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Benzodiazepine intervention in adults receiving opioid agonist treatment

Submission date
08/08/2025

Recruitment status
Not yet recruiting

Registration date
05/11/2025

Overall study status
Ongoing

Last Edited
23/01/2026

Condition category
Mental and Behavioural Disorders

[X] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[X] Record updated in last year

Plain English summary of protocol

Background and study aims
Benzodiazepines are medicines prescribed to help anxiety and sleep problems in the short term (generally prescribed for up to 12 weeks). However, the use of benzodiazepines with opioid drugs like heroin is common in people who use illegal (street) drugs. This is linked to the high level of drug-related deaths (DRD) in the UK. Opioid dependency can be treated safely with opioid agonist treatment (OAT) using methadone or buprenorphine on prescription. However, there is no similar treatment for people who are also dependent on benzodiazepines. This is a problem because street-sourced benzodiazepines are being used by people being prescribed OAT. The huge increase in Scottish DRDs is linked to when the widespread use of street benzodiazepines began. Street drugs can be stronger than expected or contain a mixture of unknown drugs, including new ones. This can cause blackouts, overdose and even death.

Who can participate?
People who are being treated with OAT and who are using street benzodiazepines.

What does the study involve?
The study will test whether providing a steady supply of a prescribed diazepam (a type of benzodiazepine), along with additional support, will reduce the use of street benzodiazepines by participants. Everyone in the study will continue with their OAT treatment.

A successful treatment needs to consider why people use these drugs in the first place. An earlier study by the trial study team developed the intervention with people with lived experience of using benzodiazepines and with clinicians. This intervention involved a prescription for diazepam alongside extra support to address why people use benzodiazepines (anxiety, trauma, sleep problems and pain). The intervention also included safety and harm reduction information to make people aware of the risks of street benzodiazepines. The prescribing of diazepam was embedded in the whole intervention package. Whilst the prescription was initially considered the ‘hook’ to engage people, over time, people were able to develop trust such that the motivations for their benzodiazepine use could be discussed.

In the current study, this intervention, which includes a steady dose of 16-30mg of diazepam, will be compared to 'standard' care. Standard care, recommended by national guidance, involves

providing a reduced dose of diazepam over a maximum period of six months. Half of the people who take part in the study will get the steady dose as part of the intervention described above, and half will get the standard care. For everyone in the study, the use of high-risk street benzodiazepines will be measured via a mouth swab every month – the swab will be tested in a laboratory to see what drugs have been taken. People will also be asked about their drug and alcohol use (self-report), including the amount taken, use of other street drugs and the number of other drugs used. This will be done monthly. Further information will be collected on overdoses requiring an antidote (naloxone), an ambulance or admission to hospital, deaths from overdose or any other reason. Information will be collected every 6 months on anxiety, depression, memory and cognition, and whether treatment is acceptable. Outcome data collection will last 12 months, but participants will get the intervention for 15 months.

The study will collect information on how people in each group of the trial use services. This will allow us to work out if the intervention is value for money. The study will also test for new drugs which might come onto the street drug market during the study, using a mouth swab. Looking out for new drugs can ensure they are screened for during our regular tests. The study team will work with a specialist testing centre to do this.

At 3 months and after 12 months, some participants and the staff working with them will be interviewed to learn about their experience of treatment in both intervention and control groups. This will help us understand why the new intervention or standard care works or does not.

Where is the study run from?
Centre for Healthcare and Community Research, University of Stirling, UK. The trial will cover at least six sites across Scotland and England where benzodiazepine use is a particular problem.

When is the study starting and how long is it expected to run for?
May 2025 to January 2029

Who is funding the study?
The National Institute for Health and Care Research (NIHR), UK

Who is the main contact?
Prof Catriona Matheson (Principal Investigator), University of Stirling, catriona.matheson@stir.ac.uk

Contact information

Type(s)
Principal investigator

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Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

Integrated Research Application System (IRAS)
1012642

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
In-BOAT

Study information

Scientific Title
In-BOAT: a randomised controlled trial of a diazepam maintenance intervention versus standard care of tapering diazepam to reduce dependent street benzodiazepine use in adults receiving opioid agonist treatment (OAT)

Acronym
The In-BOAT Trial

Study objectives
We aim to test the effectiveness of a diazepam maintenance intervention against standard care - a tapering dose of diazepam - in reducing street benzodiazepine use over 12 months. The standard care tapering dose aims to reduce the dose of diazepam over a six month period and then stop the dose. We will measure street benzodiazepine use over a 12 month period with monthly oral fluid swabs which will be tested using toxicology tests.

Our secondary objectives are:

To measure substance use disorder outcomes and effectiveness at reducing harmful substance use (bingeing, mega-dosing, polydrug use, overdose), retention in treatment and health and wellbeing outcomes (anxiety, depression, quality of life, substance use recovery, participant satisfaction and cognitive function) between arms;

To assess the cost effectiveness and cost consequence of the intervention compared to standard care from a health and social care perspective and model long term cost-effectiveness if the trial was implemented;

To review emergence of new street benzodiazepines through toxicological surveillance and adjust screening accordingly;

To undertake a process evaluation to understand retention, adherence to treatment, and experiences of people in each arm to better understand the success or otherwise of the intervention.

