

Rapid evidence review: Integrated models of drug treatment in primary care

April 2024



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Citation

This report should be cited as: Taylor C, Shivaji T, Linardi-Nicol J, Dickie E. Rapid evidence review: Integrated models of drug treatment in primary care. Edinburgh: Public Health Scotland; 2024.

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Key points

- Shared care describes a way of working together between primary care, specialist services and social care services where the patient journey crosses interfaces. At times the organisation with overall responsibility for drug treatment may be specialist services and at other times primary care will have overall responsibility. These models are based on the recognition that a limited specialist resource focuses on complex individuals.
- Integrated care describes a way of working between primary care, specialist services and social care where the patient journey remains with the primary healthcare provider at all times. These models build on primary care as expert medical generalists with a community-based multi-disciplinary team which can be adapted to the patient's needs over time.
- This literature review found limited outcomes data. It is therefore recommended that evaluation is needed to assess the effectiveness of different components of care.
- Coordinated multi-disciplinary care planning and regular multi-agency review meetings were widely described.
- The patient experience appeared similar across the models. Individuals were seen by a GP or key worker, with support provided by specialist and multi-agency partners.
- Individualised treatment, care plans and goals are agreed with the patient, with an emphasis on recovery and harm reduction.

Background

The Scottish Government has recognised drug-related deaths as a public health emergency. Scotland recorded 1,051 drug-related deaths in 2022 and people living in the most deprived areas of Scotland were almost 16 times more likely to die from drug use than in the least deprived areas.¹ Unaccounted by the national statistics is the predominance of poor health² and excess premature mortality associated with non-drug conditions such as heart disease, cancers, chronic lung conditions and liver disease. The pathways of co-morbidity are complex and people with substance use can have substantially higher rates of morbidity and mortality than the general population.³

There is good evidence that the health of individuals with opioid dependence is safeguarded while in substitution treatment.⁴ Strengthening access, choice and support for people to receive high-quality drug treatment services is a key part of the Scottish Government National Drugs Mission.⁵

Standards of care for people experiencing problems with their drug use were published in May 2021. The ten Medication Assisted Treatment (MAT) standards⁶ are evidence-based standards to enable the consistent delivery of safe, acceptable, accessible, high-quality drug treatment and care across Scotland.

MAT standard 7 (see text box below) focuses on choice of drug treatment in primary care and access to high-quality coordinated care. It offers the opportunity to improve a person's wider health and better manage existing co-morbidities in addition to provision of high-quality drug treatment services.

Medication Assisted Treatment (MAT) standards: access, choice, support (Scottish Government, 2021)

Standard 7: primary care

All people have the option of MAT shared with primary care.

People who choose to will be able to receive medication or support through primary care providers. These may include GPs and community pharmacy. Care provided would depend on the GP or community pharmacist as well as the specialist treatment service.

Rationale

The **Orange Guidelines** identify joint working across health and social care and between hospital, prison, primary care and community drug services as a key feature of effective treatment partnerships.* There is an ageing population of people who use drugs and many people have underlying conditions and so would benefit from MAT delivered in general practice, due to the possibility of wider health problems being met. MAT offered in primary care can help to address issues around access to drug treatment services in rural areas. Community pharmacists are well placed to deliver scheduled or opportunistic care because they can have very frequent contact with people collecting prescriptions or attending for other reasons.

* **Drug misuse and dependence: UK guidelines on clinical management. Department of Health. 2017, page 13..**

Criteria 7.1

Primary care and substance use service partners have the following in place:

- a. Practice models that support people on MAT to remain in primary care, including for support and relapse prevention.
- b. Shared care protocols between specialist services, GP and community pharmacies for people who are on MAT. Shared care may include prescribing where competent practitioners are in place.
- c. Clinical and governance structures that enable people working in primary care to fully support people who are on MAT and to ensure that treatment and prescribing are managed alongside care for physical, emotional and social needs.
- d. Contractual arrangements for primary care provision (GP and community pharmacy) reflect the requirements of MAT standards.
- e. Pathways that enable the transfer of appropriate elements of care between specialist services, local mental health services, GP and community pharmacy.
- f. Information governance to ensure that information can be safely transferred between specialist services, GP and community pharmacy, including child and adult protection procedures.
- g. Effective recording and review systems for recovery care planning for all people in treatment and care for problem drug use.
- h. Training on problem drug use and on awareness of local drug services, including non-statutory providers and peer support services for all staff who may encounter people with problem drug use in their work.
- i. A 'primary care facilitation team' or equivalent that is responsible for auditing, monitoring, reporting and reviewing practice in primary care settings and the interface with specialist care, and for support with workforce development.

The Medication Assisted Treatment (MAT) standards illustrate the need for a shift in the model of care delivered towards one that provides continuity of care. Integrated care is a term that has been used to describe approaches to overcoming fragmentation in care in order to achieve better health and wellbeing outcomes for people and particularly those with complex or long-term care needs.⁷ The concept of integrated care covers a broad range of approaches and perspectives.⁸ It is unlikely that there is a single model which can be applied to a setting such as Scotland.

There is a pressing need to better meet the complex needs of this population. The purpose of this evidence review was to describe what integrated care is and how it is delivered to inform local improvement work and further development of the criteria for the standard.

Aim

We set out to describe models of integration of specialist addiction or drug dependence services within a primary care setting.

Our objectives were as follows:

- Classify the most common models used for the joint care of people who use drugs between primary and specialist drug treatment services.
- Describe the key structural and procedural components seen in these models.
- Examine the impact of this way of working on patient, staff and population health outcomes.

