measures they currently find useful and whether a shared outcomes measure would be beneficial.
 - c. *Performance indicators.*

2. Project evaluation indicators which will measure whether the project has achieved its outcomes:
- Pre- and post-intervention administration of the Coordinated Action Checklist
 - Medical record audits at pre- and post-intervention to measure indicators of coordinated care (e.g. % of treatment plans that are inclusive and specific about the roles of both services; % of activity data and clinical notes indicating coordinated care planning; use of service designed processes (eg, clinical updates, internal referral forms, system alerts, dashboards); CIS access audit data (number of clinicians looking at the other service's notes/treatment plans)).
 - Clinical outcomes are already measured routinely by the ATOP (Ryan, 2015) in DA, and the HONOS (ref) and K10 (ref) in MH we will examine the available data to make an assessment of the impact of the package on clinical outcome. This will be achieved by identifying a cohort of patients post the development of the Comorbidity Package (e.g. clients with new treatment episode commencing in 2020) and a matched patient group from 2017.
 - patient experience – patient experience measures are routinely collected in both DA and MH services and 2017 and 2020 results will be compared.
 - safety – IIMS reports will be compared for the 2017 and 2020 calendar years with a particular focus on SAC 1 & 2s
 - Pre and post administration of The Wilder Collaboration Factors Inventory (CFI) a validated measure of collaboration, change scores analysed using t-tests.

Research needs to take into account collaboration with community rehabilitation and welfare programs such as the Ted Noffs Foundation; the Chapel; Odyssey House; the Beatrice Miles Project; “Youth off the Streets”; Headspace; SHACK Youth Service; Waverley Action Youth Service. Please give consideration in the full application.

The project team acknowledges the importance of collaboration and coordinated care with community rehabilitation and welfare programs for clients with co-morbid mental health and drug and alcohol conditions. This project will focus in on the shared CIS of the government MH and DA services as a mechanism for improving communication and collaboration between these teams. We acknowledge that this is only one aspect of the treatment milieu for clients with comorbid conditions in SESLHD, however we propose to capitalise on the opportunity for improvement within these services first, then, if the Comorbidity Package is successful it can be adapted for use with other community programs.

Referrals from GPs should be considered

Yes, we agree, referral processes into and from the MH & DA services with both internal and external service providers, such as GPs, will be a key component of the CIS review for collaborative care.

Co-management with Mental Health needs to be equally beneficial for both domains and risks losing engagement of one or other partners and sustainability is compromised. Please address this issue.

The project team agrees that it is crucial that both MH and DA services are engaged and experience equal benefit from any initiative that aims to improve the care of people with comorbid MH and DA disorders. The PAR methodology of the project was selected for this reason. For example, the implementation framework described in B.1.B specifically targets equitable engagement across separate teams, e.g. Step 1 prioritises identification and engagement of individual stakeholders, Step 3 prioritises development of relationships and a

shared vision (including agreed goals and outcomes), and Step 6 prioritises implementation of collaborative sustainability processes in both services. Additionally, investigators from both MH and DA clinical services have been engaged in the project team, including Dr Swapnil Sharma, Dr Julie Lappin (clinical MH), Dr Nicholas Lintzeris (clinical DA); Ben Steele (DA consumer representative and SESLHD Recovery College Project officer).

How is this capacity building across Mindgardens partners that did not exist before you submitted EOI?

This project represents a new research collaboration between SESLHD MH & DA, NDARC, and BDI, and for the first time brings together researchers, clinicians, consumers, and managers to address collaborative care through leveraging CIS opportunities. Capacity building will include increasing knowledge, skills and confidence among clinical staff, managers and researchers in identifying and co-managing severe MH conditions (for DA workers) and DA conditions (for MH workers); and in using the CIS to achieve this. The co-design methodology will also engage clinical and management staff in improving the sustainability of changes made. Capacity building will be further targeted within the research team whereby data driven researchers will gain knowledge and experience in co-design and PAR methodologies and applying research in health settings, and clinical researchers will in turn become more familiar with the data opportunities in SESLHD MH and DA.

SECTION B – PROJECT PLAN**B.4 Milestones**

Provide a timetable for key project milestones (e.g. ethics approval, site/participant recruitment, completion of data collection, data analysis, final reporting). Add rows as necessary.

