Statistical Analysis Plan (Addendum)

A structured telephone-delivered intervention to reduce methamphetamine use (Ready2Change-Methamphetamine, R2C-M)

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Background

Australia has one of the highest rates of methamphetamine (MA) use in the world; however, uptake of in-person psychological treatment remains extremely low due to numerous individual (e.g. stigma, shame) and structural (e.g. service accessibility, geographical location) barriers to accessing care. Telephone-delivered interventions are ideally placed to overcome many of the known barriers to treatment access and delivery. This randomised controlled trial (RCT) will examine the efficacy of a standalone, structured telephone-delivered intervention to reduce MA problem severity and related harms.

Study rationale and design

This study is a double-blind, parallel-group RCT. We planned to recruit between 188 and 204 individuals with mild to moderate MA use disorder from across Australia. Provision was made to increase the recruitment target, based on the 3 and 6 month attrition rates observed after recruitment and data collection commenced (after 12 months of data collection with this complex cohort, 3 and 6 month attrition rates were higher than anticipated). As such, the target sample size was increased from 188 subjects, to up to 204 participants (i.e. an additional 8 subjects based on the 3 month attrition rate; or an additional 16 subjects based on the 6 month attrition rate). After eligibility and baseline assessments, participants were randomly allocated to receive either the Ready2Change-Methamphetamine (R2C-M) intervention (four to six telephone-delivered intervention sessions, R2C-M workbooks and MA information booklet) or control (four to six ≤5-min telephone check-ins and MA information booklet including information on accessing further support).

Telephone follow-up assessments occurred at 6 weeks and 3, 6 and 12 months post-randomisation. The primary outcome was change in MA problem severity (Drug Use Disorders Identification Test, DUDIT) at 3 months post-randomisation. Secondary outcomes (measured at some or all timepoints of 6 weeks and 3, 6 and 12 months post-randomisation) included MA problem severity (DUDIT) at 6 and 12 months post-randomisation, amount of methamphetamine used, number of DSM-5 methamphetamine use disorder criteria met, cravings, psychological functioning, psychotic-like experiences, quality of life and days of other drug use. Mixed-methods program evaluation were planned to be performed and cost-effectiveness was planned to be examined.

Statistical Analysis Plan (SAP)

This plan, or SAP Addendum, provides additional detail on the project and statistical considerations previously documented on ClinicalTrials.gov (NCT04713124) and published https://pubmed.ncbi.nlm.nih.gov/36991490/. Additional analyses not specified in the published protocol or this addendum will be regarded as exploratory.

Statistical software

Analysis will be conducted using the most appropriate procedures in programs such as GenStat, R, SAS, SPSS and/or Stata.

Analytic approach

Data will be collated, cleaned and validated using programmed edit checks, in a database that will be locked prior to the unblinding of the statistician for the primary analysis. The primary analysis will take place after all subjects, not known to have withdrawn or not deemed lost to follow-up, have had their 12-month assessments and will be based on the intention-to-treat principle (i.e. subjects' data are analysed as randomised and as stratified). A "per-protocol" sensitivity analysis will be restricted to those subjects with at least one follow-up assessment and, for subjects randomised to the R2C-M arm, participation in at least two telephone counselling sessions. Previous research delivering the R2C program to people with alcohol use disorder found exposure of ≥2 sessions yielded a reduction in alcohol use severity compared to a control arm (Lubman et al. 2022).

The first R2C session focuses on a clinical assessment and identifying treatment goals and the second session is when a therapeutic dose is received. As such, exposure to ≥2 sessions is considered "as-treated" for the per-protocol analysis. Additional sensitivity analyses will include a covariate for the number of structured telephone counselling sessions [1 to 6] in which subjects, in the R2C arm, participated. The repeated measurements of the outcome variables will be analysed by fitting linear mixed models using restricted maximum likelihood (REML)—this will allow the most suitable variance-covariance model for the repeated measures to be selected, using Akaike's Information Criterion, and commonality of nonlinear trends over time to be explored via splines. The F-test will be used to test for an overall group by time interaction and the primary comparison, between groups, of their changes from baseline to 3-month follow-up will be based on a t-test of the corresponding interaction contrast—this t-test will utilise the predicted means and their variance-covariance matrix which are recovered from the fitted mixed model.