1. Methods

1.1. Search strategy

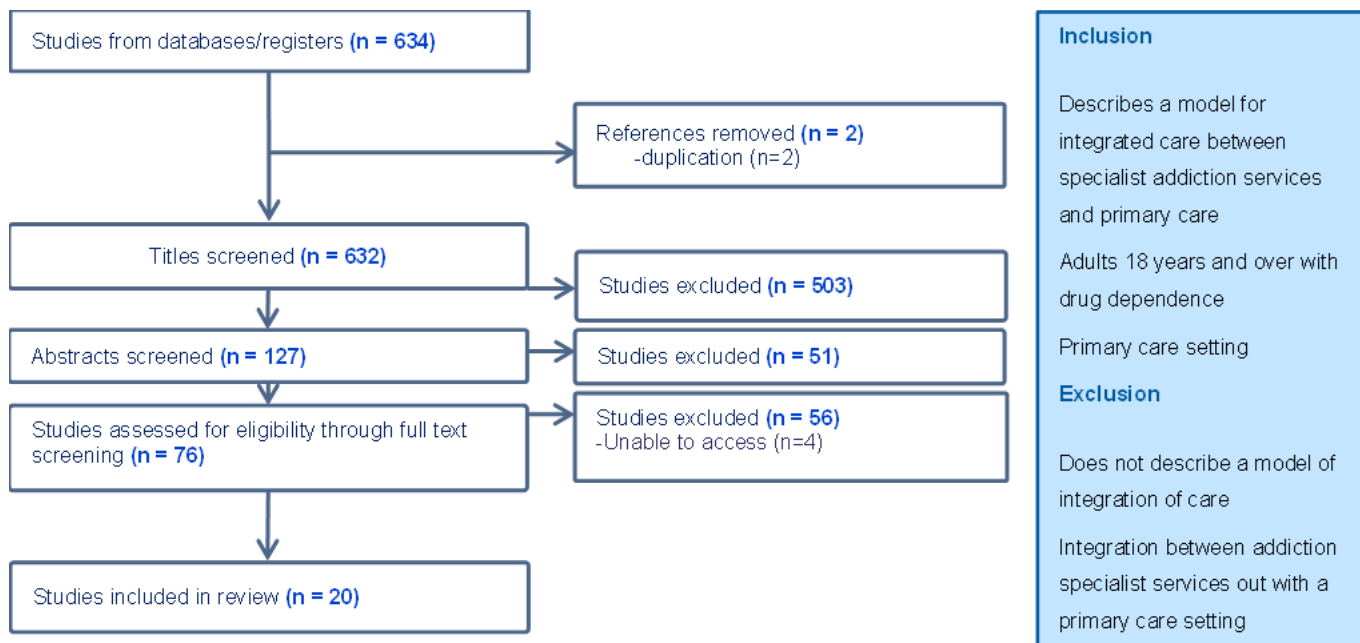
A literature search was conducted using four databases (MEDLINE, Scopus, CINAHL, Google Scholar) for both published and grey literature, issued between 1 January 2012 and 13 December 2022. The search was limited to the English language and to literature published from Europe, North America, Australia and New Zealand. This was due to time restrictions. The search included adults, over 18 years old, with drug dependence or addiction, where secondary services were integrated into a primary care setting. This was defined to include general practitioners, pharmacists and technicians, dental teams, optometrists and community nurses.

1.2. Selection process

Screening was conducted in three stages: title, abstract and full text. At each stage two reviewers independently screened the studies against the inclusion and exclusion criteria. At the title and abstract screening stage, any conflicts were resolved by a third reviewer. At full text screening there were 22 conflicts: this was resolved by further discussion by the two reviewers and then re-screening of 11 titles each.

A total of 632 titles were identified after removal of duplications. After screening, 20 papers were included in the review (17 from peer-reviewed literature and three from grey literature). A summary of the included studies is in Appendix 2.

Figure 1: Screening process



1.2.1. Data extraction

A total of 20 studies have been included for data extraction.

Three reviewers used a standardised data extraction framework (available on request). The following data was extracted for all studies: setting, location, type of study design, model description, objectives of integration, participating organisations, staffing roles and responsibilities, processes for induction and maintenance of treatment, referral and exclusion criteria, provision of aftercare, primary and secondary outcomes, perspectives of patients and perspectives of staff. Quality assessment was done using critical appraisal tools⁹ when a study included measured outcome(s). Key themes were identified and are presented below.

2. Findings

Summary characteristics from two models of care were identified from the literature: shared care and integrated care. Papers were largely descriptive, and findings are presented below.

2.1. Models of care

A summary of characteristics and components of models of care in the literature is provided below. Where possible these are outlined in two sections:

1. Structure (setting, workforce, employers).
2. Process (identification/referral criteria, induction, maintenance, wider health and recovery).

2.1.1. Shared care

This model was defined in nine papers. This literature was largely descriptive, with limited outcomes data reported. The papers included two UK service specifications,^{10,11} one small US observational study,¹² US case studies,¹³ a single UK case study,¹⁴ an Australian feasibility study¹⁵ as well as five models from within a scoping review,¹⁶ one randomised control trial (interim three-month findings)¹⁷ and four studies within a good-quality systematic review.¹⁸

Definition

Shared care describes a way of working together between primary care, specialist services and social care services where the patient journey crosses interfaces. At times the organisation with overall responsibility for drug treatment may be specialist services and at other times primary care will have overall responsibility. Shared care models described in the literature focus on the prescribing of opioid substitution therapy (OST) and provide a framework for decision making about prescribing between specialist and primary care settings. An active link is kept between specialities using multi-disciplinary teams or accelerated referrals. Individual care planning and support is coordinated to facilitate ease of referral, as well as transitions between services and settings in response to patient needs.

Objectives

Studies described a range of objectives of shared care including:^{10,11,12,14,15,16,18}

- increasing capacity in primary care – mainly to improve access to pharmacological interventions
- improving partnership working between primary care and specialist services, in wider primary care networks, integration with secondary care, working more effectively with police, probation and housing
- to support treatment outcomes and recovery, promoting engagement in care within community settings and to destigmatise care within the health system for this population
- risk management in ensuring prescription reviews, and reducing risk of diversion
- promoting a standard referral, assessment and treatment pathway and addressing wider physical and psychosocial health of individuals.

