Integrated care to address the physical health needs of people with severe mental illness: a rapid review

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Abstract

Background

People with mental health conditions have a lower life expectancy and poorer physical health outcomes than the general population. Evidence suggests this discrepancy is driven by a combination of clinical risk factors, socioeconomic factors, and health system factors.

Objective(s)

To explore current service provision and map the recent evidence on models of integrated care addressing the physical health needs of people with severe mental illness (SMI) primarily within the mental health service setting.

The research was designed as a rapid review of published evidence from 2013-2015, including an update of a comprehensive 2013 review, together with further grey literature and insights from an expert advisory group.

Synthesis

We conducted a narrative synthesis, using a guiding framework based on nine previously identified factors considered to be facilitators of good integrated care for people with mental health problems, supplemented by additional issues emerging from the evidence.

Descriptive data were used to identify existing models, perceived facilitators and barriers to their implementation, and any areas for further research.

Findings and discussion

The synthesis incorporated 45 publications describing 36 separate approaches to integrated care, along with further information from the Advisory Group.

Most service models were multi-component programmes incorporating two or more of the nine factors: information sharing systems, shared protocols, joint funding/commissioning, co-located services, multidisciplinary teams, liaison services, navigators, research, and reduction of stigma.

Few of the identified examples were described in detail and fewer still were evaluated, raising questions about the replicability and generalisability of much of the existing evidence. However, some common themes did emerge from the evidence. Efforts to improve the physical health care of people with SMI should empower people (staff and service users) and help remove everyday barriers to delivering and accessing integrated care. In particular, there is a need for improved communication between professionals and better information technology to support them, greater clarity about who is responsible and accountable for physical health care, and awareness of the effects of stigmatisation on the wider culture and environment in which services are delivered.

Limitations and future work

The literature identified in the rapid review was limited in volume and often lacked the depth of description necessary to acquire new insights. All members of our Advisory Group were based in England, so this report has limited information on the NHS contexts specific to Scotland, Wales and Northern Ireland.

A conventional systematic review of this topic would not appear to be appropriate in the immediate future, though a more interpretivist approach to exploring this literature might be feasible.

Wherever possible, future evaluations should involve service users and be clear about which outcomes, facilitators, and barriers are likely to be context-specific and which might be generalisable.

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Alphabetical list of abbreviations

A&E	Accident and Emergency
BMI	Body Mass Index
CCG	Clinical Commissioning Group
CCO	Coordinated Care Organisation
CENTRAL	Cochrane Central Register of Controlled Trials
CDSR	Cochrane Database of Systematic Reviews
CLAHRC	Collaboration for Leadership in Applied Health Research and Care
CMHC	Community Mental Health Centre
CMHT	Community Mental Health Team
CPA	Care Programme Approach
CPHC	Community Physical Health Co-ordinator
CPN	Community Psychiatric Nurse
CQUIN	Commissioning for Quality and Innovation
DARE	Database of Abstracts of Reviews of Effects
EMR	Electronic Medical Record
GMS	General Medical Services
GP	General Practitioner
HS&DR	Health Service & Delivery Research
HTA	Health Technology Assessment database
IPC	Integrated and Personalised Commissioning
MDT	Multi-Disciplinary Team
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
NIHR	National Institute for Health Research
NHS	National Health Service
NHSEED	NHS Economic Evaluations Database
PBHCI	Primary and Behavioural Health Care Integration
QOF	Quality and Outcomes Framework
SAMHSA	Substance Abuse and Mental Health Services Administration
SCR	Summary Care Record
SHAPE	Supporting Health And Promoting Exercise
SMI	Severe Mental Illness
UK	United Kingdom
US	United States
VA	Veterans Administration

Scientific summary

Background

People with mental health conditions have a lower life expectancy and poorer physical health outcomes than the general population. Evidence suggests this discrepancy is driven by a combination of clinical risk factors, socioeconomic factors, and health system factors.

While physical health and mental health are closely linked, services for mental health conditions are typically separate from general healthcare for physical conditions.

Service integration (i.e. breaking down the barriers in how care is provided between family doctors and hospitals, between physical and mental health care, and between health and social care) is a key step in the proposed system change for the NHS. Service integration encompasses the concept of integrated care; a potentially complex intervention with many different components. A number of initiatives relating to the development of integrated care services are underway in England. These include Vanguard sites, Integrated Personal Commissioning and establishment of the NHS England Mental Health Taskforce.

A systematic review published in 2013 (Bradford *et* al) evaluated interventions that integrated medical and mental health care to improve general medical outcomes in individuals with SMI. The included interventions were associated with increased rates of immunization and screening, but had mixed results in terms of changes in physical functioning, and none reported clinical outcomes. In the same year, the Mental Health Foundation undertook an inquiry into integrated health care for people with mental health problems. This identified nine factors at the heart of good integrated care for people with mental health problems: (1) Information sharing systems; (2) Shared protocols; (3) Joint funding and commissioning; (4) Co-location of services; (5) Multidisciplinary teams; (6) Liaison services; (7) Navigators; (8) Research; and (9) Reduction of stigma.

Objectives

The aim of this project is to explore what current provision exists in practice, and to map the most recent evidence on models of care for addressing the physical health needs of people with mental health problems, primarily within the mental health service setting. Specifically, we sought to address the following four questions:

1. What type of models currently exist for the provision of integrated care specifically to address the physical health needs of people with severe mental illness (SMI) when accessing mental health care services?

2. What are the perceived facilitators and barriers to implementation of these models?

3. How do models implemented in practice compare and contrast with those described in the literature?

4. Can we identify high priority areas for either further primary research or a full evidence synthesis?

Methods

We carried out a rapid review to identify, appraise and synthesise relevant evidence from 2013 to 2015, incorporating an update of Bradford *et al* (2013). Our approach was pragmatic and iterative in nature. Inevitably the process was less exhaustive and the outputs somewhat less detailed than might be expected from a full systematic review. The results should be viewed in the context of evolving NHS policy and the likelihood of ongoing change in relation to developing models of integrated care.

Data sources

We considered two main data sources: the published literature and an advisory group (comprising service users and experts in the field of mental health).

Literature

A literature search was undertaken to identify empirical and descriptive publications relating to integrated care for the physical health of people with SMI. Building on the Bradford et al review we carried out searches to find and prioritise any new evaluative studies since 2013, using an adapted version of the search strategy from the review.

Nine electronic databases were searched from 1st January 2013 to May/June 2015. .

Further searches were undertaken to identify UK and international guidelines and any relevant English-language government policy documents from the UK, Australia, New Zealand, Canada or USA.

The project team also collected relevant literature recommended by members of the Advisory Group working in the field of mental health.

Advisory group

We contacted a number of field experts with an interest in our topic. Service users were identified through local contacts. Contacts were made by telephone or face-to-face meeting, with brief notes recorded for each conversation on standard forms (see Appendix 1 and Appendix 2).

Inclusion and exclusion criteria

Study design: Empirical and descriptive publications, including evaluative studies arising from an update of Bradford et al; policy/guideline documents.

Setting: Integration of services primarily *within* the healthcare sector. Models focused on the wider integration of services spanning non-NHS settings (e.g. social care, education, employment, housing, and voluntary sector provision) were not eligible for inclusion.

Population: People diagnosed with SMI (schizophrenia, schizotypal and delusional disorders; bipolar affective disorder; severe depressive episode(s) with or without psychotic episodes).

Intervention: Any health care services that include arrangements to address the physical health needs of people with SMI. Programmes primarily concerned with organisation and delivery of services rather than the implementation of discrete health technologies.