Diagnostic plots of residuals will be assessed and, if deemed necessary, variance-stabilising transformations such as the empirical logistic transformation will be applied to the outcome variables, and inferences will be based on the analyses conducted on the transformed scale. In a series of exploratory analyses, mixed models with covariates for gender, illicit drug use, extent of exposure to the intervention, differences due to assigned counsellor, exposure to other treatments/programs and baseline levels of MA use, psychological distress, depression, anxiety and stress will be fitted, including their interactions with treatment group, in order to identify moderating factors. As these analyses will be exploratory, we will not adjust alphas in these analyses. As parsimony will be the aim of the exploratory analyses, the most restricted model will be selected. The complete list of candidate covariates and details of the analyses will be specified in a Statistical Analysis Plan that will be reviewed and approved by a Study Management Committee prior to database lock. No interim analyses will be conducted and there are no plans

to halt data collection before completion. Analyses will be conducted using the most appropriate procedures in GenStat, R and Stata.

1. **Statistical analysis of the primary outcome: Drug Use Disorders Identification Test (DUDIT)** (Primary outcome and key secondary outcome)

The primary outcome variable is change in methamphetamine problem severity at 3 months, assessed by the DUDIT. Scores range 0–44. Higher score suggests more severe MA use problem. The DUDIT will also be used as a secondary outcome measure (assessed at 6 and 12 months post-randomisation). The time frame has been adapted to cover the month prior to assessment (rather than the year) and thereby enable follow-up assessments at 3 months (primary outcome), 6 and 12 months (secondary outcomes). **Items of the DUDIT were adapted to focus on methamphetamine specifically, rather than any drug use**.

The following guidance will be used for calculating the DUDIT scores:

Berman AH, Bergman H, Palmstierna T, Schlyter F. DUDIT. The Drug Use Disorders Identification Test–E MANUAL Karolinska institute, Stockholm. 2007.

Muller, A. E., Havnes, I. A., Rognli, E. B., & Bukten, A. (2018). Inmates with Harmful Substance Use Increase Both Exercise and Nicotine Use Under Incarceration. International journal of environmental research and public health, 15(12), 2663. https://doi.org/10.3390/ijerph15122663

Hawthorne, G.; Hawthorne, G.; Elliott, P. Imputing cross-sectional missing data: Comparison of common techniques. Aust. N. Z. J. Psychiatry 2005, 39, 583–590.

For the primary outcome (DUDIT), missing values in the items that comprise the total DUDIT score will be accommodated as follows: "Harmful drug use was indicated by ≥6 for men and ≥2 for women on the DUDIT. Both the AUDIT and DUDIT were scored for those who answered at least five items in each, and these individuals' missing items were replaced by the individual means, following the recommendations of Hawthorne and Elliot" (Muller et al. 2018)

Inferences about the effect of R2C on the primary outcome will be based on the comparison, between treatment groups, of their changes from baseline to 3 months follow-up. This comparison will be based on a t-test of the corresponding interaction contrast – this t-test will utilise the predicted means and their variance-covariance matrix that are recovered from the fitted mixed model for all repeated assessments up to and including 12 months.

The following sequence of mixed model analyses will be conducted:

(1) Analyse the raw (i.e. untransformed values) with an independence (i.e. equicorrelation) model for the repeated measurements
(2) Check residual variance assumptions using diagnostic residual plots and, if deemed necessary, explore the empirical logit transformation. Determine the measurement scale (raw or transformed).

(3) For the selected measurement scale, investigate three alternative error variance/covariance models (VCVMs) - Independence, First Order Autoregressive, i.e. AR(1) and Unstructured. Models will be compared using the Akaike Information Criterion (AIC) and the VCVM model with the smallest AIC will be selected unless a more parsimonious model has an AIC within 10 units of the minimum AIC in which case the more parsimonious VCVM model will be given preference.
(4) Declare the "definitive scale" (raw or transformed) and VCVM for the DUDIT Total Score and, if not contraindicated, use these also for the domain scores (defined as, for example: drug use frequency, problems associated with drug use).
(5) Report the definitive analyses.
(6) Conduct the PPS sensitivity analysis using the definitive approach identified in Step 5 and restrict this to the DUDIT Total Score.
(7) Explore adjustments for gender, illicit drug use, extent of exposure to the intervention, exposure to other treatments or programs, level of psychological distress and, if appropriate, level of methamphetamine use at baseline (and interactions with treatment group). A full list of covariates is outlined below. As these analyses will be exploratory, we will not adjust alphas in these analyses. As parsimony will be the aim of the exploratory analyses, the most restricted model will be selected.
(8) Explore alternative representations of the DUDIT Total Score, in particular:

    Ordered symptom categories defined as:

    0–1 (Women) / 0–5 (Men): No indication of problematic drug use.
    2–24 (Women) / 6–24 (Men): Likely problematic drug use.
    25 or more (Both genders): Suggests severe drug dependence.