Reported advantages of shared care models included holistic approach to service users, with specialist support and ongoing psychosocial care while ensuring preventative care and wider health needs are met; improved accessibility to OST in primary care settings; flexibility in service delivery to meet local context; improved relationship between primary and secondary services, links to wider partnerships to meet the needs of the individual, for example housing, wraparound services and onsite vaccination clinics.^{13,14,15,16}

Broader benefits identified included increased funding for cross-organisational roles such as nurse practitioner for homeless settings, GP registrar training placement,¹⁴ as well as supporting GPs new to prescribing, increasing specialist service capacity for treatment to new patients in addition to dedicated GP capacity to provide opioid dependent treatment.¹⁵ One model in the scoping review reported that patients found co-located care (MAT, HIV and primary care) to be person-centred.¹⁶

Funding models described were based on provider reimbursement, for example quarterly billable services (for example per visit, or per patient).¹⁶ The two service specifications additionally provided a retainer fee or annual payment for GP practices.^{10,11}

Structure

Shared care models described in the literature were either in urban settings (five papers) or in mixed, urban and rural settings (four papers). No specific/dedicated rural models were identified. A number of models described a tiered approach to care, with initial assessment and induction onto treatment led by specialist services followed by transition to primary care for ongoing management once stable.^{16,18}

The workforce was varied and included GPs, key workers, pharmacists, recovery workers, health coaches, experienced specialist addiction nurses, counsellors, with support from specialist teams (for example psychiatrists, psychologists) and partner services (for example working with social work, police, probation, secondary care/hospitals, housing and the third sector).^{10,11,12,13,14,15,16,18} The two UK service specifications described the key worker or recovery worker as responsible for coordination of care.^{10,11}

A range of dedicated roles were also described across the models. One UK model described a group partnership-based approach, led by a third sector agency, who subcontract GPs for opioid substitution therapy (OST). This case study in England (Gateshead) employed a primary care lead to ensure liaison between the group partnership and primary care networks. This case study also defined a service manager role with responsibility for contract management, performance and reporting including on wider health needs data (such as blood-borne viruses (BBV) and drug-related deaths (DRDs)).¹⁴ A small observational study in the US described a pharmacist care manager, with responsibility for medication induction and all follow-up visits.¹²

Details of workforce training and skills were only provided in a few papers.^{10,11,16,17} Both UK service specifications described the requirements for GPs to complete RCGP course part 1. In one, key skills defined included treatment options, common complications, harm reduction and alcohol AUDIT screening. Clinical work is then fulfilled in collaboration with a key worker in specialist services to ask for advice regarding medication, treating associated consequences of substance use, assessment and referral to other services when required, psychosocial interventions, screening for BBV and routine tests (bloods and ECG) and vaccinations.¹⁰ In the other, the designated clinicians were also expected to be compliant with the RCGP/RCPsych (2012) Delivering quality care: roles and competencies of doctors.¹¹ National training and clinical mentoring were a feature of the practice-based models

described in the scoping review, and one of the system-based models reported that training and community education was emphasised to reduce stigma and improve uptake by clinicians.¹⁶ In the UK case study, training is provided in primary care during scheduled sessions (and includes updates on guidance).¹⁴ The randomised control trial¹⁷ (providing recovery management check-ups to improve retention and engagement following referral from primary care) offered extensive training to linkage managers to achieve and maintain a specific level of competency with motivational interviewing.

Process

Referral criteria were not always clearly defined across studies, but opioid dependence was a key patient characteristic.^{10,11,12,14,15,16,18} A UK service specification (Surrey County Council) defined key workers in specialist services as responsible for assessing patients for suitability of shared care with GP. Criteria in this paper were stable on OST, not using prescribed or illicit drugs in a problematic way, with no significant mental health concerns. Pregnancy would result in prescribing responsibility returning to specialist services.¹⁰ Another UK service specification (North Yorkshire) defined an assessment and referral process led and jointly delivered by a third sector recovery service.¹¹ A collaborative programme in Australia described experienced nurses leading assessments, and almost all the specialist service opioid dependent referrals were stable on treatment. This group either were ready to transfer to general practice or simply accessed GP care for their non-drug-related health needs.¹⁵ One paper described screening and brief intervention or referral to treatment from primary care, with recovery management check-ups to improve retention.¹⁷ One model in the scoping review¹⁶ described identification of opioid dependence and initiation onto treatment in the emergency department and connection to primary care for ongoing management at discharge.

Practitioner responsibilities varied. Specific GP roles described included provision of prescription medication, BBV screening and vaccination, support to work towards treatment and recovery goals,^{10,11,14} as well as contraception and other health checks (such as stroke, kidney disease, heart disease, type 2 diabetes or dementia).^{11,18} The key worker (in specialist services¹⁰) and recovery worker (in third sector¹¹) or nurse liaison¹⁸ coordination roles included expertise and support in addiction care to the GP, for example aiding prescribing reviews and decisions, urine/saliva drug testing, psychosocial interventions, referrals, regular updates on patients' progress, care plan reviews with the GP and completing a monthly

patient list. Pharmacist roles were described as involved in dispensing and supervised consumption, as well as monitoring of dosing. In some cases the pharmacist role included induction onto buprenorphine.^{10,12,18} A shared care programme-specific nursing role in one study described responsibilities of comprehensive assessment, case management, coordinated care planning, and assistance with pharmacotherapies prescribed by GPs, as well as dedicated support to transfer patients' care to general practice for drug treatment or for general health needs.¹⁵ This collaborative programme operated a mixed delivery model, whereby nearly all GP-based patient referrals were successfully managed wholly within general practice* with specialist nursing support. Of the specialist service referrals of people with opioid dependence, half transferred completely, and half remained with specialist services with their general health needs met by GPs.

Where details of the medication offered were included, the most frequent across the papers was buprenorphine^{11,12,16,18} with methadone also offered in two papers.^{11,18}

A common feature was the need to transfer the care of patients between primary and secondary care. The patient journey had similarities across the models: commonly the person is seen by a GP, who is supported by specialist and multi-agency partners.^{10,11,12,14,16} Individualised treatment, care plans and goals are agreed, with an emphasis on recovery and harm reduction. Commonly described were regular (weekly or monthly) appointments with their GP to discuss physical health and drug treatment, with less frequent shared multi-disciplinary meetings (for example with GP, nurse/key worker, pharmacist) every three months focused on review and referral to other services.

