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Extended Research Article

Optimal provision of opiate substitution therapy and needle and syringe programmes: a multi-method realist evaluation

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Disclaimer: This report contains transcripts of interviews conducted in the course of the research and contains language which may offend some readers.

Published December 2025
DOI: 10.3310/HGDS4449

Scientific summary

Optimal provision of opiate substitution therapy and needle and syringe programmes: a multi-method realist evaluation

Health Technology Assessment 2025; Vol. 29: No. 64
DOI: 10.3310/HGDS4449

NIHR Journals Library www.journalslibrary.nihr.ac.uk

Scientific summary

Background

Illicit drug use is an escalating problem in the UK, which now has one of the highest estimated populations of people who use drugs in Western Europe. Injecting drug use is associated with numerous health-related harms, including a high incidence of blood-borne virus infection, soft-tissue and skin infection, premature mortality from overdose, suicide and other causes of death. Two central elements of global, European and UK's harm reduction approach in relation to illicit drug use are opiate substitution therapy (OST) and needle and syringe programmes (NSPs). Engagement and retention in OST is a recognised problem globally. To prevent and reduce further harms, it is imperative that different models of service provision are better understood to attract and retain more service users in harm reduction services.

Objectives

The overall aim of the study was to generate a theory of optimal service provision with in-depth knowledge of the contextual factors and the mechanisms that influence access, engagement, retention and exit of OST/NSP services. We conducted a multi-method realist evaluation (RE) over two phases to meet four study objectives.

Phase 1

Objective 1: To conduct a *meta-synthesis* (MS) of qualitative studies using systematic review methods to identify the barriers and facilitators that impact on the use of OST and NSP services.

Objective 2: To conduct a UK-wide *online survey* of service commissioners to map current models of OST prescribing and practices to better understand current service provision/delivery.

Phase 2

Objective 3: To undertake a qualitative RE using a case study approach to establish the contexts and mechanisms that impact on the use of OST and NSP provision in the UK.

Objective 4: To estimate additional staff costs of implementing characteristics of 'optimal' OST provision identified by the qualitative RE in one study site.

Methods

Patient and public involvement took place throughout the study.

Meta-synthesis methods

We conducted a systematic review and MS of qualitative studies. A prior protocol was published: PROSPERO 2020 CRD42020209646; available from: www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020209646. A sensitive search strategy was developed and then run in multiple online research databases in January 2021: MEDLINE; Cumulative Index to Nursing and Allied Health Literature; British Nursing Index and Archive; Applied Social Science Index and Abstracts; Social Sciences Citation Index and PsycInfo® (American Psychological Association, Washington, DC, USA). In addition, the following grey literature sources were searched: OpenGrey and PsycEXTRA. Any primary or secondary qualitative studies conducted anywhere in the world that sought to understand the optimal provision of NSP and OST services from the perspectives of key stakeholders were included. Studies should have been seeking to understand issues regarding: Access, Engagement, Retention and Exits of OST and/or NSP. All included publications were subject to a global assessment of study quality. Drawing on methods proposed by Noblit and Hare, data synthesis was rigorous and multistaged.

Online survey methods

A cross-sectional online survey was sent to commissioners of OST and NSP services across the UK, including Northern Ireland. The survey was distributed in Spring 2021. A short survey instrument was developed to obtain information on which areas provide OST and NSP services, what the model of service provision is in relation to OST, how they are provided and additional questions about workforce composition and prescribing arrangements.

Realist evaluation methods

In-depth interviews were conducted with a range of key stakeholders. The target population were the following, sampled from three study sites (two in England and one in Scotland): (1) service users in contact with OST and/or NSP services; (2) service users out of contact with OST and/or NSP services; (3) core drug service managers; (4) core drug service staff; (5) non-core drug service staff and (6) Service commissioners. Study sites were selected purposively to reflect the diversity of models of OST and NSP provision, for example, to include sites that use various models of OST prescribing, including shared care with general practitioners, specialist medical models and pharmacy models. Individual interviews were aimed to be held with six key stakeholder groups (minimum total per study site n = 24): service users in regular contact (target = 8 per site); service users not in regular contact (target = 5 per site); core service managers (target = 3 per site); core service staff (target = 3 per site); non-core services staff (target = 3 per site) and service commissioners (target = 2 per site). All service users were interviewed face to face in a private consultation room at the core service. Some core service managers and staff and non-core drug service staff were also interviewed face to face in private consultation rooms within the core services. All other interviews were carried out by telephone or via Microsoft Teams (Microsoft Corporation, Redmond, WA, USA). The anonymity and confidentiality of participants were protected throughout. Framework analysis was used to analyse the interview data.