Outcome: Any outcome relevant to the provision and implementation of integrated care. For the evaluative literature, outcomes were restricted to those related to physical health (including sexual health).

Study selection and data extraction

Study selection was carried out by three reviewers independently and data extraction was carried out by one reviewer, checked by a second reviewer. Disagreements were resolved by discussion or with the involvement of a third reviewer.

Quality assessment

We did not assess the included papers for methodological quality, given our primary aim was to describe interventions and their implementation rather than establishing the risk of bias in their evaluation.

Synthesis

We combined studies in a narrative synthesis, using the nine factors of good integrated from the Mental Health Foundation report as a guiding framework. We also incorporated into our synthesis any other relevant factors identified during data extraction and from discussions with Advisory Group field experts, particularly wider system factors that might underpin the successful implementation of integrated care interventions.

Findings and discussion

We spoke to 13 Advisory Group field experts, of whom eight provided helpful signposting information. We engaged with five people in more detailed face-to-face or teleconference conversations. We had face-to-face or teleconference conversations with two service users.

We identified 45 publications describing 36 separate approaches to integrating physical health needs into the care of people with SMI were included in this rapid review. These comprised a range of study designs including systematic and non-systematic literature reviews, primary studies, book chapters, conference abstracts, dissertations, policy and guidance documents, feasibility studies, descriptive reports and programme specifications. Twenty-seven papers reported on 25 distinct evaluations of programmes or interventions.

Most service models were multi-component programmes incorporating two or more of the factors that have previously been identified as facilitators of integrated care: information sharing systems, shared protocols, joint funding/commissioning, co-located services, multidisciplinary teams, liaison services, navigators, research, and reduction of stigma (see table below).

The majority of programmes were in community and/or secondary care mental health settings in the UK, North America, or Australia.

Classification of included publications

	Bartels[31]	Bellamy[52]	Bradford[26]	Chawstiak[36,44]	Curtis[48]	De Hert[53]	Department of Health[3]	Department of Health[5]	Druss[51]	Greater Manchester Group[45,46]	Happell[28,54-56]	Hardy[29]	Jones[38]	Kelly[30] Brekke[42]	Kern[57]	Kilany[41]	Kilbourne[32,34,35,58]	Lee[39]	Maki[43]	Mental Health Foundation[27]	NHS IQ[49]	NHS London[59]	Nover[60]	Parks[61]	Pirraglia[40]	Rubin[50]	Shackleford[62]	Solomon[63]	Stark[64]	Tallian[65]	Ungar[66]	Vanderlip[67]	Vinas Cabrera[33]	Von Esenwein[37]	Welthagen[68]	Yeomans[47]
Study design E:Evaluation P:Policy D:Descriptive	E	E	E	E E	E	P	P E	P	E	E	D D E	E	E	E	D	E	E E E D	E	E	D	E	D	D	D	E	E	D	D	D	D	D	D	E	E	D	E
1. Information sharing systems			●				●			●					●	●	●		●	●				●					●				●	●		●
2. Shared protocols			●		●					●					●	●				●		●		●				●					●			
3. Joint funding and commissioning		●	●					●							●	●				●	●			●												
4. Co-location of services	●	●	●	●	●		●		●		●				●	●		●		●			●	●	●	●	●			●					●	
5. Multidisciplinary teams		●	●	●	●		●	●	●	●					●	●		●	●	●	●		●	●		●	●						●	●		
6. Liaison services		●	●	●			●		●	●	●				●	●				●				●	●	●			●		●				●	
7. Navigators	●	●								●	●			●	●	●				●	●		●	●		●			●					●		
8. Research															●	●			●	●				●					●							
9. Reduction of stigma										●				●	●	●	●			●	●			●												

•1-9 indicates the likely emphasis of the intervention, according to the nine factors of good integrated care

What type of models currently exist for the provision of integrated care specifically to address the physical health needs of people with severe mental illness (SMI) when accessing mental health care services?

Most programmes described the complex interaction of multiple components. However, few were described in detail and fewer still were comprehensively evaluated, raising questions about the replicability and generalisability of much of the existing evidence.

Many variants of the 'navigator' model were described, though the few available evaluations tended to be superficial, with little clarity about implementation. However, the available evidence suggests that any individual tasked with co-ordinating care needs to be empowered with the authority to influence other care professionals. Additional considerations of sustainability and ethics apply to 'peer navigator' approaches.

What are the perceived facilitators and barriers to implementation of these models?

A fundamental requirement for successful integration of physical and mental health care is having the right people with the right skills and attitudes.

Any planned structural changes should consider the likely impact on the attitudes, skills and behaviours of the people interacting within and across health organisations, be they health professionals or service users. Many factors identified as facilitators either empowered individuals and/or minimised the effort needed for individuals to provide and access integrated services.

Mental health professionals who avoid physical health actions through a lack of confidence in their own skills may be empowered through targeted training and greater clarity about their responsibilities in relation to physical health. Care co-ordinators/navigators may have an empowerment role by providing advocacy for service users in certain settings, and might themselves benefit from greater formal authority over care integration. All health professionals need time to undergo training and to collaborate on patient care, which can be difficult in clinical settings with heavy caseloads. Management commitment to protect time and resources for such activities has been raised as a potentially worthwhile investment.

Integrated information systems and individual electronic records have yet to be properly implemented due to various technical, legal, and organizational barriers. However, these remain the most promising means of simplifying communication and collaboration among professionals across multiple services. However, any arrangements that reduce the level of effort necessary to deliver integrated services on a day-to-day basis should be welcomed. The literature mentions simple measures such as informal referral procedures, high visibility, and open access as facilitators of physical health clinics for people with SMI in mental health settings.

Multidisciplinary teams form an important role in the provision of mental health services, and are likely to continue to do so in the future. However, simply having an appropriate skill mix within a team does not appear to be sufficient for providing integrated care. There is often broad agreement about what needs to be done to improve the physical health of people with SMI, but not about who should be responsible. Within multidisciplinary teams, there must be clarity about the specific aspects of care for which individuals in the team are responsible and accountable, supported by

effective communication between team members. We heard several instances where opportunities to intervene have been missed due to poor communication between providers.

Organisational incentives alone are likely to be inadequate unless individuals have the appropriate knowledge, skills, resources, and environment to support them. Shared protocols, joint action plans and decision support tools may assist by clarifying responsibilities and supporting record keeping and communication across boundaries.

The Advisory Group described several ways in which the existing organization of services, and often unconscious assumptions, attitudes, and behaviours of health care staff, can be stigmatizing to people with SMI. Concerns such as inattention to the sexual health of people with SMI and inpatient environments conducive to poor physical health were not mentioned in the identified literature.

Greater prioritization of physical health needs to be embedded in the culture and environment of mental health services. This will require clear strategic leadership and commitment from staff at all levels, backed by appropriate funding arrangements.

How do models implemented in practice compare and contrast with those described in the literature?

In 2013, the Mental Health Foundation concluded that good integrated care appears to be the exception rather than the norm, with isolated pockets of good practice, but overall dissatisfaction with progress being made across the UK. Our Advisory Group field experts gave the impression that this remains the state of affairs in 2015, describing a small number of high-profile programmes as well as their own local efforts. However, at the time of writing there are several high-profile initiatives either announced or ongoing.

Can we identify high priority areas for either further primary research or a full evidence synthesis?

A lack of evaluation and dissemination of local innovations makes it difficult for lessons learned locally to be shared across institutions and the wider health service.