Coordinated multi-disciplinary care planning and regular multi-agency review meetings were widely described.^{10,11,12,13,14,15,16,18} A collaborative approach between keyworker, GP and the patient was described with individual treatment goals agreed, together with clear review timeframes (monthly or quarterly). Shared documentation on both case management data systems (for example Change Grow Live's (CGL) CRiiS) and GP digital systems (for example EMIS) was reported to facilitate accurate and efficient communication.^{12,14,18} Two studies

* To note this paper was a feasibility study for specialist alcohol and other drug collaborative shared care, and of the GP-based referrals 63% were for alcohol-related issues.

described establishing a register of patients developed to manage clinical care, patient reviews and track outcomes.^{11,12} In one paper, each service user has a Recovery Coordinator attached to their GP surgery. Recovery support interventions and quasi-rehab were delivered by a peer-led partner agency.¹⁴ One research study described a linkage manager as part of personalised recovery management check-ups to improve retention in treatment.¹⁷

The types of psychological therapies provided varied, and limited detail was reported. These included motivational interviewing provided by health coaches or linkage managers, access to counselling within primary care or in specialist services.^{12,15,16,17}

Complex mental health support or dual diagnosis care were only described in one paper.¹³ Mental health services were provided onsite by primary care, and this was commonly received from the behavioural health team prior to referral to specialist services for drug treatment support. Comprehensive initial assessments were conducted by a social worker.

Relapse prevention and intensive support

Clear referral pathways to hand care over to specialist teams and vice versa were a particular feature of shared care models to support and respond to changing patient needs appropriately.^{10,14,17,18} Close working relationship with keyworkers to assist with expertise in addiction care or support from a social worker for routine care were described in two studies.^{10,18} One model supported priority access for GP referrals into the specialist service.¹⁵ Linkage managers in one research study provided intensive follow-up for two weeks on initiation to treatment.¹⁷ This study also described personalised motivational interviewing, facilitating access to additional care and re-entry to treatment to support engagement and retention. In a further study, people at higher risk (for example people who continued to use illicit opioids, missed appointments or failed to give urine samples for testing) received closer follow-up and weekly calls were provided by health coaches trained in motivational interviewing.¹² Access to 'after hours' support for patients was a component of care in two studies in the systematic review.¹⁸

Aftercare provision and support were not defined.

Outcomes

Outcome measures and reporting was limited, therefore it is not possible to fully assess the effectiveness of part or all of the components of shared care models. Retention in treatment was the most common indicator.^{12,13,15,16,17,18} * Self-reported reduced drug use and abstinence^{15,16} together with toxicology was also reported in three studies.^{12,16,17} †

Patient experience and satisfaction measures were not specifically reported. One shared care model reported that providers felt the benefits from coordination of care between primary care and specialist services.¹⁸

2.1.2. Integrated care

This model was described in 14 papers. This literature was largely descriptive, with limited outcomes data reported. Papers included one randomised controlled trial from the USA,¹⁹ nine observational studies from the USA^{13,20,21,22,23,24,25,26,27} of which two focused on provider perspectives,^{13,22} one observational study from Canada²⁸ as well as five models from within a scoping review,¹⁶ and 31 studies within a good-quality systematic review.¹⁸

Definition

Integrated care describes a way of working between primary care, specialist services and social care where the patient journey remains with the primary healthcare provider at all times.

Structure

Integrated care existed on a continuum from care coordination,^{13,16,18,23} co-located services with separate workflows^{22,28,28} to fully integrated and coordinated treatment plans using

* To note patient characteristics in this study included people with alcohol dependence.

† Access and retention in treatment in this study had a positive association for residential or intensive treatment, no difference emerged for outpatient or medication assisted treatment.

shared systems^{13,18,20,21,22,24,25,29} Fully integrated services could be setting specific, for example through the expansion of service provision in a single clinic^{18,24} or part of a strategic regional approach to care provision.²⁶

Primary care was defined as physicians and nurses working in a general practice or office-based setting who were responsible for providing general health services to a geographically defined population. Commonly described components of integrated care included pharmacotherapy, psychosocial care, harm reduction, recovery support, management of health and social issues.

Co-location – two or more professionals working in a shared setting – was a common but not universal structural feature of integrated service provision. It was observed in co-located models with shared workflows and in fully integrated models. It was also described in some care coordination where one member of a multi-disciplinary team is embedded in a setting to act as a coordinator for care across a number of sites.¹³

The most commonly described setting for co-location was the primary care health centre.^{13,16,18,20,21,22,24,28,28,29} There were also examples of reverse co-location, where primary care professionals were embedded in specialist drug treatment services.²² Co-location was described both in rural areas^{21,28} and in areas of high drug-harm prevalence.^{18,22} Reasons for developing co-located models included promoting access and meeting wider health needs among those already accessing the service for other reasons.^{16,22,26} A consideration for rural areas was limited access to specialist drug treatment services, and co-location was a means of increasing access to pharmacological and/or psychological therapies.^{21,28} Another perceived advantage of co-location was that it could facilitate informal and formal communication between different professionals involved, and in turn improve the timeliness of access to the different supports on offer^{13,26} and improve the knowledge and confidence of professionals to care for people with problematic drug use.¹³ Some models developed as natural extensions of existing services for depression, anxiety or other chronic health conditions.^{16,20,22,26} These settings already had a workforce providing psychological interventions or population screening whose work could be further developed to meet the specific needs of people with problem drug use.

Pharmacotherapy for people with problem drug use

Sites within integrated care models provided buprenorphine,^{16,18,21,25,28} methadone^{18,22} or extended-release naltrexone and buprenorphine.^{16,23} The prescribing workforce included primary care physicians and others licensed or qualified to prescribe (such as addiction specialists, nursing staff etc). One rural site described the lack of access to other primary care facilities as informing its approach to separating OST prescribing from the primary care physician, reasoning that a breakdown in prescriber relationship could act as a barrier to accessing wider primary care services and rurality meant that there were limited options for patients.²¹ Other sites focused on increasing the number and capacity of primary care physicians to prescribe opioid substitution therapy.²⁶ There was support from a wider workforce who were not prescribers, including nurses, counsellors, recovery coaches and physician's associates. They were tasked with routine assessments, client follow-up, urine testing and other support work, which helped to maximise capacity of the prescriber.^{16,18,22,23} Integrated care models involving pharmacy built the relationship between the pharmacist and person with problem drug use, where medication dispensing contacts were used to conduct assessments which could then be fed back to the prescriber and care adapted accordingly.¹⁸