Costing analysis methods

A smaller caseload for shared care workers (SCWs) and the implementation of a salary increment scheme were identified by the RE as mechanisms to facilitate service optimisation. The target for an optimal SCW caseload of 50 per full-time equivalent (FTE) worker was specified by the service manager.

The caseload of SCWs in site A was estimated using anonymous event-level treatment data for both SCWs and service users within one of the English study sites was accessed from the local electronic service user records, which provide data for the National Drug Treatment Monitoring System. The treatment data covered 13 weeks from April to June in 2023, 2022 and 2019.

To assess the impact of differences in service user complexity on staff workload, univariable and multivariable linear regressions were performed using service user-level data, with total appointments booked as the dependant variable and substance use type, opiate use in the last 28 days and housing problem as covariates.

The event-level treatment data for SCWs were linked to data supplied by the service on the FTE and years of employment for each worker and any periods of work leave. The mean caseload per FTE in each period was estimated using appointments booked and measures of available staff capacity and full staff capacity. Staff turnover was also estimated. The number of additional FTE workers required for a caseload of 50 per FTE worker was estimated for each period. The salary-related cost of the additional FTE workers required for a caseload of 50 per FTE worker was estimated using a unit salary cost of a FTE worker on spinal point 15 of the 2023–4 National Joint Council for Local Government Services pay scale, and salary oncosts and overheads were estimated to be 35% of the salary cost.

The initial additional annual cost of introducing an illustrative salary increment scheme was calculated using data on the years of employment for each SCW and an estimated unit salary cost of a FTE worker and selected increment costs from the 2023–4 National Joint Council for Local Government Services pay scale.

Results

Meta-synthesis

From 63 included studies (53 OST-related and 10 NSP-related), it was noted that none included the views of commissioners of services; thus their views are absent. Twenty of the included studies (13 OST and 7 NSP) included a total of 449 (15%) staff participants, and 53 studies (45 OST and 8 NSP) included a total of 2518 (85%) service user participants. The views of staff, and to a much greater extent, service users, are therefore well represented in the MS. Studies were conducted across a wide range of countries (mainly North America), with nine being conducted in the UK (six OST/three NSP). The majority (n = 31) were published within the previous 5 years.

The barriers and facilitators identified in the MS significantly contribute to our understanding of four important 'contexts' within which services are delivered. Within these contexts, the barriers and facilitators that were identified contributed towards hypothesised mechanisms that could lead to optimal provision regarding successful access, engagement, retention and exit. This contributed significantly to the identification of an initial programme theory (IPT) of how services can ensure optimal service provision.

Online survey

Thirty-two respondents from 183 commissioning areas surveyed responded (response rate of 17%). Respondents were commissioners, service managers, public health specialists and specialist pharmacists. The COVID pandemic is likely to have had a negative impact, contributing to a very low response rate among already overstretched services, limiting the representativeness and generalisability of the findings. The findings from the survey were triangulated with the findings from the MS, which supported the identified IPT.

Realist evaluation

In-depth interview data were collected from 86 participants in 3 sites between April and September 2022: 29 participants were service users in regular contact with services; 15 were service users not in regular contact with services; 15 were core drug service staff; 12 were core drug service managers; 9 were non-core drug services staff and 6 were drug service commissioners.

Testing of the four contexts of the IPT, via in-depth interview data, indicated that there are examples of best practice and areas of weakness where contemporary service provision needs improvement. As a result, the initial theory was developed into a refined theory with five main contexts, representing the need for services to provide an adequate level of the following factors.

1. Agency and empowerment

This context indicates that optimal service delivery can be achieved and understood with reference to the following three mechanisms:

- Service users are empowered via a person-centred approach to make decisions regarding treatment.
- Services deliver tailored non-punitive, non-restrictive harm reduction approaches that make minimal demands of service users (low-threshold services).
- Service users have access to those involved in their care.

2. Self-esteem and respect

This context indicates that optimal service delivery can be achieved and understood with reference to the following two main mechanisms:

- Staff recognise the importance of confidentiality and a non-stigmatising approach.
- Service users are supported to develop strengths-based competencies, recovery capital and self-esteem.

3. Knowledge and communication

This context indicates that optimal service delivery can be achieved and understood with reference to the following three mechanisms:

- All stakeholders proactively encourage partnership working.
- A peer network programme is embedded into the core service.
- Staff have the knowledge and skills required to provide high-quality care.

4. Goals, needs and preferences

This context indicates that optimal service delivery can be achieved and understood with reference to the following four main mechanisms:

- Recording system(s) are fit for purpose to manage care plan reviewing effectively.
- A commitment to providing services that facilitate a shared ethos, understanding and responsibility between all key stakeholders.
- Access to a full range of services to meet treatment goals and wider needs.
- Appointments take account of service user needs and preferences, and staff are given time and resources to facilitate a proactive approach to meet these.