    Berman AH, Bergman H, Palmstierna T, Schlyter F. DUDIT. The Drug Use Disorders Identification Test–E MANUAL Karolinska institute, Stockholm. 2007.

    Domain categories defined as, for example:

    Items 1 – 3: drug use frequency
    Items 4 – 11: problems associated with drug use

    Matuszka B, et al. Psychometric characteristics of the drug use disorders identification test (DUDIT) and the drug use disorders identification test-extended (DUDIT-E) among young drug users in Hungary. International journal of behavioral medicine. 2014 Jun;21:547-55.

    Hildebrand M. The psychometric properties of the drug use disorders identification test (DUDIT): a review of recent research. Journal of substance abuse treatment. 2015 Jun 1;53:52-9.

All analyses will be conducted either using PROC GLIMMIX in SAS or the meologit and mixed commands in Stata. Ordinal outcomes will be analysed using a cumulative logit link function and modelled as ordinal responses. Continuous outcomes will be analysed using linear mixed

models assuming a normal distribution. A dichotomised (binary) representation of the ordinal outcome, with categories with categories 1 and 2 combined or categories 2 and 3 combined, will also be explored using a logit link function and a binomial distribution.

For all secondary outcomes, missing values will follow published guidelines. Where guidelines are absent the following rules will be applied:

1. If the number of missing items is greater than 50% then no calculation will be done.
2. Otherwise, if the number of non-missing items is greater than or equal to 50% then a calculation will be done – the mean of the non-missing items will be divided by the range and multiplied by the maximum possible score for the total.

2. Methamphetamine use patterns

Days of MA use and amount of MA used assessed with the Timeline Follow-back (TLFB) calendar-based assessment tool. The following guidance will be used when calculating the TLFB:

Robinson, S. M., Sobell, L. C., Sobell, M. B., & Leo, G. I. (2014). Reliability of the Timeline Followback for cocaine, cannabis, and cigarette use. Psychology of Addictive Behaviors, 28(1), 154–162. https://doi.org/10.1037/a0030992

The following outcome variables will be analysed:

- Methamphetamine:
    - Days consumed (days total)
    - Amount used (grams total)

3. Structured Clinical Interview for DSM-5 Research Version (SCID-5-RV)

Number of DSM-5 methamphetamine use disorder criteria met; presence and severity of MA use disorder assessed using the Structured Clinical Interview for DSM-5 Research Version (SCID-5-RV). Scores range 0–11, with higher scores suggesting greater severity of MA use disorder. Scores ≤1 or ≥ 6 typically warrant clinical review for inclusion in the study. The SCID-5-RV will also be used as a measure of change in this trial.

The time frame has been adapted to cover 3-months prior to assessment (rather than the year) and thereby enabled follow-up assessments at 6 and 12 months (secondary outcomes). Baseline assessment utilised both past year and 3-month time frame.

The following guidance will be used for calculating the SCID score:

First, M., Williams, J., Karg, R., & Spitzer, R. (2015). Structured clinical interview for DSM-5—Research version (SCID-5 for DSM-5, research version; SCID-5-RV). Arlington, VA: American Psychiatric Association, 1-94.

McKetin, R., Najman, J.M., Baker, A.L., Lubman, D.I., Dawe, S., Ali, R., Lee, N.K., Mattick, R.P. and Mamun, A. (2012), Methamphetamine use treatment outcomes. Addiction, 107: 1998-2008. https://doi.org/10.1111/j.1360-0443.2012.03933.x

4. Craving Experience Questionnaire (CEQ)

Past-week frequency of MA cravings, and strength of strongest craving, assessed with the Craving Experience Questionnaire (CEQ). Scores range from 0 to 100. Higher score indicates greater craving frequency and strength. The following guidance will be used for calculating CEQ score:

May, J., Andrade, J., Kavanagh, D. J., Feeney, G. F., Gullo, M. J., Statham, D. J., Skorka-Brown, J., Connolly, J. M., Cassimatis, M., Young, R. M., & Connor, J. P. (2014). The craving experience questionnaire: a brief, theory-based measure of consummatory desire and craving. *Addiction (Abingdon, England)*, *109*(5), 728–735. https://doi.org/10.1111/add.12472

5. Depression, Anxiety and Stress Scale (DASS)

Past-month psychological functioning assessed with the Depression, Anxiety and Stress Scale-21 (DASS-21). Total scores range from 0 to 63 (depression scored 0–21, anxiety scored 0–21, stress scored 0–21). Higher score indicates higher symptom severity. The following guidance will be used for calculating DASS-21 score:

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. Behaviour Research and Therapy, 33(3), 335-343.

6. Community Assessment of Psychotic Experiences (CAPE-15)

Psychotic-like experiences assessed using the Community Assessment of Psychotic-like Experiences, 15-item revision (CAPE-15). The CAPE-15 will also be used as a measure of change in this trial. The following guidance will be used for calculating CAPE-15 scores:

Capra, C., Kavanagh, D. J., Hides, L., & Scott, J. G. (2017). Current CAPE-15: a measure of recent psychotic-like experiences and associated distress. *Early intervention in psychiatry*, *11*(5), 411–417. https://doi.org/10.1111/eip.12245

Bukenaite, A., Stochl, J., Mossaheb, N., Schäfer, M. R., Klier, C. M., Becker, J., Schloegelhofer, M., Papageorgiou, K., Montejo, A. L., Russo, D. A., Jones, P. B., Perez, J., & Amminger, G. P. (2017). Usefulness of the CAPE-P15 for detecting people at ultra-high risk for psychosis: Psychometric properties and cut-off values. *Schizophrenia research*, *189*, 69–74. https://doi.org/10.1016/j.schres.2017.02.017

Knight, C., Stochl, J., Soneson, E., Russo, D. A., Jones, P. B., & Perez, J. (2020). Revisiting CAPE-P15 cut-off values to increase sensitivity for detecting psychotic experiences in primary care. Schizophrenia research, 216, 507–510. https://doi.org/10.1016/j.schres.2019.11.051

7. EUROHIS-QOL 8-item index (single item)

Past-month quality of life (QoL) assessed with the EUROHIS-QOL single item.

Nosikov, A., & Gudex, C. (2003). Development of a common instrument for quality of life. EUROHIS: Developing common instruments for health surveys, 57, 145.

8. Days of other drug use

Days of other drug use (i.e. alcohol, tobacco, illicit drugs, medications not prescribed and/or taken more than prescribed) in the past 28 days assessed with the Timeline Follow-back (TLFB) calendar-based assessment tool. The following guidance will be used when calculating the TLFB:

Robinson, S. M., Sobell, L. C., Sobell, M. B., & Leo, G. I. (2014). Reliability of the Timeline Followback for cocaine, cannabis, and cigarette use. Psychology of Addictive Behaviors, 28(1), 154–162. https://doi.org/10.1037/a0030992

The following outcome variable will be analysed:

- For each other drug use:
    - Days consumed (days total)

9. Adverse events

Adverse and significant adverse event items asked during intervention (calls 2–6), at the 6-week follow-up (and at the 3–12-month follow-ups, only if the participant discloses something during data collection that necessitates recording).

Adverse event (AE): Record as an AE if the participant reports (i) significantly increased distress, (ii) significantly increased methamphetamine cravings, or (iii) the issue for which the participant was looking for help got a lot worse.

(response options: yes, negative effects after participating in the last session, no negative effects after participating in the last session).

Significant adverse Event (SAE): Record as a SAE if participant reports: (i) hospitalisation relating to suicidal behaviour or other psychiatric condition, methamphetamine or other substance use (e.g. overdose, use-related injury) (ii) Any event resulting in substantial disability or death of a participant will be treated as a SAE. (iii) suicidal thoughts and/or behaviours not resulting in hospitalisation See section 13 of the protocol for more information.