Psychosocial care for people with problem drug use

The development of services to provide psychological therapies was widely described.^{13,18,20,21,22,23,24,25,26,28,28,29} All were provided alongside pharmacological components – emphasising prevention of relapse, crisis response and support.^{13,29} Some models emphasised the value of psychological therapies for the care of patients for whom no pharmacological options were available, for example people whose problematic substance use involved stimulants.²⁰ The types of evidence-based psychological therapies used in integrated models included structured relapse prevention,^{21,28} motivational interviewing,^{21,23,24} contingency management^{21,29} and cognitive behaviour therapy (CBT).^{21,29} The type of workforce providing the interventions came from varied backgrounds and included social workers,^{18,29} nurses,¹⁸ physicians,¹⁶ trained counsellors.^{18,20,21} Models providing CBT and caring for those with mental health co-morbidities had psychologists and psychiatrists.²¹

Some care coordination models trained care coordinators in motivational interviewing techniques to improve engagement and create 'warm hand-offs' between different care professionals (process detailed below). This task was performed by individuals including

registered nurses¹⁸ and trained peer workers.²³ In most cases, psychological therapies were provided in the co-located setting. In one example from Ireland, prescribing of OST was led in primary care and the patient was also accessing psychological therapies in secondary care at the same time provided by the specialist psychiatry team.¹⁸

Supervision for the provision of psychological therapies in non-secondary care settings was poorly described. Some models had external arrangements with psychiatrists.²⁸

The types of psychological therapies provided varied in their delivery and duration, for example one-to-one interventions,²⁰ in groups^{25,28} or remotely as part of outreach.²¹ Some providers described fixed structured programmes over 5–8 weeks,²⁰ but in general the entry and exit criteria were poorly described. The opportunity for psychological therapies to support the care of older people who use drugs and who may have other co-morbid health conditions being managed in primary care was recognised²⁴ but no information to describe the type of interventions which would be best placed in this setting was provided.

Although psychological therapy components were widely described, limited descriptions of training methods, implementation strategies and assessments of fidelity constrain any assessment of wider generalisability.

Harm reduction

Descriptions of harm reduction interventions delivered through integrated care models were limited. Provision and training on naloxone was the most frequently described harm reduction intervention.^{26,28} Evidence-based psychological therapies to support crisis planning²⁹ were also described. There was limited information about the type of workforce which supported the delivery of harm reduction interventions in integrated primary care models.

Recovery-oriented care

A small number of integrated care models described how the community-based nature of the care model offered the opportunity to strengthen community connections and support recovery.^{25,26} The Maine Access Foundations Addiction Care Programme used a community engagement strategy to identify barriers and facilitators to engaging with care which then

informed the model design and outcomes measured.²⁶ Other models emphasised peer-led recovery, either by individual coaching²³ or as peer-led group work.^{24,28}

Management of non-substance-use-related health conditions and social issues

The management of health issues not directly associated with substance use or support for the wider determinants of health was a model component described in 12 out of 14 papers and 24 studies.

Integration models offered the opportunity to identify and manage physical and mental health problems. In some models, this was done by the primary care physician or a nurse practitioner and was closely tied to induction and maintenance on OST. For example, physical and mental health assessments would be conducted as part of the appointment for treatment induction.¹⁸ One model combined care for substance use with preventative and chronic disease care into the same appointment by the primary care physician, in this model physician capacity was maximised by the support of a medical assistant who performed clinical measurements and undertook screening.²⁸ A similar approach was used where registered nurses provided additional capacity to physicians in the identification and management of chronic disease.²⁴ In models where there was reverse co-location and the responsibilities of the primary care physician did not include prescribing of OST, their roles and tasks to contribute to chronic disease management was more clearly articulated.²² Screening and management of BBV tended to be done by physicians or registered nurses.^{16,18} Pain and pain management were also frequently described as responsibilities of the primary care physician.^{18,25,26} There was limited description of screening tools for other chronic physical health conditions, such as heart disease, diabetes, chronic obstructive pulmonary disease (COPD) etc. Behavioural health specialists were identified as a workforce resource in some primary care settings that could proactively identify chronic health conditions and lifestyle issues such as smoking, nutrition and so on,²⁹ although limited detail was available on approaches used. It was unclear which conditions were being actively identified and which would follow the existing routine primary care pathways. A number of areas promoted self-management techniques of increasing self-efficacy to manage both substance use and other chronic health conditions.^{25,29}

Wider social determinants and mental health supports tended to be provided outwith the core integrated setting. Partnerships with local community providers and pathways to access

support had to be negotiated as part of the design.²⁶ Transport, housing, welfare and domestic violence support were described.^{22,28} The task of navigating was performed by care coordinators who could be nurses,¹⁸ social workers²⁶ or peers.²⁸ There was limited description of how needs were identified systematically.

The option and subsequent design of integrated services were individualised to the context of each setting. The availability and conditions attached to funding was a key consideration in the type of integrated model developed: single-setting primary care-based models could be developed where primary care had delegated authority over their budget or access to additional funds. Larger system-wide integrated models required a supportive external funding environment,¹⁶ leadership and facilitatory support.²⁶ There was little information about the long-term sustainability of different funding strategies and workforce availability which were key consideration factors and could limit the extent of integration or ability to meet needs in communities.²²

Process

A commonly cited objective in the development of integrated models was promoting low barrier access to care for people with problem drug use. The most commonly described method for early identification of people was screening of a practice or target population.^{13,22} Screening was delivered by additional, non-prescribing staff based in the practice which assisted in overcoming the barrier of limited time in the primary care consultation for raising the issue of problematic drug use.²² When done systematically using standardised tools it was reported that people previously unknown to treatment services could be identified,²² however there were challenges in doing this at scale and systematically.¹³ One area screened first for mental health conditions, then for those screening positive assessed for problematic drug use. This approach was chosen because of the availability of mental health practitioners in the practice setting. A limitation of the approach was that practitioners more comfortable with mental health presentations focused on these and did not address the substance use issues.¹³ In one setting screening was conducted electronically by an assessment of health records, including prescribing history as well as a patient administered questionnaire, which had been developed in the context of the contribution of prescribing for chronic pain to problematic drug use.²⁸ Most studies used existing pathways of self or practitioner referral. A reported barrier to access and uptake was low levels of awareness of

the integrated model among the wider primary care team even when they were based in the same building.²² Exclusion criteria included non-consent to the programme on offer and pain management as a primary concern. Dual diagnosis with a mental health condition was not commonly reported as an exclusion criteria; one of the reasons may be the development of service extensions for services already provided for people with mental health conditions in primary care.²⁸