Most published evaluations were small-scale and/or poorly described. Ideally, future evaluations should be on a larger scale and use meaningful, validated measures of success. In particular, evaluations need to be clear about which outcomes, facilitators, and barriers are likely to be context-specific and which might be generalisable.

Wherever possible, service users should be involved in the design, conduct, and evaluation of programmes. For example, service users on our advisory panel identified scope for: improved appointment booking arrangements for patients with SMI; making mental health inpatient environments more conducive to good physical health; and greater attention to the sexual health of people with SMI. These concerns have received very little attention in the recent literature.

There is scope for additional research on understanding why efforts to integrate physical health care needs for people with SMI succeed or fail, using qualitative or mixed-method techniques.

Limitations and future work

The literature identified in this rapid review was restricted in volume and often lacked the depth of description necessary to acquire useful insights. Much of the literature was descriptive or failed to

provide useful information on barriers and facilitators. The weight of attention given to specific interventions in our synthesis was partly determined by the amount of available information rather than the inherent value of the intervention.

All members of our Advisory Group were based in England, so this report has limited information on the NHS contexts specific to Scotland, Wales and Northern Ireland.

While our initial focus was on people accessing care in the mental health setting, we found that the initial point of access is often not quite so clear cut, especially when patients are invariably referred back and forth between secondary and primary care.

Due to the nature of the existing published evidence and changing policy landscape, a full systematic review of this topic would not appear to be feasible or appropriate in the immediate future. However, there might be an argument for undertaking a more interpretivist approach to exploring this literature. Very few of the interventions described in the literature had any explicit theoretical basis, but it might be possible to code these studies with the specific aim of developing higher level concepts and theory. Equally, aspects of this literature could be interpreted in light of existing theories of behavior change. Such an investigation was outside the scope and resources of this rapid review.

Plain English summary

People with mental health conditions have a lower life expectancy and poorer physical health outcomes than the general population. Evidence suggests this is due to a combination of clinical risk factors, socioeconomic factors, and health system factors.

Several recent reviews have looked at ways to better integrate physical and mental health care for for people with severe mental illness (SMI). One review identified nine factors for good integrated care: Information sharing systems; Shared protocols; Joint funding and commissioning; Co-location of services; Multidisciplinary teams; Liaison services; Navigators; Research; and Reduction of stigma.

This rapid review looked for only the most recent evidence and examples of practice in this area by searching the published literature and by speaking to people involved in providing or using current services.

Few of the identified examples were described in detail and fewer still were evaluated, raising questions about the replicability and generalisability of much of the existing evidence. However, some common themes did emerge from the evidence. Efforts to improve the physical health care of people with SMI should empower people (staff and service users) and help remove everyday barriers to delivering and accessing integrated care. In particular, there is a need for improved communication between professionals and better information technology to support them, greater clarity about who is responsible and accountable for physical health care, and awareness of the effects of stigmatisation on the wider culture and environment in which services are delivered.

1. Introduction

People with severe mental illness (schizophrenia, schizotypal and delusional disorders; bipolar affective disorder; severe depressive episode(s) with or without psychotic episodes[1]) have a lower life expectancy and poorer physical health outcomes than the general population.[2] Evidence suggests this discrepancy is driven by a combination of clinical risk factors (e.g. comorbid diabetes, cardiovascular disease), socioeconomic factors, and health system factors.[3] A wide range of solutions have been proposed to address this issue through changes and improvements to existing health service arrangements.

The aim of this project is to explore what current provision exists in practice together with mapping recent evidence on models of care for dealing with the physical health needs of people with mental health problems at point of access in the mental health service setting.

2. Background

Physical health of people with severe mental illness

People with mental health conditions have a lower life expectancy and poorer physical health outcomes than the general population.[2] Physical health and mental health are closely linked, and demands have been repeatedly placed on the NHS to deliver an equal response to the treatment of each.[4, 5] Many patients with severe mental illness (SMI) remain under-served. In 2014, the National Audit of Schizophrenia revealed that only 33% of people with schizophrenia were adequately monitored for diabetes and cardiovascular disease; just 52% had their body mass index (BMI) recorded; and 36% of service users received an intervention to address impaired control of blood glucose on an annual basis.[6] Another review found that one third of patients with SMI are seen only in primary care.[7] These recent reports indicate serious shortcomings in the physical health monitoring and integration of services for this population group.

Services for mental health conditions have traditionally been separate from general healthcare for physical conditions but there is increasing emphasis on developing a whole system approach to improve integration between the two, with particular focus on patient-centred development and delivery.[4] This isn't new; a focus on patient-centred delivery of health services for people with mental illness has been advocated for many years. In 1991, the Department of Health introduced 'The Care Programme Approach', which was subsequently updated in 2013.[8] The Care Programme Approach (CPA) is a national system setting out how secondary mental health services should help people with mental illness and related complex needs. Those eligible for CPA are entitled to a full assessment of health and social care needs, a care plan (overseen by a care co-ordinator) and regular reviews of health and progress, although Mental Health Trusts do not have to follow this guidance and may adopt their own policy. The personalisation agenda for people with serious mental illness also featured in the National Service Framework for Mental Health in 1999.[9]

In 2006, the Department of Health produced a commissioning framework entitled "Choosing Health: Supporting the physical needs of people with severe mental illness".[2] This described the nature of pilot health improvement programmes in which a lead mental health nurse practitioner attached to an existing team (e.g. primary care team or community mental health team (CMHT)) would be responsible for conducting physical health checks , in-depth consultations (including providing relevant information, signposting, exploring broader health-related issues such as employment or education), referral to screening and health promotion services, and establishing specific one-to-one or group health improvement interventions. The pre-requisites for this type of programme were defined[2] and evaluations have emerged since.[10, 11] However, there seems little available evidence of their wider implementation.

In terms of existing guidance and incentives to address the treatment and management of people with SMI, NICE guidelines for various mental health disorders include those for psychosis and schizophrenia,[12-15] and a Commissioning for Quality and Innovation (CQUIN) incentive is currently in place for secondary health care providers to improve the physical health care of people with SMI.[16] This CQUIN helps ensure service users have their physical and mental health diagnoses recorded, and aims to promote effective communication between primary care, specialist mental health services and service users. In addition, in the latest proposal announced by NICE to improve the quality of care by family doctors consideration is given to the introduction of new quality indicators

to identify and support people with SMI who are at risk of cardiovascular disease.[17] These indicators will inform negotiations for the 2016/17 Quality and Outcomes Framework (QOF).

Integrated care

Service integration (i.e. breaking down the barriers in how care is provided between family doctors and hospitals, between physical and mental health care, and between health and social care) is a key step in the proposed system change for the NHS.[5] Service integration encompasses the concept of integrated care; a potentially complex intervention with many different components. As yet, integrated care is not well-defined and the terminology to describe the concept is diverse (e.g. collaborative care, holistic care, patient-centred care).

The present focus on improving integrated care for people with mental health needs appears to be from the perspective of access to health services for an acute or chronic physical health condition.[18] Information about the converse of this (i.e. addressing the physical health care needs of patients with severe mental illness at point of access in the mental health service setting) seems lacking. The latter represents the primary focus for this rapid review.

3. Methods

General approach

This project was resourced as a rapid review of current practice and recently published evidence. There is no generally accepted definition of the term 'rapid review' and a number of other terms have been used to describe it as one which incorporates systematic review methodology modified to various degrees. Our intention was to carry out a review using systematic and transparent methods to identify, appraise and produce a synthesis of relevant evidence from 2013 to 2015. Our approach was necessarily pragmatic and iterative in nature. Inevitably the process would be less exhaustive and the outputs somewhat less detailed than might be expected from a full systematic review.