Funding for successful applications will commence in July 2019.

Key milestone	Achievement date (mm/yyyy)
Finalise site recruitment	July 2019
Ethics approval	October 2019
Participant recruitment (Framework Steps 1 and 2)	November 2019
MOUs where necessary; and publication plan	December 2019
Completion of data collection	December 2020
Data analysis	February 2021
Agreement for scaling up and TRGS application	May 2021
Final reporting and dissemination of findings	June 2021

SECTION C – RESEARCH TEAM

An investigator is expected to steer the project and is actively involved in the research. Ideally the team of investigators needs to include senior researchers, clinicians, managers, policy makers and lived experience participants from a range of organisations.

The list should also include essential partners required for successful conduct of the project and implementation of the outcomes (e.g. LHD Director of Clinical Governance, Prince of Wales Hospital Director of Clinical Services, Director of Nursing, Director of a University Research Centre).

Applicants are encouraged to partner with other services to improve the generalisability of research findings.

C.1 Chief Investigator details

The Chief Investigator (applicant) must be employed by the Host Organisation.

Full Name: <i>Please include title</i>	Conjoint Professor, Nicholas Lintzeris
Position:	Director, Drug and Alcohol Services
Organisation:	SESLHD
Contact phone number:	0419261675
Email:	nicholas.lintzeris@health.nsw.gov.au
Postal address:	c/o The Langton Centre, 591 South Dowling St, Surry Hills, 2010

C.2 Chief Investigator role (150 words)

Outline the Chief Investigator's role in the research and describe why the Chief Investigator's involvement is critical to the success of the research.

As a clinician, researcher and LHD DA Director, Nicholas Lintzeris (NL) is ideally placed to lead this project. NL is the SESLHD Director of DA Services with overall governance for the clinical and operational aspects of OTP services. He is an Addiction Medicine Senior Staff Specialist who works clinically in OTP services (The Langton Centre) and has a 'hands on' clinical perspective. NL also led the COQI Project (2013-ongoing) and earlier developmental work with the ATOP (2009-12). He has an understanding of the important elements required for developing and implementing a clinical information system, and a vision for how information can be used to enhance patient care, treatment outcomes and efficiency of services. He will provide oversight, strategic direction and hands on clinical and research skills in leading this collaboration of researchers, service managers, clinicians and consumers across LHD/Ns, NSW MoH, consumer and universities organisations.

C.3 Other Investigator(s)

Include other proposed investigators (maximum 10).

#	Full Name	Position	Organisation	FTE and role in project
1	Dr Swapnil Sharma	Clinical Lead, Consultation-Liaison	SESLHD	Dr Sharma will be the lead investigator from MH services. Dr Sharma has experience in developing

		Psychiatry, Snr Staff Specialist Psychiatrist Pain Management		and publishing models of care pathways for mental health services.
2	Ben Steele	Consumer Representative (Consumer worker, DA, SESLHD + the Recovery College)	SESLHD	Ben will provide expert advice and support to the investigators to ensure that consumer voices are appropriately included in the PAR model. Ben is a member of the POW Consumer Group and the MoH AoD Consumer Advisory Group
3	Jennifer Holmes	Program Manager, D&A Data and Informatics, Ministry of Health	SESLHD	Jennifer will lead the CIS innovations with detailed knowledge of the SESLHD system. With her MoH role, Jennifer is well placed to ensure this project is aligned with NSW wide priorities and is transferable and scalable.
4	Mike Gatsi	Service Director, MH Services	SESLHD	Mike will provide leadership and support the involvement of the Mental Health clinical teams.
5	Catherine Foley	Research Fellow/ Psychologist, NDARC	UNSW and MNCLHD	Catherine has extensive experience in co-occurring disorders from a clinical and research perspective and will provide leadership on the PAR implementation framework.
6	Prof Anthony Shakeshaft	Professor and Deputy Director, NDARC	UNSW	Prof Shakeshaft provides expertise in the development and evaluation of clinical interventions that are embedded into routine practice.
7	Prof Katherine Boydell	Professor	Black Dog Institute	Prof Boydell will provide expertise in qualitative inquiry, participatory action research, co-design and knowledge translation.
8	Dr Julia Lappin	Senior Lecturer, School of Psychiatry and Staff Specialist in Psychiatry	UNSW and SESLHD	Dr Lappin will provide expertise from both a clinical and research perspective in optimising outcomes in severe mental illness; co-morbid substance misuse; treatment resistance; and health service research and reform.
9	Dr Llewellyn Mills	Research Associate	SESLHD and USyd	Dr Mills is a research fellow with Sydney University and SESLHD drug and alcohol Services
10	Emma Black	Project Manager	SESLHD, UNSW, and USyd	Emma is a project manager with Sydney University and SESLHD Drug and alcohol services