In reverse co-location examples where primary care was hosted within specialist services, non-medical support staff routinely screened patients for common chronic conditions.²²

The term 'warm hand-off' was widely used as a process to promote engagement and build trust between a person accessing care and the wider team involved in the integrated care model.^{22,24,29} Warm hand-offs in integrated models were characterised by physically taking the person seeking care to another location to meet another care provider,²² using motivational interviewing communication techniques.²⁹ They are also part of the explicit responsibility of the care coordinator.^{18,29}

The process for induction of medications such as methadone and buprenorphine varied between the different models. Some models explored home-based inductions and others provided inductions in the primary care centre or other location.¹⁸ The time period for inductions varied. To assist with scaling up capacity and to ensure clarity about roles and responsibilities when working in multi-agency teams, areas described developing local or following national protocols for the induction of treatment such as buprenorphine in primary care settings²¹ and reduction of benzodiazepines in primary care settings.¹⁸ As the capacity and time of the prescriber were often limited, the protocols played an important role in identifying how follow-up would be done, by whom and at what frequency. The non-prescribing workforce involved in induction included social workers, nurse coordinators, behavioural health practitioners, pharmacists and peers.^{18,21,28,29} In most integrated models, the lead prescriber did not change over the course of treatment. For some models this led to a pre-planned and fixed reduction in the intensity of follow-up appointments,¹⁸ whereas others promoted greater flexibility and professional autonomy with decisions being guided by patient outcomes.^{21,25,29} Prior to and after the COVID-19 pandemic, some of the follow-up contact with patients was made via telephone,¹⁸ although sites describe that while this mode of contact offers opportunities for support, it may not be suitable for all modes of care, particularly the delivery of psychological or group therapies.²⁴

Patient registers and electronic health records were used to track the course of individual care and ensure appropriate multi-agency support was being provided.²⁰ Using electronic health records provided an opportunity to introduce flags to records to initiate types of care,²⁸ although it is notable that some areas had more success from professionals speaking to each other directly, and therefore valued the integrated co-located model, compared to making electronic referrals.²²

In integrated care models, people who experienced relapse or crisis were dealt with by the same team that provided their routine care. Integrated models described a number of strategies that had been designed to deal with these situations. The responsibilities and expectations of provider and patient were discussed at the time of consent to participate in the programme,^{21,26} which allowed discussion for how non-adherence would be managed. Protocols and guidance for managing complexity/non-adherence were developed and training provided.²⁶ Some sites organised regular fortnightly, virtual case conferences with external specialists to develop case management plans.²³ The flexibility of the non-medical team members, including peer recovery coaches, in integrated models was also drawn on to provide increased intensity of contact visits,²¹ some drawing on motivational interviewing techniques and providing outreach into communities.^{13,29} The approach to ensuring patient safety in the context of non-adherence and ongoing substance use was less clearly described. One area described developing professional autonomy and using a range of indicators of patient outcomes to assess progress.²¹ Few models described approaches to rebuilding trust to promote re-engagement following disengagement from care.

One of the challenges of the integrated care model is responding to a situation where demand exceeds supply. This may take the form of high patient to staff ratios, or specialist needs which are not met by the skills of the team available. Strategies to manage this included a 'panel approach'²⁰ where care was shared across a team, maximising the capacity of the most limited skill sets, such as prescribing. One example made use of local community-based services for mental health to provide some additional capacity. Coordination and oversight were essential to ensure that no one's care was overlooked and this was managed by assigning that role to an identified individual.¹³ Another strategy was the use of existing services and staff within the settings to support the management and care of chronic pain.^{20,21,26}

Outcomes

The studies were a mixture of case descriptions with qualitative evaluations, quality improvement (PDSA cycles – Plan, Do, Study, Act) techniques and controlled trials. Outcomes varied and the quality of the evaluation limits the assessment of the effectiveness of part or all of the components of integrated care models.

Outcomes were broadly divided into provider and patient outcomes. Patient outcomes included qualitative and objective quantitative measures. Qualitative outcomes included experience of care^{25,28} and the support provided, including stigma.²⁸

Objective quantitative outcome indicators included urine toxicology as an assessment of abstinence.^{16,28}

Initiation of medication prescribing^{18,26,28} and retention in treatment services were the most commonly used objective quantitative indicators. The initiation of medication prescribing was used as a proxy for programme reach. One study described the variation in retention standard and recommended 60% at three months to be an appropriate cut-off.¹⁸

The opportunity to assess engagement with wider primary care was assessed using the Centre for Disease Control quality health indicators.¹⁸ Services with a particular focus on HIV and hepatitis C reported indicators related to testing and treatment starts.^{16,18}

One approach, which was based on quality improvement methodology, identified indicators based on patient reported barriers to accessing and engaging with care.²⁶

Provider level outcomes were both quantitative and qualitative. Qualitative indicators included the confidence of practitioners to participate in care, attitudes and stigma among the wider care team and barriers to developing services.^{16,18} One study recommended the inclusion of professional burnout as a quality indicator.²⁹ Objective quantitative indicators included the number of prescribers.^{18,26,28}

There was limited description of financial indicators or other indicators of longer-term sustainability, although there was wider recognition that these were important considerations.^{26,29}

3. Implications

We identified two models with shared components or ways of working between primary care and specialist drug treatment services. The literature was largely descriptive in nature, and a number of variations in the components of each model were identified across the literature. This variation, the outcomes studied and limited ability to examine outcome measures limit generalisability for Scotland.

The choice of approach appeared to be dependent on the strategic objectives of the programme. There are a number of strategic planning approaches where choices about programme priorities are made following a systematic process and based on a structured approach to information. In the literature reviewed, strategic planning occurred at national, regional and local levels.