The results of this rapid review should also be viewed in the context of evolving UK policy and the likelihood of ongoing change in relation to developing models of integrated care. Recent initiatives are summarized in Box 1.

Box 1: NHS policy and strategy

Present policy in England is aiming to develop new models of care as part of the strategic plan for wider system change in the NHS.[5] A number of initiatives are underway, including several relating to the development of integrated care services. These include:

Vanguard sites[19]
In January 2015, the NHS called for expressions of interest for individual organisations and health and social care partnerships to become Vanguard Sites for the New Care Models Programme (outlined in the Five Year Forward View.[5] Twenty-nine organisations across the UK were selected to lead in supporting improvement and integration of services across three key areas: (1) Integrated primary and acute care systems (i.e. GP, hospital, community, and mental health services); (2) Multispecialty Community Providers (transferring specialist care from the acute sector into the community); and (3) Enhanced health in care homes (joining up health, care, and rehabilitation services for older people).

Of the 29 Vanguards sites selected, nine subsequently focused on the first of these key areas, i.e. integrated primary and acute care systems. Of the nine sites, North East Hampshire and Farnham[20] was the only one where integration across mental and physical health care was specifically mentioned by NHS England (though similar activity may be implicit in others). North East Hampshire and Farnham Clinical Commissioning Group report that five multidisciplinary integrated care teams are now operational. These comprise community nurses, occupational therapists, physiotherapists, social workers, a psychiatric nurse, a lead psychiatrist, a pharmacist, a geriatrician, GPs, the voluntary sector, and specialists in palliative care and domiciliary care.[21]

Integrated Personal Commissioning[22]
In July 2014, NHS England and Local Government bodies invited health and social care leaders to become demonstrator sites to help develop a new integrated and personalised commissioning (IPC) approach to providing care for people with complex needs. Eight sites were chosen in the first instance. IPC aims to move the balance of spending power to the individual, in terms of people being able to shape their own health and social care delivered (as appropriate) by various combinations of local authority, NHS, and voluntary sector providers. The latest update indicates that local strategies are now being developed and discussed with senior figures at NHS England.[23]

NHS England Mental Health Taskforce[24]
In March 2015, a new Taskforce was set up to develop a five year strategy for mental health across England. The Taskforce was set up to explore variation in service provision, examine outcomes for service users, and identify priorities for improvement. A particular focus of this strategy was to improve the physical health of people with mental health problems. The Mental Health Taskforce public engagement survey findings were published in September 2015.[25] Although very little was reported on models of care to address physical health

needs of people with SMI, findings identified priorities for mental health service users in general relating to improved access, reduction of stigma, parity of esteem, early support/prevention, the need for a more joined up system, and workforce-related issues such as attitudes and need for appropriate training. These findings will inform a new Mental Health Strategy for England with a report is due in Autumn 2015.

Research questions

We sought to address the following four questions:

1. What type of models currently exist for the provision of integrated care specifically to address the physical health needs of people with severe mental illness (SMI) when accessing mental health care services?

2. What are the perceived facilitators and barriers to implementation of these models?

3. How do models implemented in practice compare and contrast with those described in the literature?

4. Can we identify high priority areas for either further primary research or a full evidence synthesis?

Scope and definitions

The focus of the review was NHS health care services that included steps to address the physical health needs of people diagnosed with SMI. We focused on where these services were provided in the mental health care setting. We used the NICE definition of 'Severe mental illness' to cover: schizophrenia, schizotypal and delusional disorders; bipolar affective disorder; severe depressive episode(s) with or without psychotic episodes.[1] We adopted a broad definition for physical health outcomes, including the assessment and modification of cardio-metabolic risk factors, anthropometric measures, and physical functioning.

We did not consider the various interventions or services aimed at the broader needs (i.e. beyond health) of this group of people, or the integration of services spanning non-NHS settings (e.g. social care, education, employment, housing, and voluntary sector provision).

Data sources

We considered two main data sources: conversations with our advisory group (comprising field experts and service users in the area of mental health), and the published literature.

Advisory Group

We convened an Advisory Group primarily to extend our working knowledge of the topic area and understand more clearly some of the issues arising from the published literature. We contacted a number of known field experts who had an interest in our topic. Service users were identified through local contacts. Contacts were made on the basis that their advisory input would help us to (a) develop our research and (b) ultimately think about what might be useful to those commissioning and delivering future services. Early reading of the background and policy literature helped us to

develop pro-forma contact forms with a list questions (Appendices 1 and 2). Contacts were made by telephone or face-to-face meeting. Brief notes were recorded.

Literature

The aim of the literature search was to identify relevant reviews, studies, guidelines and policy documents relating to integrated care for the physical health of people with SMI. Early scoping searches to inform the protocol identified the previous systematic review by Bradford et al. about the effectiveness of models of care that integrated medical and mental health care to improve medical outcomes of people with severe mental illness. This systematic review was carried out in 2011 and updated in 2013. The review included four RCTs of US-based interventions, of which three were conducted in Veterans Administration (VA) outpatient mental health clinics, and the fourth was an evaluation funded by the National Institute of Mental Health. All four interventions included some form of nurse-led care coordination, with or without components such as a specific "liaison" role, direct psychiatrist/family practitioner involvement, patient self-management support, and guideline-based decision support tools. The included interventions were associated with increased rates of immunization and screening, but had mixed results in terms of changes in physical functioning, and none reported clinical outcomes.

Building on the Bradford et al review we carried out searches to find and prioritise any new evaluative studies since the 2013 update, using an adapted version of the search strategy from the review.[26]

The following databases were searched: Cochrane Database of Systematic Reviews (CDSR), Database of Abstracts of Reviews of Effects (DARE), Health Technology Assessment database (HTA), NHS Economic Evaluations Database (NHSEED), MEDLINE, MEDLINE in process, Cochrane Central Register of Controlled Trials (CENTRAL), EMBASE, and PsycINFO. Searches for ongoing and completed trials were carried out on Clinical Trials.gov. All searches were limited where possible to references added to the databases from 1st January 2013 onwards. As searches for the two Bradford et al reviews ran from inception to 18th January 2013, our selected start date ensured there were no gaps in the search Retrieval was limited to randomised controlled trials or evaluation studies.

Searches of the National Guideline Clearinghouse and the Trip database were undertaken to identify UK and international guidelines relating to integrated care for SMI. In addition, the following websites were searched to identify any relevant English-language government policy documents from the UK, Australia, New Zealand, Canada and USA:

- Department of Health https://www.gov.uk/government/organisations/department-of-health
- Australian Department of Health - http://www.health.gov.au/
- New Zealand Ministry of Health - http://www.health.govt.nz/
- Health Canada - http://www.hc-sc.gc.ca/index-eng.php
- Substance Abuse and Mental Health Services Administration - http://www.samhsa.gov/

A further search of Google was carried out to locate UK reports relating to integrated care for SMI. Using the Google advanced search interface, the search was limited to UK pdfs published in English. The first 100 results were scanned for relevance.

Alongside the more formal searches undertaken as described above, the project team collected relevant literature from experts and contacts working in the field of mental health and followed up any documents found to obtain further relevant literature. This "snowballing" technique has been used in previous reviews.

All searches were carried out in May/June 2015. Full search strategies and results can be found in Appendix 3.