(response options: yes, no)

Cost-effectiveness analysis

The economic evaluation will assess the mean incremental costs and mean incremental benefits of treatment of R2C-M compared to control. Benefits will be measures as quality-adjusted life years (QALYs). Incremental QALYs will be measured by the between-group difference in mean EQ-5D-5L score over 12-months, weighted using the most up to date Australian value set (Norman et al. 2023). A health system perspective on costs will be taken and will include resource use incurred in the delivery of telephone intervention as well as health services irrespective of payment source. Health care costs will be calculated from the utilisation data and average unit costs for each item. Running costs will be included, but not the costs of training in the primary analysis. In a supplementary analysis, we will model the potential cost effectiveness using a broader societal perspective and include estimates of the cost of work-related losses

using the WHO HPQ28-day, crime and interpersonal related harms associated with MA use from literature sources.

Cost effectiveness analysis results will be presented as the mean net benefits of treatment across a range of hypothetical money values of QALYs, with 95% CIs and a one-sided p-value calculated using non-parametric bootstrapping. Net benefit estimates will be based on the between group difference in the means cost and outcome over the 12-months estimated using separate regression analyses controlling for baseline values and the stratification variable. A generalized linear regression model, with an appropriate choice of distribution, will be used to account for any skewness in the cost data. Multiple imputation will be used to address the uncertainty of the estimates due to missing observations. A secondary analysis will estimate a "per-protocol" cost-effectiveness of the intervention adjusted for non-adherence. Instrumental variable estimation will be used with the randomization group as the instrument for adherence, defined as at least two telephone counselling sessions.

Key cost-effectiveness outcomes

10. Quality-adjusted life years (QALYs) assessed with the EuroQol, 5 dimensions, 5 levels (EQ-5D-5L+)

A modified version of the EQ-5D-5L+ will be used to measure health-related quality of life for the economic evaluation. The EQ-5D-5L is a validated health measure which describes 5 dimensions of health (Mobility, Self-Care, Usual Activities, Pain/Discomfort, and Anxiety/Depression), each with 5 levels of functioning (i.e. "no problems" to "extreme problems") (67). Four items from the Assessment of Quality of Life 8D (AqoL-8D; a widely used, validated measure of QoL) (68) related to Vitality, Sleep, Close Relationships and Community Connectedness are added to the EQ-5D-5L to create the EQ-5D-5L+ (~4 mins to administer). This composite measure has been found to capture 90% of the variation in the AqoL-8D and can be used to give an accurate prediction of that utility score, while being a shorter measure (i.e. 9 items) to reduce participant burden. For the analyses, just the EQ-5D-5L component will be utilised to calculate QALYs due to the established value sets for this aspect of the instrument. Conversion will be done using the most up-to-date utility weights:

> Norman, R., Mulhern, B., Lancsar, E. et al. The Use of a Discrete Choice Experiment Including Both Duration and Dead for the Development of an EQ-5D-5L Value Set for Australia. PharmacoEconomics 41, 427–438 (2023). https://doi.org/10.1007/s40273-023-01243-0

The expanded version will be explored in future supplementary analyses.

11. WHO Health and Performance Questionnaire (WHO HPQ 28-Day)

Time lost from work or from lower work productivity will be assessed with the WHO Health and Work Performance Questionnaire Clinical Trials 28-Day Version (WHO HPQ 28-Day). Based on this, changes in average weekly hours worked, earnings, and productivity will be calculated and compared between intervention arms. Weekly earnings will be valued using Australian averages as reported by the Australian Bureau of Statistics (ABS).

Australian Bureau of Statistics. (2024). *Employee earnings*. ABS. https://www.abs.gov.au/statistics/labour/earnings-and-working-conditions/employee-earnings/latest-release.

Kessler RC, Barber C, Beck A, Berglund P, Cleary PD, McKenas D, et al. The world health organization health and work performance questionnaire (HPQ). J Occup Environ Med. 2003;45(2):156–74.

12. 3Mg trial's Health-care Resource Use

Health resource usage in past 3 months will be assessed with the 3Mg trial's Health-care Resource Use Questionnaire.

Goodacre, S., Cohen, J., Bradburn, M., Stevens, J., Gray, A., Benger, J., & Coats, T. (2014). The 3Mg trial: a randomised controlled trial of intravenous or nebulised magnesium sulphate versus placebo in adults with acute severe asthma. Health Technology Assessment (Winchester, England), 18(22), 1-168.