Some local approaches included a consideration of wider contextual factors including geographical setting, availability of staff and specialist treatment facilities, local health and care assets (such as mental health provision, chronic pain services) and local recovery communities which influenced model and component choice. Few studies actively included people with lived experience and families in the design or evaluation. Where opportunities for this were described, it was in quality improvement designs and structures to facilitate continuous improvement. Mixed-method evaluative approaches permitted engagement with recovery communities. As most evaluative approaches were led by academic partner institutions it is difficult to generalise findings and approaches that could translate to a clinical governance setting where additional research resource is limited.

The most commonly studied objective was to increase access. Interventions to improve access can be classified in three ways:³⁰ increasing availability and supply of a service; promoting use of a service; and interventions focused on promoting equity of outcomes.

Increasing the availability and supply of targeted services to support people who use drugs was the most widely studied dimension of access. Both shared care and integrated care models described features which aimed to increase availability of prescribing services and psychological services.

Features aiming to increase availability of OST prescribing included provision of additional specialist staff resource, training of prescribers (medical and non-medical), delegation of some clinical responsibilities to non-prescribing staff and the creation of professional networks for professional supervision or complex case management.

Outcome measures included trends in the number of trained prescribers and number of people receiving medication assisted treatment. Due to the observational design, contextual specificities and frequent lack of comparators, it is not possible to conclusively determine which features are associated with an increase in availability and supply. The implication for Scotland is that this should be examined if it is a strategic objective. Suitable quantitative indicators include the number of trained/available prescribers and the number of people in the service catchment area who are prescribed OST. Qualitative outcome indicators include assessment of the confidence of practitioners to manage substance use. Intelligence useful to improvement included views of practitioners, assessments of stigma, views of people receiving care on how they wanted to engage with different professionals, and how care could be made to feel more continuous or joined up.

The legal framework governing the prescription of OST was a key factor in determining the type of OST available and the type of prescriber available. In the Scottish context these considerations would be necessary in order to determine availability of injectable buprenorphine.

The lack of trained general practitioner prescribers has been a limiting factor for both types of models where there is a reliance on existing GP prescribers and limited training opportunities. In these situations, financial reimbursement models that allow for task delegation and care coordinators may be useful to increase capacity. Innovative commissioning models were described, however implications for the Scottish context are unclear, in particular how this would work in situations of low number of providers, how to achieve stability over a longer term and minimising financial and clinical risk to parties. Advantages of these approaches included direct access to information and overcoming information sharing barriers, particularly for the third sector.

Features associated with an increase in availability and supply of primary care services are reverse co-located integrated models and integrated models which increased capacity of the primary care multi-disciplinary team.

Measures to increase access to psychological therapies included recruitment and training of providers. However, the training requirements are unclear, and the supervision is unclear, meaning that quality and provision was variable. This would benefit from a closer link between patient needs and evidence-based therapies.

Methods for promoting engagement with assessment and treatment varied in both the strategies used and the intensity with which they were deployed. Models that have a coordination component could use this approach, for example using motivational interventions or active case management. Training that ensured fidelity of practice was variable and required additional resource. Peers and lived experience experts were among the individuals involved in promoting engagement, but little was described about remuneration or wider support and training approaches.

A key question that remains unanswered is for whom additional support to promote engagement is effective. It may be appropriate for those who are stable and whose care is led by specialist services as a way to improve engagement with primary care. In these cases, wider physical or mental health outcomes would need to be examined. Alternatively, it may be useful for people in primary care settings as a step-up feature to manage complexity/relapse, particularly if deployed in the form of assertive outreach. This type of intervention could lend itself to a randomised control trial to address questions of effectiveness and cost effectiveness, given the additional resource implications. These types of interventions may be useful if the strategic objective relates to reducing wider inequalities in health outcomes.

Use of available services was studied.¹⁸ The short timeframe of studies makes it difficult to assess retention in treatment, and an implication for Scotland is the need to assess retention in treatment at six months. Studies that offered a variety of treatment modalities reported differential results in engagement with statistically significant results for inpatient care and psychological therapies and non-significant differences for MAT. It is unclear if these differences reflect suboptimal power, patient preference or differential loss to follow-up due to sanctions (e.g. withholding OST due to positive urine toxicology).

4. Limitations

The scope of the literature included in this review focused on drug treatment in primary care where opioid substitution therapy (OST) is provided; therefore opioid dependence was a central patient characteristic and limits the applicability of the findings for people with other drug problems. The literature was largely descriptive in nature and provided limited detail on evaluation approaches and outcomes achieved by the models of care. This limits the understanding of effectiveness of any of the components of care defined in this review. The literature also demonstrates very little in terms of patient input into the design of primary care drug treatment, with most papers written from a service provider perspective. This limits the findings to structure and service-specific context rather than the patient experience.

Appendix 1: Search strategy

Date of search

13 December 2022

Bibliographic databases used

MEDLINE, CINAHL, Scopus, [Google Scholar]

Rationale for database selection

Good coverage of general healthcare topics

Database search strategies/limits applied

Ovid MEDLINE(R) ALL <1946 to December 13, 2022>

1. "Delivery of Health Care, Integrated"/ 14,112
2. Intersectoral Collaboration/ 2,567
3. (integrat* or co-ordinat* or coordinat* or collaborat* or share* or join* or partner* or together* or link*).ti,kf. 608,234
4. 1 or 2 or 3 616,714
5. Secondary Care/ 915
6. Tertiary Healthcare/ 1,706
7. Outpatient Clinics, Hospital/ 15,840
8. exp Hospitals/ 310,932
9. (specialist or secondary or tertiary).ti,kf. 180,696
- 10.(hospital or hospital or clinic or clinics or outpatient* or out-patient*).ti,kf. 378,231
11. 5 or 6 or 7 or 8 or 9 or 10 735,171