Inclusion and exclusion criteria

Study design: Empirical and descriptive study designs, including evaluative literature arising from the update of Bradford et al; policy/guideline documents.

Setting: Integration of services primarily *within* the healthcare sector i.e. NHS if UK-based. Models focused on the wider integration of services spanning non-NHS settings (e.g. social care, education, employment, housing, and voluntary sector provision) were not eligible.

Population: People diagnosed with SMI (schizophrenia, schizotypal and delusional disorders; bipolar affective disorder; severe depressive episode(s) with or without psychotic episodes).

Intervention: Any health care services that include bringing together care arrangements to address the physical health needs of people with SMI. Programmes primarily concerned with organisation and delivery of services rather than the implementation of discrete health technologies.

Outcome: Any outcome related to the provision and implementation of integrated care. For the evaluative literature, outcomes were restricted to those related to physical health (including sexual health).

Study selection and data extraction

Electronic search results were loaded into Endnote X7. At the initial screening stage, the results were divided between three reviewers to eliminate obviously irrelevant items. Decisions were recorded as "include", "reject" or "maybe". A second screen was carried out by three reviewers independently to arrive at a definitive list of "includes" and "rejects". Full text copies were ordered for the included records. Papers identified from other sources (e.g. field experts) were added to the Endnote library and assessed in the same way.

A data extraction template was developed and piloted on 12 papers by three reviewers (see Appendix 4). Details included population and setting; approach to Integrated Care; Mental Health Foundation factors covered (1-9); barriers and facilitators to implementation; details of evaluations. Revisions to the template were made where necessary. Subsequent data extraction was carried out by one reviewer and checked by a second reviewer. Disagreements were resolved by discussion or with the involvement of a third reviewer.

Quality assessment

Given the lack of detail reported in the studies and the lack of comprehensive evaluations, we did not assess the included papers for methodological quality; our aim was to describe interventions and their implementation rather than establishing risk of bias in their evaluation.

Synthesis

We carried out a narrative synthesis, building on the 2013 Mental Health Foundation inquiry.[27] This was a substantial piece of work based on a literature review on integrated health care and mental health care, three expert seminars attended by 31 people and a call for evidence on the best ways to integrate care which led to over 1200 responses. The scope of the enquiry incorporated both health and social care, and identified nine structural and organizational arrangements at the heart of good integrated care for people with mental health problems (Box 2).

Box 2: Nine factors at the heart of good integrated care (Mental Health Foundation, 2013)

1. Information sharing systems
2. Shared protocols
3. Joint funding and commissioning
4. Co-location of services (e.g., services brought together for physical and practical ease of access)
5. Multidisciplinary teams
6. Liaison services (e.g., provision of shared expertise across service settings)
7. Navigators (e.g., named care co-ordinators)
8. Research (e.g., to ascertain the best way of delivering and evaluating integrated care)
9. Reduction of stigma

The majority of the recent evidence identified in this rapid review relates to complex and/or multicomponent programmes that incorporated several of the nine factors key to good integrated care (see Box 2).[27] We used use these nine factors as a guiding framework to help answer our four research questions, and to explore the elements of interventions or care models. We also discuss further issues to emerge from the evidence; for example, we incorporated in our synthesis any other relevant factors identified during data extraction and from discussions with Advisory Group field experts and service users, particularly wider system factors that might underpin the successful implementation of integrated care interventions.

4. Nature of the evidence

Advisory Group

We spoke to 13 field experts (five provided detailed information) and two service users involved in the area of mental health services. We used their insights primarily to extend our working knowledge of the topic area and understand more clearly some of the issues arising from the published literature.

Literature

The search strategy retrieved 2,742 records. 70 records were included on the basis of screening titles and abstracts. 38 were retained and data extracted after reading the full paper; 32 were rejected. A further 10 papers were identified, four following discussions with field experts and six from the retrieval of relevant primary studies from rejected reviews. Seven of these 10 papers met our inclusion criteria and were included and data extracted; three were rejected. In total, 45 papers describing 36 approaches to integrating physical health needs into the care of people with SMI were included in this rapid review.

Some papers were retrieved outside the database search strategy (i.e. from website searching and via field experts) and had publication dates prior to 2013 (i.e. prior to our electronic search start date). Brief data extraction tables for all included studies are available in Appendix 5. For detailed information, readers are advised to consult the full reports.

The included papers comprised a range of study designs including systematic reviews and other literature reviews, various primary studies, book chapters, conference abstracts and dissertations, policy and guidance documents, feasibility studies, descriptive reports and programme specifications. We identified 27 papers reporting on 25 distinct evaluations of programmes or interventions;[2, 26, 28-52] few were described in detail and fewer still were comprehensively evaluated. Details of study characteristics are presented in Appendix5.

Table 1 presents a classification of the included publications showing our interpretation of how the programmes or interventions correspond with the nine factors of good integrated care.[27]