C.4 Biographies (*maximum one page per investigator*)

Please insert a one page biography for each investigator of the research team. Investigators with policy or practice experience on the research team will be considered for the explicit value that expertise brings. Achievements relevant to the research proposal should be included in the biography.

Biographies are not required for partners.

SECTION D – IMPLEMENTATION ACTIVITIES**D.1 List essential partners required for successful conduct of the research and implementation of the findings.**

For each identified partner, outline their contribution to the project including when and how they will be engaged in the research (e.g. in defining the problem, designing and/or delivering the intervention) and translation activities (e.g. dissemination of research outputs or findings, implementation of findings in policy or practice). *Note that all partners listed should be confirmed at the time of submitting this Full Application.*

Applicants are encouraged to partner with other Host Organisations to assist with generalisability of the research findings. If this is not considered appropriate for the research project, please provide justification.

Name	Position	Organisation	Contribution to project
Kristie Mammen	Program Manager	COQI Project, SESLHD	Overall oversight of the project management and project governance.
Dr Grant Sara	Director	InforMH, MoH	Leadership and advice regarding CIS innovation and sustainability
Susan Russell	Comorbidity CNC	SESLHD	Provide expert advice on cooccurring disorders and the treatment system. As a senior clinician, Susan will be a change leader amongst clinical staff.
Dr George Rubin	Associate Medical Executive Director - Epidemiology, Safety and Quality	SESLHD	Provide expert advice on improving and evaluating clinical quality and safety, and translational methodology.
Flora Karanfilovski	Director, Health ICT	SESLHD	Leadership and advice regarding CIS innovation and sustainability
Therese Finch	HIM	DAS, SESLHD	Leadership and advice regarding CIS innovation and sustainability
Garry Bell	Ngalaiya Wellbeing Project Coordinator	DAS, SESLHD	Provide expert advice and support to the investigators to ensure that Aboriginal people are appropriately included in the PAR model.

D.2 Indicate where, on the research translation path, current evidence exists and where this proposal sits.

	Idea generation	Feasibility	Efficacy	Replicability and adaptability	Effectiveness	Scalability	Monitoring
Current evidence	✓	?					
Proposed research	✓	✓	✓	✓	?		

SECTION D – IMPLEMENTATION ACTIVITIES**D.3 Current evidence (250 words)**

Describe the current evidence which supports the indicated stage of translation in Table D.2 above.

There is evidence that capabilities within a CIS can support coordinated care (Freidman, 2016), but, that health care workers under-utilise the functionality of CIS (Laerum et al, 2001). A framework for sharing, measuring and evaluating CIS functions, for example, was developed in a large American health system around the concepts of access, best practices and communication (6). Components that were determined to be important included shared care plans and problem lists, supporting accepted standards of care, developing clinical update mechanisms, and facilitating communication between consumers and all team members. While frameworks are being explored, however, there is currently no established mechanism for using the CIS to improve coordination of clinical care across MH and DA services (ref). Therefore, we have indicated that current evidence is at the early stage of 'idea generation'.

D.4 Translational impact of the proposed research (250 words)

Describe how and why your project will progress to the indicated stage of translation in Table D.2 above.

Whilst there has been significant investment in the clinical information system in NSW, the available functionality has not had its potential realised (ref). The work proposed in this project to develop the 'Comorbidity Package' is an important step in optimising the potential of the existing technology. This proposal extends upon existing knowledge and progresses to the indicated stage of research translation for three reasons. First, it tests the feasibility of developing and implementing a Comorbidity Package when using an established PAR implementation framework. Second, it measures both the clinical outcomes and the process measures associated with development and implementation of the package. Finally, it adapts this package to multiple MH and DA services and compares results across these real-world settings.