12. exp *Primary Health Care/ 108,277
13. (primary adj1 (care or healthcare or health care)).ti,kf. 64,201
14. (general practice* or general practitioner* or GP* or (family adj1 (doctor* or physician* or medicine* or practice* or practitioner*)) or pharmacy* or pharmacies* or pharmacist* or (nurs* adj2 (district* or communit* or practice* or practitioner*)) or dentist* or dental or optician* or optometr* or screen*).ti,kf. 602,268
15. 12 or 13 or 14 729,276
16. Substance-Related Disorders/th [Therapy] 12,838
17. exp *Substance-Related Disorders/ and (exp Rehabilitation/ or exp Therapeutics/) 48,630
18. ((drug* or substance*) adj3 (use* or misus* or mis-us* or abus* or dependen* or addict* or disorder*)).ti,kf. 82,093
19. ((drug* or substance*) adj4 (treat* or detox* or rehab* or therap* or support* or recover* or service* or intervention* or medication* or MAT)).ti,kf. 71,234
20. 16 or 17 or 18 or 19 185,155
21. 4 or 11 1,333,544
22. 15 and 20 6,837
23. 21 and 22 1,090
24. limit 23 to (english language and yr="2012 -Current") 651

Limits: 2012 onwards, English language

Strategy adapted appropriately for other databases.

Results have undergone deduplication in the reference management software and some title-level screening, so final totals may not reflect the number of references stated in the above search strategy.

Grey literature sources used

Google searches

Google advanced search (search terms used)

- integrated services drug misuse treatment
- primary care drug misuse treatment
- integrated primary care drug misuse treatment

First 10 pages screened.

Appendix 2: Summary of included studies by model type

Model type: Shared care

Model description: Distinct separate teams but work closely together, initiation often in secondary care setting before transfer to community care for maintenance.

Related terms: Collaborative, stepped care.

Title	Authors	Reason	Setting
Primary care-based drug treatment: case studies	Martin A & Beat S (2021)	Transfer of patients between teams depending on needs	UK
Primary care-based models for the treatment of opioid use disorder: what actually works? A systematic review*	Lagisetty P et al (2017)	Multiple models included. Induction in specialist setting and then transferred to primary care team.	USA
Public health agreement for the shared care for patients with a drug misuse problem in primary care	Surrey County Council (2021)	Stepped care approach	UK
Implementation of a collaborative care management program with buprenorphine in primary care: a comparison between opioid-dependent patients and patients with chronic pain using opioids nonmedically	Suzuki J et al (2014)	Stepped care approach	USA
Feasibility and outcomes of a general practice and specialist alcohol and other drug collaborative care program in Sydney, Australia	Wilson HHK et al (2022)	Stepped care approach	Australia

Title	Authors	Reason	Setting
Managing care for patients with substance abuse disorders at community health centers*	Gurewich D et al (2014)	Off-site referrals	USA
Primary care-based models for the treatment of opioid use disorder: a scoping review*	Korthius P et al (2017)	Hub and spoke model; project extension for community healthcare outcomes; collaborative opioid prescribing model; emergency department initiation of office-based opioid treatment; inpatient initiation of medication assisted treatment	USA
General practice based shared care drug misuse treatment and recovery service specification	North Yorkshire City Council (2106)	Referral criteria states 'North Yorkshire Horizons (recovery service) think suitable for primary care shared care' and NYH provided supportive role externally	UK
Using recovery management check-ups for primary care to improve linkage to alcohol and other drug use treatment: a randomized controlled trial three-month findings	Scott CK et al (2022)	Linkage manager acts as motivator and promotes engagement, contacts patient for check-ups	USA

* Article includes descriptions of multiple models.

Model type: Integrated care

Model description: Two or more disciplines working together in one setting.

Related terms: Multidisciplinary care, co-located, primary care behavioural health model.

Title	Authors	Reason	Setting
Collaborative care for opioid and alcohol use disorders in primary care: the SUMMIT randomized clinical trial	Watkins K et al (2017)	Care coordinators play key role, multiple assessments with patients	USA
Integration of behavioural medicine in primary care	Bholat MA, Ray L, Brensilver M et al (2012)	Embedded behavioural health staff	USA
Pilot program integrating outpatient opioid treatment within a rural primary care setting	Buck-McFayden E, Lee-Popham S and White A (2021)	Intensive programme set in one clinic, rural care	Canada
The primary care behavioral health model (PCBH) and medication for opioid use disorder (MOUD): integrated models for primary care	de Saxe Zerden L, Cooper Z, Sanii H (2022)	Social worker delivering behavioural health interventions in primary care setting	USA
Managing care for patients with substance abuse disorders at community health centers*	Gurewich D, Prottas J, Sirkin J (2014)	On-site behavioural health staff and internal referrals	USA
Primary care-based models for the treatment of opioid use disorder: a scoping review*	Korthius PT et al (2017)	One-stop shop model; integrated prenatal care and MAT; buprenorphine HIV evaluation and support collaborative model; Medicaid health home model	USA
Primary care models for treating opioid use disorders:	Lagisetty P et al (2017)	Multidisciplinary care in one setting	USA

Title	Authors	Reason	Setting
what actually works? A systematic review*			
Integrating addiction medicine into rural primary care: strategies and initial outcomes	Logan DE et al (2019)	Behavioural health and addiction medicine programme integrated in primary care clinic	USA
Integrating substance use disorder services with primary care: the experience in California	Padwa H, Urada D, Antonini VP (2012)	Addiction services delivered in primary care, or vice versa	USA
Effect of integrating substance use disorder treatment into primary care on inpatient and emergency department utilization.	Wakeman SE et al (2019)	Counselling and recovery coaches available in primary care setting, supervision from addiction specialist teams	USA
How health centers engage elders with substance use disorder in treatment	Flinter M (2021)	Single clinic in primary healthcare centre	USA
Using shared medical appointments to increase access to buprenorphine treatment	Roll D, Spottswood M, Huang H; (2015)	Two specialities present at group sessions	USA
Expanding access to medication assisted treatment (MAT) through primary care practices: Findings from the Maine Health Access Foundation's Addiction Care Program (years one and two)	Smith ML et al (2019)	Care provided in one location to reduce transportation barriers	USA
Multi-disciplinary treatment of opioid use disorder in primary care using the collaborative care model	Brackett CD et al (2022)	Multi-agency approach, set within primary care clinic	USA

* Article includes descriptions of multiple models

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- ⁵ **National Drugs Mission Plan: 2022-2026 - gov.scot (www.gov.scot)**
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