Figure 1: Flow of identified literature


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                                    ┌─────────────────────┐
                                    │ Database and        │
                                    │ internet searches   │
                                    │ n=2742              │
                                    └─────────────────────┘
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                                              │          ┌─────────────────┐
                                              ├─────────►│ Rejected on     │
                                              │          │ title/abstract  │
                                              │          │ n=2672          │
                                              ▼          └─────────────────┘
┌─────────────────────┐           ┌─────────────────────┐
│ Identified by       │           │ Included on         │
│ experts or reviews  │           │ title/abstract      │
│ n=10                │           │ n=70                │
└─────────────────────┘           └─────────────────────┘
          │                                   │
┌──────────────┐                              │          ┌─────────────────┐
│ Rejected on  │◄─────┐                       ├─────────►│ Rejected on full│
│ full text    │      │                       │          │ text            │
│ n=3          │      │                       │          │ n=32            │
└──────────────┘      ▼                       ▼          └─────────────────┘
          ┌─────────────────────┐   ┌─────────────────────┐
          │ Included on full    │   │ Included on full    │
          │ text  n=7           │   │ text  n=38          │
          └─────────────────────┘   └─────────────────────┘
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                      └──────────┬────────────┘
                                 ▼
                      ┌─────────────────────┐
                      │ Final included      │
                      │ publications        │
                      │ n=45                │
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                        ▼               ▼
          ┌─────────────────┐   ┌─────────────────┐
          │ Descriptive     │   │ Evaluative      │
          │ publications    │   │ publications    │
          │ n=18            │   │ n=27            │
          └─────────────────┘   └─────────────────┘
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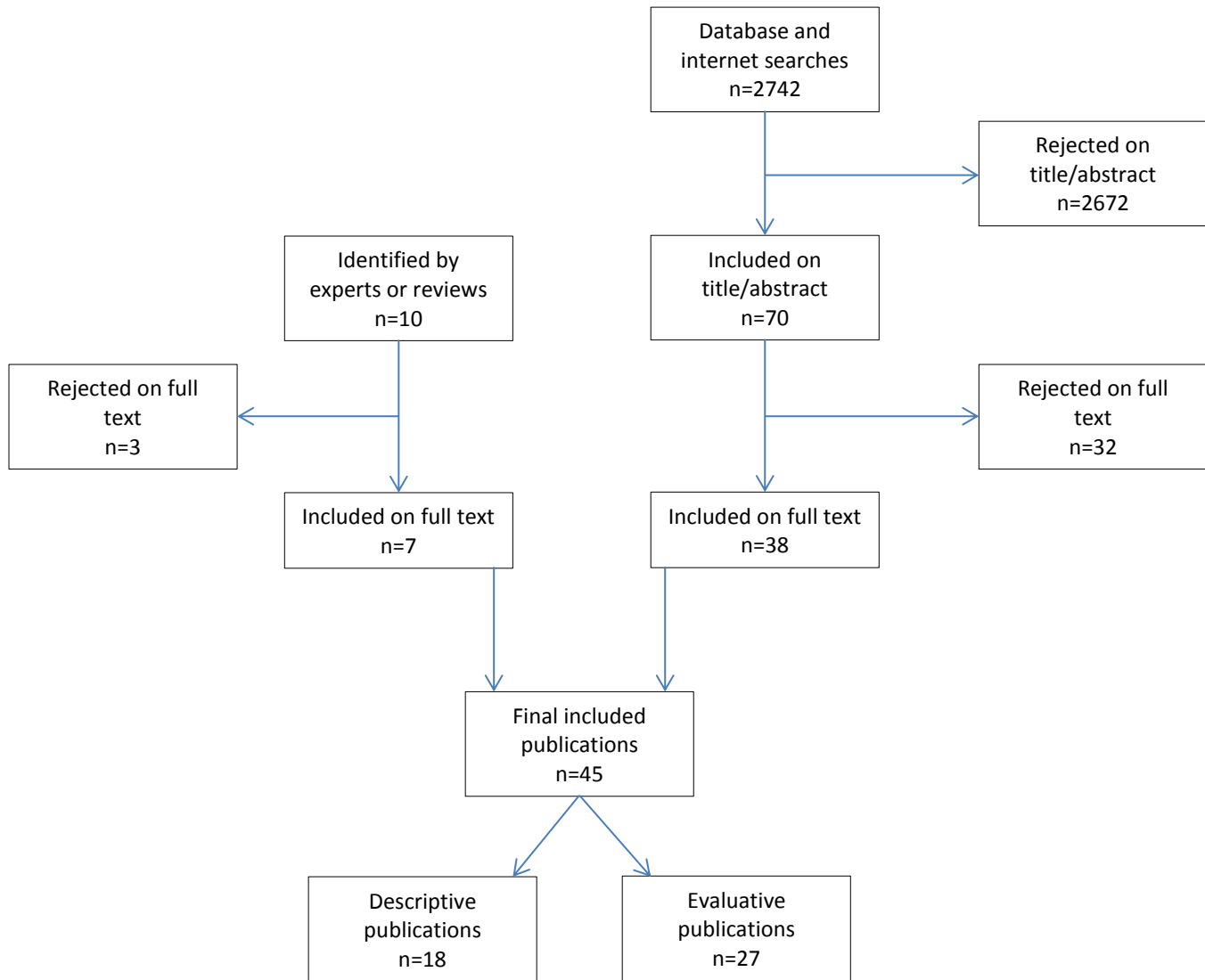
Table 1: Classification of included publications

	Bartels[31]	Bellamy[52]	Bradford[26]	Chawstiak[36,44]	Curtis[48]	De Hert[53]	Department of Health[2]	Department of Health[4]	Druss[51]	Greater Manchester[45,46]	Happell[28,54-56]	Hardy[29]	Jones[38]	Kelly[30] Brekke[42]	Kern[57]	Kilany[41]	Kilbourne[32,34,35,58]	Lee[39]	Maki[43]	Mental Health Foundation[27]	NHS IQ[49]	NHS London[59]	Nover[60]	Parks[61]	Pirraglia[40]	Rubin[50]	Shackleford[62]	Solomon[63]	Stark[64]	Tallian[65]	Ungar[66]	Vanderlip[67]	Vinas Cabrera[33]	Von Esenwein[37]	Welthagen[68]	Yeomans[47]
Study design E:Evaluation P:Policy D:Descriptive	E	E	E	E E	E	P	P E	P	E E	E	DDE	E	E	E	D	E	E E E D	E	E	D	E	D	D	D	E	E	D	D	D	D	D	D	E	E	D	E
1. Information sharing systems		•					•				•				•	•	•			•	•		•						•				•	•		•
2. Shared protocols		•				•					•				•	•				•		•		•						•			•			
3. Joint funding and commissioning		•	•					•							•	•				•	•			•												
4. Co-location of services	•	•	•	•	•		•		•		•				•	•		•		•			•	•	•	•	•				•				•	
5. Multidisciplinary teams		•	•	•	•		•	•	•	•					•	•		•	•	•	•			•	•	•							•	•		
6. Liaison services		•	•	•			•		•	•	•				•	•	•			•			•		•	•			•			•			•	
7. Navigators	•	•									•	•		•	•					•	•		•	•			•		•			•				
8. Research															•	•		•		•			•						•							
9. Reduction of stigma											•			•	•	•	•			•	•		•													

•1-9 indicates the likely emphasis of the intervention, according to the nine factors of good integrated care [27]

5. Findings and discussion

5.1. Information sharing systems (13 studies)

To properly integrate care, the Mental Health Foundation inquiry identified the need for a compatible information system within and across different care organisations that could establish individual electronic records of service users' integrated health and social care needs and interventions. The proposed system would also have the ability to anonymize and aggregate health and social care records to inform a needs assessment of the local population.[27]

One of the quality indicators in the general medical services (GMS) contract is the establishment and maintenance of a register of people with SMI. It also requires the establishment of a comprehensive care plan and recording of physical health-related measures (blood pressure, alcohol consumption, cervical screening, lithium monitoring) for a defined proportion of SMI service users.[69] The collection and maintenance of such information necessarily requires an adequate IT infrastructure.

Like the GMS contract, the US Substance Abuse and Mental Health Services Administration's (SAMHSA) Primary and Behavioural Health Care Integration (PBHCI) funding programme recommends a "registry/tracking system for all primary care needs of, and outcomes for, clients with serious mental illness".[57, 70] However, PBHCI grantees have noted both technical and legal barriers to implementing the required shared information systems. For example, Web-based registry software has thus far proved to be inadequate, resulting in organisations relying on less useful paper or Excel-based versions.[57]

Regulatory and medico-legal issues

Being able to access information from single or multiple electronic medical records (EMRs) is an important facilitator, as it allows providers to identify and track SMI populations and individuals needing physical health services.[61] However, behavioural health care providers in some US States have been prevented from being able to share EMRs as a consequence of federal privacy laws regarding drug and alcohol information. Regulatory barriers that limit information exchange between primary and mental health care have been identified as particularly problematic.[36] It is not clear from the published evidence to what extent such barriers have been overcome by self-contained US funding systems, such as the Veterans' Health Administration (VA), where integrated registry and EMR data have been used to target the physical health care needs of people with SMI.[26, 32, 34, 35, 51, 58] However, a recent plan to merge VA EMRs with US Department of Defense records proved costly and was abandoned in favour of an 'interoperable system'.[37]

Some authors have proposed allowing service users to opt-in to release health information into the shared system to overcome medico-legal barriers,[37] though this may raise questions about informed consent, particularly among SMI populations.

In the UK, the Data Protection Act (1998) and the Human Rights Act (1998) govern the sharing and confidentiality of health records and the Health and Social Care Information Centre (2013) has produced guidance on handling confidential information.[71]

Data collection

Some of the published evidence discussed facilitators and barriers to the initial identification and collection of service user data. For example, in the absence of a central register, a Californian programme that aimed to integrate primary care and mental health services for people with SMI reported spending several months of the 16-month project trying to identify eligible service users through chart review.[60]

Much of the literature is concerned with conducting physical health checks in people with SMI, but even where such checks have been undertaken, there is evidence that the subsequent results are either incompletely recorded or inaccessible to other care professionals. The problem of missing lab data (such as glucose and lipids) has been noted in the literature[34, 43, 60] and was raised as an issue by several of our field contacts. However, recent evidence from the Bradford and Airedale region suggests that incorporating a computerized template into the primary care information system improved the rates of both adherence to NICE standards for annual physical health checks and detection of significant cardiovascular risk.[47] While a number of physical screening templates have been proposed and implemented, some form of computer-assistance may be necessary to ensure sufficiently high quality data collection.