Ethics approval required
Ethics approval required

Ethics approval(s)
approved 02/10/2025, Health and Social Care Research Ethics Committee A (HSC REC A) Office for Research Ethics Committees Northern Ireland (ORECNI) (Lissue Industrial Estate West, 5 Rathdown Walk, Lisburn, BT28 2RF, United Kingdom; +44 (028) 95 361400; info.orecni@hscni.net), ref: 25/NI/0117

Study design
Randomized active-controlled open-label parallel-group study

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Medical condition: Adults enrolled in OAT (Opioid Agonist Treatment) with DSM-5-diagnosed substance (benzodiazepine) use disorder with toxicologically verified non-prescription benzodiazepine use in the previous month.
Medical condition in lay language: Adults who are enrolled in Opioid Agonist Treatment programme (methadone or buprenorphine) who are using non-prescribed (street) benzodiazepine.
Therapeutic areas: Psychiatry and Psychology [F] - Behaviours [F01]

Interventions
An online tool will randomly assign In-BOAT participants to either the diazepam maintenance intervention (a maintenance maximum daily dose of 30mg diazepam with tailored psychosocial support) or Standard care (a tapering diazepam dose from a maximum dose of 30mg daily diazepam reduced flexibly in 2mg increments, to achieve a zero dose by 6 months).

Intervention Type
Drug

Phase
Phase III

Drug/device/biological/vaccine name(s)
Diazepam

Primary outcome(s)
The number of positive tests for street benzodiazepines as determined by toxicology via monthly oral fluid testing (or urine if preferred by patient), in a 12-month period

Key secondary outcome(s))
1. Substance use over the previous month, including compensatory substance use (drugs and alcohol); high dose and polydrug use; heavy drinking days; days of abstinence; drug use trajectory over time; overdose requiring emergency care (naloxone, ambulance or emergency department attendance or hospital admission) measured using bespoke questions capturing participant self-report, at Baseline and monthly for 12 months
2. Resource use (including ambulance calls, hospital admissions, accident and emergency primary care and outpatient clinics, social work appointments) measured using bespoke questions capturing participant self-report, at Baseline and monthly for 12 months
3. Adverse events capturing participant self-report and any events documented in their case notes, monthly for 12 months
4. Retention in treatment, changes to prescribed medication, including OAT dose, and engagement with treatment measured using bespoke questions capturing participant self-report, impression of site researcher and data extracted from medical notes, monthly for 12 months
5. Demographics, Health, occupational and education status, social circumstances measured using bespoke questions capturing participant self-report, at Baseline and 12 months
6. Mental health (anxiety and depression); Cognition and memory; Participant-reported improvement and recovery; Quality of life; Satisfaction with treatment; GAD-7, PHQ-9, ACEIII, SURE, EQ-5D-5L and TPQ questionnaires; at Baseline (apart from TPQ), 6 months and 12 months timepoint
7. Cost-effectiveness, in terms of the incremental cost per quality-adjusted life year, and cost-consequences measured using analysis based on data captured under ‘Resource used’

Completion date
31/01/2029

Eligibility

Key inclusion criteria
1. Adults aged 18 and over enrolled in OAT who are clinically stable on OAT (methadone or buprenorphine)
2. With toxicologically verified non-prescription benzodiazepine use in the previous month
3. With DSM-5-diagnosed substance (benzodiazepine) use disorder
4. At risk of harm from street benzodiazepine use. Risk of harm is defined as regular use of unregulated street benzodiazepines, overdose (defined as ambulance call or emergency department attendance) or reported binge use (defined as black-out/loss of memory)

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 years

Upper age limit
100 years

Sex
All

Total final enrolment
0

Key exclusion criteria
1. Co-occurring alcohol dependence
2. Already prescribed a benzodiazepine or have had a benzodiazepine prescription in the previous month
3. Current pregnancy or breastfeeding
4. Non-English speaking
5. Diagnosed with severe mental illness or severe cognitive impairment
6. Contraindications with diazepam therapy
7. Inability or incapacity to consent

Date of first enrolment
01/03/2026

Date of final enrolment
31/12/2026

Locations

Countries of recruitment
United Kingdom

England

Scotland

Study participating centre
NHS Grampian
Summerfield House

2 Eday Road
Aberdeen
Scotland
AB15 6RE

Study participating centre
NHS Tayside
Kings Croos
Clepington Road
Dundee
Scotland
DD3 8EA

Study participating centre
NHS Greater Glasgow and Clyde
J B Russell House
Gartnavel Royal Hospital
1055 Great Western Road Glasgow
Glasgow
Scotland
G12 0XH

Study participating centre
Sunderland (Change, Grow, Live)
4-6 Mary Street
Sunderland
England
SR1 3NH

Study participating centre
Blackpool (Calico)
-
-
England
-

Sponsor information

Organisation

University of Stirling

ROR
https://ror.org/045wgfr59

Funder(s)

Funder type
Government

Funder Name
National Institute for Health and Care Research

Alternative Name(s)
National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study will be available upon request from the Chief Investigator (Prof. Catriona Matheson, catriona.matheson@stir.ac.uk). The datasets will include anonymised quantitative data collected in the main trial, but it will not be possible to share the qualitative data collected during the Process Evaluation part of the study. Quantitative data will be available after trial publication. Consent for data sharing is in place.

IPD sharing plan summary
Available on request