Unit costs will be based on published fees and prices for public services in Australia using the following sources:

Australian Government Department of Health and Aged Care. (2016). *Manual of resource items and their associated unit costs V5.0*. https://www.pbs.gov.au/info/industry/useful-resources/manual

Australian Government Department of Health and Aged Care. (2025). *Medicare Benefits Schedule*. https://www.mbsonline.gov.au/internet/mbsonline/publishing.nsf/Content/Home

Australian Government Department of Health and Aged Care. (2025). *Schedule of Pharmaceutical Benefits*. https://www.pbs.gov.au/browse/publications

Independent Health and Aged care Pricing Authority (2025) *National Efficient Price Determination*. IHACPA. https://www.ihacpa.gov.au/health-care/pricing/national-efficient-price-determination.

Key exploratory outcomes

13. Pittsburgh Sleep Quality Index (PSQI)

Sleep quality and disturbances assessed with the Pittsburgh Sleep Quality Index (PSQI). Changes in the Global PSQI score and components will be assessed over time. The following guidance will be used for calculating PSQI total and component scores:

Beck, S. L., Schwartz, A. L., Towsley, G., Dudley, W., & Barsevick, A. (2004). Psychometric evaluation of the Pittsburgh Sleep Quality Index in cancer patients. Journal of pain and symptom management, 27(2), 140-148.

Buysse, D. J., Reynolds, C. F., 3rd, Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and

research. *Psychiatry research*, *28*(2), 193–213. https://doi.org/10.1016/0165-1781(89)90047-4
Smyth C. (2000). The Pittsburgh Sleep Quality Index (PSQI). *Insight (American Society of Ophthalmic Registered Nurses)*, *25*(3), 97–98. https://doi.org/10.1067/min.2000.107649

Original calculation directions (Buysse et al 1989) did not address possible overlap of responses when calculating Component 3. Any overlapping responses for Component 3 are scored as per appendix 1 of Beck et al. (2004).

Original calculation directions (Buysse et al 1989) did not address missing 'sleep disturbance' items used to calculate Component 5. When 'other' sleep disturbance item is missing, provide value of 0 as per Smyth (2000). If other items used to calculate Component 5 are missing, score as 0 (i.e. no disturbance) as per personal communication with Ogeil (2023).

Original calculation directions (Buysse et al 1989) did not address how to calculate Component scores if missing data on items, or how to calculate PSQI Global score if missing component scores. Consistent with Beck (2004) we will calculate a Global Sleep Quality computation if at least five of the seven components are present. A mean of the non-missing components will be computed and the result multiplied by 7 to give a comparable score.

14. Reduced Morningness-Eveningness Questionnaire (rMEQ)

Chronotype assessed with the Reduced Morningness-Eveningness Questionnaire (rMEQ). The following guidance will be used for calculating rMEQ total score.

Adan, A., & Almirall, H. (1991). Horne & Östberg morningness-eveningness questionnaire: A reduced scale. . Personality and Individual differences, 12(3), 241-253.
Chelminski, I., Petros, T. V., Plaud, J. J., & Ferraro, F. R. (2000). Psychometric properties of the reduced Horne and Ostberg questionnaire. Personality and Individual differences, 29(3), 469-478. https://doi.org/10.1016/S0191-8869(99)00208-1
Katarina Danielsson, Aysegül Sakarya & Markus Jansson-Fröjmark (2019) The reduced Morningness–Eveningness Questionnaire: Psychometric properties and related factors in a young Swedish population, Chronobiology International, 36:4, 530-540, DOI: 10.1080/07420528.2018.1564322

In absence of explicit published guidance, missing values in the items that comprise the total rMEQ score will be accommodated as follows:

i. If the number of missing items is >50% then no calculation will be done.
ii. If the number of non-missing items is ≤50% then calculation will be done. The mean of the non-missing items will be multiplied by the number of items used to calculate total score.

Covariates for exploratory analyses of the primary outcome variable, for example:

Covariate	Description
Sessions completed	Continuous variable: 1-6 sessions 4-6 R2C sessions completed defined as treatment completion
Sex	1, Female 2, Male 3, Self-described 4, Other
Gender	1, Female 2, Male 3, Self-described/Prefer not to say 4, Other
Age	Continuous variable
Relationship status	1, Single 2, Separated or divorced 3, Widowed 4, In a relationship (married, de facto, living with life partner)
Remoteness	Derived from postcode data 1, Major city 2, Inner regional 3, Outer regional 4, Remote 5, Very remote. If some categories too small, report on geographic area, where major city = metropolitan; inner regional + outer regional + remote = non-metropolitan)
Socio-Economic Indexes for Areas (SEIFA)	Derived from postcode data
Education	0, Not completed Year 9 or equivalent 1, At least year 9 or equivalent (but not year 12 or equivalent) 2, Year 12 or equivalent 3, Vocational training / apprenticeship / Certificate I, II, III, IV 4, Diploma, advanced diploma or associate degree (no Bachelor's degree) 5, Bachelor's degree (without Honours) 6, Honours / graduate certificate / graduate diploma (has Bachelor's degree) 7, Master's degree 8, Doctoral degree
Aboriginal or Torres Strait Islander	1, Aboriginal 2, Torres Strait Islander 3, Both 4, Neither
Ethnicity	1, Oceanian 2, North-west European 3, Southern and Eastern European 4, North African and Middle Eastern 5, South-east Asian 6, North-East Asian 7, Southern and Central Asian 8, People of the Americas 9, Sub-Saharan African
Sexuality	1, Straight or heterosexual 2, Gay, lesbian or homosexual 3, Bisexual or pansexual

	4, Asexual 5, Another sexual orientation (please describe) 6, Don't know 7, Prefer not to say
LGBTQIA+	If the person is not cisgender (i.e. their gender identity does not align with the sex assigned at birth) and their sexual orientation is gay, lesbian, homosexual, bisexual, pansexual, asexual, or another non-heterosexual identity.
Housing status	1, Privately rented home 2, Public housing 3, Privately owned home 4, Parent's / family member's / friend's home 5, Boarding house / hostel / shelter or refuge 6, No stable residence / homeless 7, Other
Number of years since first used MA	Continuous variable
Number of years since first started using MA regularly	Continuous variable
Previous methamphetamine treatment & treatment type	- Withdrawal management (or 'acute withdrawal' or 'detoxification'; medicated or non-medicated, in any delivery setting, e.g. inpatient or home-based) - AOD counselling (individual or group; excluding AOD counselling as part of a rehabilitation program, telephone/online service, or outpatient health care) - Rehabilitation (non-residential, residential, therapeutic community) - Pharmacotherapy (if pharmacotherapy for withdrawal specifically, code as withdrawal management) - Support and case management (provided by an AOD worker, e.g. care and recovery coordination, treatment planning and monitoring, outreach, advocacy, facilitated referral) - Information and education - Peer-support/mutual aid groups (e.g. AA, NA, SMART Recovery; excluding online support) - Telephone/online AOD support/counselling (e.g. Alcohol Drug Information Support, DirectLine, Counselling Online, Hello Sunday Morning, peer support forums) - Outpatient health care where AOD is a focus of treatment / support (e.g. GP, psychologist, psychiatrist, mental health nurse, mental health worker, crisis and assessment team)
Previous alcohol or drug treatment (not methamphetamine) & treatment type	- Withdrawal management (or 'acute withdrawal' or 'detoxification'; medicated or non-medicated, in any delivery setting, e.g. inpatient or home-based) - AOD counselling (individual or group; excluding AOD counselling as part of a rehabilitation program, telephone/online service, or outpatient health care) - Rehabilitation (non-residential, residential, therapeutic community) - Pharmacotherapy (if pharmacotherapy for withdrawal specifically, code as withdrawal management) - Support and case management (provided by an AOD worker, e.g. care and recovery coordination, treatment planning and monitoring, outreach, advocacy, facilitated referral) - Information and education - Peer-support/mutual aid groups (e.g. AA, NA, SMART Recovery; excluding online support) - Telephone/online AOD support/counselling (e.g. Alcohol Drug Information Support, DirectLine, Counselling Online, Hello Sunday Morning, peer support forums)