One of our field experts described attempts to implement such a screening template for collecting more comprehensive physical health data than the existing admission checklist used in his local psychiatric hospital. However, he noted a number or barriers to implementation, most significant being the technical and bureaucratic difficulty of being able to introduce any new template into the existing IT system.

Elsewhere, programmes have reported attempts to streamline the process of electronic data gathering by providing handheld units or desktop computer kiosks to allow service user self-entry of data such as depression rating scales,[57] though such technologies may not be accessible for people with low digital literacy and their overall impact is not clear.[37]

Data sharing

The most commonly reported technological barrier to the integration of physical and mental health care is the failure to accurately and effectively share service user data between providers.

One NHS field expert noted that access to and sharing of information with primary care is very difficult for physical health clinics provided in secondary care, as secondary and primary care use different electronic systems (PARIS and SystmOne respectively). This impedes efforts to intervene on the basis of results of screening or monitoring. Another field expert noted that the difficulties with the coordination of information systems extended beyond primary and secondary care to community mental health and social care settings.

The absence of 'joined-up' information systems is also apparent to service users. One respondent mentioned routinely being asked to physically hand over printouts of clinical information from one service provider to another, and gave an example where this resulted in a psychiatrist fortuitously identifying an otherwise unidentified risk of an adverse drug interaction. Such *ad hoc* approaches to data sharing are clearly inadequate for properly integrated care.

Various forms of shared electronic record have been proposed and implemented, including electronic personal health records that shift the locus and ownership of records to the service user,[37] and records that attempt to fully integrate health and social care data. However, these also raise questions about how to negotiate issues of permissions and privacy.

Currently, NHS service users are automatically opted into having a Summary Care Record (SCR) containing limited information primarily related to medications and allergies that can be shared between providers. Service users can request further information be included in the SCR, though it is not clear to what extent most service users are aware of this option. Some Clinical Commissioning Groups (CCGs) have started to integrate service users' health and social care records more broadly, with Camden CCG being one of the local commissioners to pioneer this 'Integrated Digital Record' approach.[71] This allows authorised health and social care workers to access information relevant to their role.

Shared resources

Beyond individual service user data, some respondents mentioned shared resources such as Directory of Healthy Living Services being made available and distributed to all staff in a CMHT.[45, 46] However, this required continual monitoring and updating by dedicated person, so while initially successful it was not considered sustainable.

5.2. Shared protocols (10 studies)

Despite noting difficulties around dissemination, communication, and 'territorialism' relating to the use of shared protocols, the Mental Health Foundation inquiry was broadly supportive of such protocols within and between the organisations that support people with mental health problems.[27]

Responsibility and accountability

Prior to February 2014 QOF payments were used to incentivize primary care providers to undertake annual health checks in people with SMI. However, since then a new CQUIN incentive has placed greater emphasis on mental health trusts to monitor and improve the physical health of SMI service users while supporting and facilitating closer working relationships between specialist mental health providers and primary care.[16] The first indicator of the CQUIN requires cardiometabolic parameters (such as smoking status, lifestyle, body mass index, blood pressure, glucose regulation, and blood lipids) be collected, reported, and treated according to NICE guidelines through appropriate referral where necessary. The second indicator requires that an up-to-date care plan (incorporating diagnoses, medications, physical health conditions, and recovery interventions) be shared with the service user's GP.

A major theme to emerge from the literature and advisory group was the importance of responsibility and accountability. Two field experts felt that there is currently insufficient clarity about who is responsible for the physical health needs of people with SMI. Both mentioned the physical health care of SMI service users falling to secondary care for the first 12 months post-diagnosis, followed by (where clinically appropriate) transfer of responsibility to primary care, in line with the shared care arrangements outlined in NICE quality standard QS80.[72] However, several respondents also mentioned an ongoing lack of clarity and/or disagreement about roles and responsibilities ("Everyone thinks it is someone else's business"). While some of this confusion may

be attributable to changes in the incentive structures, the wider literature suggests that maintaining absolute clarity about who is responsible for each aspect of physical health care is difficult but crucial to the success of integrating physical and mental health care.

Existing protocols

The CQUIN for physical health in mental health mentions the 'Lester' resource for physical health assessment in secondary care.[73] This tool provides a framework for the assessment and management of the cardiometabolic health in people experiencing psychosis and schizophrenia. It provides clear guidance on necessary measures and their timing, thresholds indicating the need for intervention, specific interventions or guidance to be implemented, and target outcomes. However, it is not prescriptive about who is responsible for monitoring service user health and effects of antipsychotic medication beyond the requirements of the NICE quality standard (i.e. psychiatrist for 12 months or until condition has stabilized, primary care thereafter under shared care arrangements). The European Psychiatric Association, European Association for the Study of Diabetes, and European Society of Cardiology have previously published a joint position statement outlining a similar cardiovascular risk management protocol, though with greater emphasis on psychiatric coordination of care.[53]

NHS Improving Quality is currently piloting a national roll-out of an updated 'Lester 2014' resource. The pilot evaluation sites intend to use the Lester tool as the basis for integrating care through improved record keeping, data quality and communication both within Trusts and with primary care and the community.[64] A final report of the results of this pilot is due in December 2015.

The charity Rethink Mental Illness in collaboration with the Royal Colleges of GPs, Nurses, and Psychiatrists has responded to the CQUIN with an Integrated Physical Health Pathway, which broadly outlines the responsibilities of primary and secondary care in relation to initiation of treatment or admission to inpatient setting, CPA review, and annual health checks.[74]

A number of initiatives have aimed to set out the responsibility of each organization (or part of organization) in meeting the physical health needs of people with SMI. For example, Manchester Mental Health and Social Care Trust has piloted a multi-component intervention that included joint action plans for the physical health management of service users.[45, 46] The main components of the programme included: (1). A time-protected Community Physical Health Co-ordinator (CPHC) role; (2) Regular multi-disciplinary team meetings between the CPHC and GP practices to establish shared care with the local CMHT; (3) Identification of training needs amongst the CMHT staff and delivery of appropriate training to improve capacity to address physical health needs and support lifestyle changes; (4) Regular physical health assessments delivered in a community setting by CMHT; (5) Increased utilisation of existing physical health resources though a collaborative training day for CMHT and community lifestyle service staff. One of the key enablers for change identified by the authors was standardisation, which included implementation 'ingredients' such as a clearly defined CPHC job description and a flowchart of responsibilities; a defined process for identifying service users to raise for discussion at the multidisciplinary meetings; joint action plans documenting who is responsible for each action agreed at multidisciplinary team meetings; a clinical guidance document to assist Care Co-ordinators carrying out physical health assessments; and the previously mentioned lifestyle services directory being made available and distributed to all CMHT staff via the intranet.

A recently published survey of Australian mental health nurses attitudes toward the introduction of a specialist 'Cardiometabolic Health Nurse' role identified concerns about "muddying the waters" around roles and responsibilities, possibly increasing the risk of mental health nurses believing that physical health must be "someone else's business".[55] This suggests that structured supportive measures such as those employed in the Manchester CPHC pilot should be considered by any model seeking to reorganise the integration of physical and mental health services.