5. Resources and demands

This new context includes mechanisms related to understanding the multiple demands upon services and the required resources to satisfy those demands, and it indicates that optimal service delivery can be achieved and understood with reference to the following five main mechanisms:

- Understanding service demands to inform service delivery and design so that resources can be allocated appropriately.
- Staff are supported and resourced to overcome barriers to their ability to effect good treatment outcomes and to work effectively and efficiently in their demanding roles.
- Core services receive adequate, reliable and sustained resources to create the right circumstances for good recruitment and retention of staff.
- Funding of core drug services and wider drug service-related initiatives is sufficient, reliable and accessible.
- A range of key performance indicators are measured to direct effective service delivery, ensuring provision remains person-centred.

Our analysis of the data across all contexts also indicates that, within the hypothesised mechanisms, specific 'mechanisms of action' exist. Furthermore, we propose that these mechanisms of action can be understood as mechanisms operating at either of two levels: a 'Systems level' which relates to high-level strategic influence upon the delivery of services (e.g. policy decisions, legislation and funding); and a 'Service level' which relates to the delivery and organisation of services (e.g. service provision pathways; staff roles and responsibilities and organisational culture). Our analysis also identified the potential importance of 'mediating mechanisms' (e.g. confidence, trust and self-efficacy) which can operate to increase the likelihood of successful access, engagement, retention and exit.

Costing analysis

In our single case study site, the FTE staff capacity decreased between the 13-week periods in 2019 and 2022 and then increased in 2023. Long-term leave accounted for 5% (1.4/26.0) of the FTE capacity in 2023 and by taking long-term leave into account, the available FTE capacity increased by 8% (1.9/24.6) between 2019 and 2023. There was a high turnover in staff over time, with 60% (18/30) of available staff in 2023 having also worked in the service in 2022, and this experience compares to 58% (15/26) of available staff in 2022 having also worked in the service in 2019. The FTE staff with < 2 years employment in the service increased from 22% (5.3/23.7) in 2019 to 48% (11.7/24.6) in 2023.

The RE identified a smaller caseload for SCWs and the implementation of a salary increment scheme as key characteristics of the 'optimal' OST provision. The 24.6 FTE available staff working in 2023 had a mean caseload of 67.8

service users per FTE available staff compared to 82.9 in 2022 and 76.3 in 2019. Implementation of a mean caseload of 50 would require an increase in available staff capacity from 24.6 FTEs to 33.4 FTEs, associated with an additional annual staff cost of 32.5%, £328,798. If operating at full staff capacity (26.0 FTEs), then the increase in annual staffing cost would be 27.3%, £276,251. Having accounted for measures of service user complexity, the mean number of appointments booked per service user was lower in 2023 compared to 2019.

The introduction of an illustrative salary increment scheme to aid retention of staff with three annual increments would entail a 3.5% increase in annual staffing cost in 2023, representing £35,726, resulting in a combined cost of £311,977 for the estimated 33.4 FTEs, associated with a caseload of 50 service users per FTE.

Conclusions

We have provided a rich understanding of the contexts, mechanisms and actions by which the optimal delivery of OST and NSP services may be understood in order to increase the likelihood of successful access to, engagement with, retention in and exit from services. Services may wish to consider how well they are currently operating regarding the contexts and mechanisms we have identified and to determine where they may be deficient and then use the descriptions we have provided as a road map to make improvements in those areas.

Study registration

This study is registered as PROSPERO 2020 CRD42020209646.

Funding

This award was funded by the National Institute for Health and Care Research (NIHR) Health Technology Assessment programme (NIHR award ref: NIHR129798) and is published in full in *Health Technology Assessment*; Vol. 29, No. 64. See the NIHR Funding and Awards website for further award information.

Health Technology Assessment

ISSN 2046-4924 (Online)

Impact factor: 4

A list of Journals Library editors can be found on the NIHR Journals Library website

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This article

The research reported in this issue of the journal was funded by the HTA programme as award number NIHR129798. The contractual start date was in December 2020. The draft manuscript began editorial review in February 2024 and was accepted for publication in April 2025. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HTA editors and publisher have tried to ensure the accuracy of the authors' manuscript and would like to thank the reviewers for their constructive comments on the draft document. However, they do not accept liability for damages or losses arising from material published in this article. This article presents independent research funded by the National Institute for Health and Care Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, the HTA programme or the Department of Health and Social Care. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, the HTA programme or the Department of Health and Social Care.

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