	- Outpatient health care where AOD is a focus of treatment / support (e.g. GP, psychologist, psychiatrist, mental health nurse, mental health worker, crisis and assessment team)
Ready2Change study goal	- Not seeking to reduce methamphetamine use - Take a break from methamphetamine use - Reduce methamphetamine use (amount and/or frequency) - Get my methamphetamine use under control - Reduce harm from methamphetamine use - Abstain from methamphetamine use - Other
Cognitive Impulsivity Suite (CIS)	Impulse control assessed with the Cognitive Impulsivity Suite. The following guidance will be used for calculating CIS total score: Verdejo-Garcia, A., Bellgrove, M., & Lubman, D. (2019). Mapping cognitive impulsivity through online testing. In https://research.monash.edu/en/projects/mapping-cognitive-impulsivity-through-online-testing Verdejo-Garcia, A., Tiego, J., Kakoschke, N. et al. A unified online test battery for cognitive impulsivity reveals relationships with real-world impulsive behaviours. Nat Hum Behav 5, 1562–1577 (2021). https://doi.org/10.1038/s41562-021-01127-3
Working Alliance Inventory-Short Revised (WAI-SR)	Participants therapeutic experience of the R2C program was measured using the Working Alliance Inventory. The following guidance will be used for calculating total WAI-SR score. Munder T, Wilmers F, Leonhart R, Linster HW, Barth J. Working Alliance Inventory-Short Revised (WAI-SR): psychometric properties in outpatients and inpatients. Clin Psychol Psychother. 2010 May-Jun;17(3):231-9. doi: 10.1002/cpp.658. PMID: 20013760.
Short Barriers Questionnaire (SBQ)	Barriers to help-seeking for MA use disorder assessed with the Short Barriers Questionnaire (SBQ). Scores range from 0 to 66 (low perceived need scored 0–27; stigma scored 0–18; apprehension scored 0–21). Higher scores indicate greater importance of barrier. The following guidance will be used for calculating . McKetin, R., Voce, A., Burns, R., & Quinn, B. (2020). The Short Barriers Questionnaire (SBQ): Validity, factor structure and correlates in an out-of-treatment sample of people dependent on methamphetamine. Journal of Substance Abuse Treatment, 108029. https://doi.org/10.1016/j.jsat.2020.108029
Readiness Ruler I-C-R (RR-ICR)	Readiness to change at randomisation assessed with the Readiness Ruler I-C-R (RR-ICR). Importance, confidence and readiness scored 0–10. Higher scores indicate greater change readiness. The RR-ICR will be used as a predictor of treatment response in this trial. The following guidance will be used for calculating the RR-ICR total score: Herie, M., & Selby, P. (2007). Getting beyond "Now is not a good time to quit smoking" Increasing motivation to stop smoking. Journal of smoking cessation, 1(2), 140-146.
Current additional methamphetamine treatment	(At follow-up) - Withdrawal management (or 'acute withdrawal' or 'detoxification'; medicated or non-medicated, in any delivery setting, e.g. inpatient or home-based)

	- AOD counselling (individual or group; excluding AOD counselling as part of a rehabilitation program, telephone/online service, or outpatient health care) - Rehabilitation (non-residential, residential, therapeutic community) - Pharmacotherapy (if pharmacotherapy for withdrawal specifically, code as withdrawal management) - Support and case management (provided by an AOD worker, e.g. care and recovery coordination, treatment planning and monitoring, outreach, advocacy, facilitated referral) - Information and education - Peer-support/mutual aid groups (e.g. AA, NA, SMART Recovery; excluding online support) - Telephone/online AOD support/counselling (e.g. Alcohol Drug Information Support, DirectLine, Counselling Online, Hello Sunday Morning, peer support forums) - Outpatient health care where AOD is a focus of treatment / support (e.g. GP, psychologist, psychiatrist, mental health nurse, mental health worker, crisis and assessment team)
Current additional alcohol or drug treatment (not methamphetamine)	- Withdrawal management (or 'acute withdrawal' or 'detoxification'; medicated or non-medicated, in any delivery setting, e.g. inpatient or home-based) - AOD counselling (individual or group; excluding AOD counselling as part of a rehabilitation program, telephone/online service, or outpatient health care) - Rehabilitation (non-residential, residential, therapeutic community) - Pharmacotherapy (if pharmacotherapy for withdrawal specifically, code as withdrawal management) - Support and case management (provided by an AOD worker, e.g. care and recovery coordination, treatment planning and monitoring, outreach, advocacy, facilitated referral) - Information and education - Peer-support/mutual aid groups (e.g. AA, NA, SMART Recovery; excluding online support) - Telephone/online AOD support/counselling (e.g. Alcohol Drug Information Support, DirectLine, Counselling Online, Hello Sunday Morning, peer support forums) - Outpatient health care where AOD is a focus of treatment / support (e.g. GP, psychologist, psychiatrist, mental health nurse, mental health worker, crisis and assessment team)