IMPLEMENTATION ACTIVITIES**D.5 Considerations for scalability after the research is completed (250 words)**

Describe what resources (e.g. documents, training programs, additional staff, funding) would be required for scaling the implementation of your project upon completion (should

it be effective). Detail who would be responsible for scaling up the implementation of your project upon completion (should it be effective) and how they would achieve this. Explain how the investigators, partners and Chief Executives could facilitate or drive this process.

This study is a demonstration project aimed at moving the current evidence from 'idea generation' on the research translation scale to 'feasibility, replicability and adaptability' and potentially to 'efficacy and effectiveness'. If successful, the research team then plan to focus on scaling up implementation of the Comorbidity Package across multiple LHDs. To achieve this, we will apply for funding through the Translational Research Grant Scheme (TRGS). The consistent CIS build in AoD and MH services across NSW Health means that the 'Comorbidity Package' established within SESLHD could easily be adopted by other LHDs state-wide without any significant changes in existing infrastructure.

Role of investigators, partners and Chief Executives in driving this process.

Principal investigators will lead the scaling up of the Comorbidity Package with active participation from the senior clinicians, policy makers, chief executives and partner organisations identified and engaged throughout this study. Our partners list thus far demonstrates our commitment to engaging with those who can drive practice translation in SESLHD and partnering LHDs and we will continue to build on this as we learn through the participatory action research process. We will discuss the potential for scaling up at all review stages of the research and we have allocated time in the study's final months to finalise a scaling up plan and secure agreement for application to the TRGS (see B.4 Milestones).

SECTION D – IMPLEMENTATION ACTIVITIES**D.6 Implementation activities (1 page maximum)**

Describe the activities that will be undertaken to support the translation of findings from the research project into policy and/or practice.

Activities may relate to all stages of the project; from knowledge and expertise that informs project planning and development; to dissemination of findings to relevant audiences; and ultimately the implementation of findings in policy and practice.

For each activity, identify the formal mechanisms to facilitate implementation and scaling; who will be engaged, when, and how; the timing and purpose of each engagement to support successful implementation; and who will be taking the lead and responsibility in driving the implementation activity.

Activity	Who will be engaged?	Timing and purpose	Who will lead this activity?
Design Thinking Workshop/ focus groups.	All identified stakeholders	Initial planning phase to help define the problem and the action plan and at completion of research to review progress and assess changes.	Lead investigators
Meetings with individual stakeholders.	Clinicians, consumers, policy makers, health service managers, patient advocacy groups.	At all stages: (i) during the research to review and adapt processes and procedures; (ii) when disseminating findings to support implementation and scaling	Project manager and lead investigators (with involvement from clinical services-based PAR team)
PAR working party meetings.	Senior and frontline clinicians, and consumers.	At all stages: (i) during the research to disseminate, review and adapt processes and procedures; (ii) when disseminating findings to support implementation and scaling	Clinical services-based PAR team with the support of the project manager.
Development of forms/checklists to facilitate new collaborative processes.	Senior and frontline clinicians, and service managers.	During the research. Step 3-4 of the implementation framework: co-design, trial and amend new processes and procedures	Project manager, lead investigators, PAR team.
Development and implementation of educational resources.	Senior and frontline clinicians, and service managers.	During the research. Step 5-6 of the implementation framework: develop training and clinical supports for staff	Project manager, senior and frontline clinicians, and lead investigators
Plan for scaling up and TRGS application.	Senior and frontline clinicians, service managers, policy makers and partner organisations	At all stages of the research, and when disseminating findings.	Lead investigators and project manager.
Publication of findings on open access platforms.	Researchers, clinicians, consumers and health service staff.	When disseminating findings to support implementation and scaling.	Lead investigators as per agreed publication plan.

SECTION D – IMPLEMENTATION ACTIVITIES

D.7 Project lay summary (300 words)

Please provide a lay summary that can be used to communicate your research to a wider audience, including:

- > The problem the research is trying to solve
- > What the project is trying to achieve
- > How the outcomes will impact healthcare delivery in the future
- > How the outcomes will impact patients in our community

The language in the summary should be pitched at a high school age audience. Please note that content provided may be used for media activity with content attributed to the lead researcher as a quote, should your application be successful.

People who suffer from comorbid mental health and substance use disorders are at greater risk of relapse, hospitalisation, violence, incarceration, homelessness, and serious infections such as hepatitis and HIV, than those people who suffer from either disorder on its own, and have poorer treatment prognosis. Happily however, when mental health and substance abuse treatments are integrated into a single cohesive package, evidence suggests that chances of recovering are much improved. Such cohesive treatment is only possible if MH and DA services collaborate effectively. At the moment MH and DA services have access to clinical information systems that would allow both services to collaborate more effectively with each other, but, unfortunately, the two services do not use these systems to their full potential and so people with comorbid mental health and substance use disorders need rarely get the type of coordinated care they need to get better. This project will consult with patients, clinicians, managers, and researchers across both MH and DA services to design an intervention that improves both the ability and the willingness of MH and DA staff to reach out to one another when a patient with comorbid mental health and substance use disorders is identified, then to work together to design a treatment for that patient based on the clinical expertise of both services. We will measure whether the intervention was effective in improving collaboration between MH and DA services, and whether this results in better outcomes for patients.

SECTION E – REQUESTED BUDGET

Please provide details of requested funds and co-contributions. The requested funds should include all anticipated funding required for the research project and activities to support translation. For salaries, please specify the salary level, on-costs and FTE. Identify each distinct budget component by expanding the table as required. Please note the budget must be expended within two years.

E.1 Funding requested

Funding of up to \$150,000 total over a maximum of two years is available.

Budget Item * <i>e.g. Salary (CI, AI, research assistant), consumables, equipment</i>	Funding requested (excl. GST)		Description <i>(<100 words per item)</i>
	Year 1 (2019/20)	Year 2 (2020/21)	
Staff Salaries (Educator, Data, & Project Staff)	70,000	70,000	HSM 2 0.25 FTE x 2 yrs Project Officer to coordinate the project; CNE 0.4 FTE x 1yr for workforce development; HSM 2 0.2 x 2yrs Data Manager to support data extraction and data quality. 10% on costs
Design Thinking Workshop	5,000	5,000	Consultant to run, transcribe, and analyse focus groups/qualitative interviews
TOTAL	\$75,000	\$75,000	

* Funding may be used for costs associated with the research project and translation activities but cannot be directed towards capital works. Indirect costs are permitted up to a maximum of 10% of the budget.

E.2 Host or Partner Organisation contributions

The Host Organisation(s) must provide financial and in-kind support for research/translation activities. Please insert details of requested cash and in-kind contributions.

Cash contributions

Source <i>Host or partner organisation</i>	Budget item	Funding (excl. GST) or in-kind		Description <i>(<100 words per item)</i>
		Year 1 (2019/20)	Year 2 (2020/21)	
SESLHD	Contribution to focus groups	5,000	5,000	Support the running of focus groups. Venue, catering, materials etc.
	Travel??			
	TOTAL	\$	\$	

In-kind contributions

Do not include the estimated/actual monetary value of the contribution.

Source <i>Host or partner organisation</i>	Budget item	Description <i>(<100 words per item)</i>
SESLHD, UNSW, BDI	Investigator time	To lead and oversee the project.
SESLHD	Clinical & Consumer time	The significant time required to participate by clinical staff and consumer representatives.
SESLHD	Desk, computer, office space, telephone etc	To support operational needs of the project manager.
UNSW	Statistician time	To support data collection, analysis, and interpretation.

SECTION F – CERTIFICATION

I certify that:

1. to the best of my knowledge that the details provided in this Application Form and any supporting documents are correct and complete.
2. I confirm that all of the applicants (Investigators and Partners) have given their consent to be named this application.
3. All funds awarded as part of the Clinical Translational Research Program will be used only for the purpose for which they were awarded.
4. I understand that this Full Application will be reviewed by the Clinical Translational Research Program Selection Panel and other advisors to the assessment process.
5. I will advise if alternative funding is received for this project, and understand that funding support may be adjusted in the event of duplicate funding.
6. The Host Department supports this project and will provide appropriate financial and in-kind support for the research.

Chief Investigator Signature

Chief Investigator Name

Date

Head of Department Signature

Head of Department Name

Department, Organisation

Date