5.3. Joint funding and commissioning (8 studies)

The Mental Health Foundation report concluded that separate funding streams hinder integrated care, while pooled funding and services commissioned across boundaries increase the likelihood of service users receiving better care.[27] A recent review of 38 schemes that integrated health and social care funds challenged the assumption that integrated funding leads to better health outcomes and lower costs. Rather improved integrated care tends to uncover unmet needs, with total care costs likely to rise. Nevertheless, better integration may still offer value for money if additional costs are offset by improvements in quality of life.[75]

Much of the US literature has focused on overcoming funding barriers in the provision of collaborative stepped care. This has recently included the provision of integrated primary care services for people with SMI within Community Mental Health Centre (CMHC) settings, funded through the SAMHSA PBHCI programme. However, alternative administrative arrangements can include global payment systems for physical, mental, and dental care for Medicaid beneficiaries (via coordinated care organisations (CCOs)) and self-contained systems (Veterans Health Administration, Department of Defense, private insurers).[26, 51, 57] While the organization of services may vary across PBHCI grantees, receipt of funding is contingent on CMHCs establishing a formal link with a primary care partner.

Some of the problems noted in the US literature – such as insurance companies refusing to pay for lipid panel orders for service users not taking second-generation anti-psychotics[43] – may not be directly relevant to UK, but such observations highlight how fragmented funding can undermine the implementation of integrated care programmes.

Several advisory group field experts discussed funding issues related to the integration of Healthy Living Services for people with SMI. One such existing service comprises dietitians, physiotherapists, and healthy living advisors who provide advice and support (on healthy eating, physical activity, smoking cessation, sensible alcohol use) for service users in inpatient units. In addition, a Health Improvement Specialist oversees public health work within the trust and supervises the healthy living advisors. The latter role is partly supported by local authority Public Health funds. The field expert considered commitment from both health and Public Health arms necessary to support and fund such a model, given the health inequalities in this population and the need for prevention as well as intervention. This was echoed by another respondent who noted that Public Health England might also have a significant role to play in terms of health needs assessment for this population. In the current NHS commissioning structure, local secondary care, community, and mental health services are typically funded through local CCGs, whereas local public health services are supported

by Local Authority funding. Close cooperation of local (and possibly national) commissioners will be necessary to facilitate the kind of Healthy Living Services described here.

In July 2014, NHS England announced a new integrated and personal commissioning (IPC) approach to providing care for people with complex needs, including those with significant mental health needs. IPC aims to move the balance of spending power to the individual, in terms of people being able to shape their own health and social care delivered (as appropriate) by various combinations of local authority, NHS, and voluntary sector providers. The success of this approach will depend to some extent on the ability of individuals with SMI to negotiate their own integrated care. As noted by the Mental Health Foundation, arrangements will be needed to ensure that disadvantaged individuals are able to benefit from IPC, to avoid the risk of further exacerbating their experience of inequality.

5.4. Co-location of services (19 studies)

The Mental Health Foundation inquiry looked at evidence on community-located psychiatric services, mental health professionals in primary care, and merging of entire Trusts or funding bodies. It concluded that the co-location of primary care and specialist mental health staff could provide significantly improved integration of care for people with mental health problems, but only if the staff understand their roles and responsibilities and work willingly and collaboratively together,[27] emphasising that people rather than organisational systems or structures are primarily responsible for the successful integration of care.

Much of the published evidence on co-located care identified through this rapid review was concerned with the primary care professionals providing clinics in community or inpatient mental health settings.[31, 36, 40, 51, 57, 62, 66, 68] However, these might also be considered 'liaison' services that happen to be co-located; other publications have described similar clinics within virtual "Health Home" organisations where co-location is not strictly necessary.[61] Therefore issues relating primarily to liaison are discussed later in this section.

Where factors relating to co-location were discussed, these broadly supported the Mental Health Foundation conclusions around staffing, highlighting the need for willing, interested, committed and passionate staff[66] plus commitment from leaders and administrators.[36] These themes recurred repeatedly in both the literature and our discussions with field contacts and are further discussed later in this report.

In addition, some studies highlighted the need to plan for and provide sufficient physical space for any primary care services to be located in a mental health clinic.[57, 60] Others highlighted the need for co-located care sites to be both highly visible and easily accessible, including open access arrangements that allow walk-in care for people with SMI.[40, 57]

5.5. Multidisciplinary teams (19 studies)

As acknowledged by the Mental Health Foundation inquiry report, the principles of multidisciplinary care are already well established in mental health services through the use of CMHTs and the CPA.

CMHTs can include professionals such as psychiatrists, psychologists, community psychiatric nurses (CPNs), social workers, and occupational therapists. Assertive Outreach and Crisis Teams also typically involve multidisciplinary team work. In addition, healthy lifestyle services may include healthy living advisors, dietitians, physiotherapists and health improvement specialists, whose work may be further supported by pharmacists (for example, through prescribing of nicotine replacement therapies).

Communication and relationships

Though effective communication between multi-agency health professionals has long been acknowledged as necessary to improve the physical health of people with SMI,[2] both field experts and service users told us that communication often remains poor, particularly between primary and secondary care. Similarly a survey of Australian nurses taking part in boundary-crossing roles emphasized the importance of a strong relationship between the coordinating mental health nurse and GPs.[54]

One service user described regular physical health checks at a Clozapine Clinic, which she felt could be used to provide relevant advice on smoking cessation and/or weight loss, either on site or through referral to relevant Healthy Lifestyle Services. However these regular physical checks were solely focused on drug monitoring and such opportunities were missed. She also noted an apparent absence of information sharing between psychiatrist, CPN and GP.

The previously mentioned Manchester Mental Health and Social Care Trust has pilot programme noted how the role of an overall CPHC could be used to facilitate effective communication and collaboration between services. The CPHC would hold regular multi-disciplinary team (MDT) meetings with GP practices (involving at least a GP, Practice Manager /Administrator, Practice Nurse/ Health Care Assistant) to establish shared care with the local CMHT. The CPHC would co-ordinate each meeting with the lead GP, obtaining relevant client info from care co-ordinators in the CMHT, capturing actions, and then feeding back to the care co-ordinators and consultants. In addition, the CPHC would hold a definitive list of lifestyle services and liaise with Practice Managers and GPs in between MDT meetings. Among the various training needs identified for CPHCs, the authors suggested training in conflict management, facilitation, negotiation, and physical health management would enable MDT meeting success.[45, 46]

Resources

A multidisciplinary 'lifestyle medicine programme' designed for young people with psychosis and bipolar disorder under the care of Worcestershire Early Intervention Service and South Worcestershire Recovery Service is currently being evaluated as part of the NHS Improving Quality 'Living Longer Lives' programme.[49] This was based on an existing Australian model identified in through our searches.[48] The 12-week 'Supporting Health And Promoting Exercise' (SHAPE) education and exercise programme includes a baseline physical health assessment, followed by group health education sessions on healthy eating, smoking cessation, substance abuse, dental care, sexual health and stress management.[49] Participants also receive weekly individual sessions with a dietician and an exercise physiologist plus group cardiovascular exercise sessions and advice on how to access these locally. 12-month gym membership to a local university gym is provided, along with access to peer support to help with goal setting, one-to-one encouragement and fitness training or taking part in team sports. Unlike other interventions aimed at improving the physical health of people with SMI

identified by this rapid review, this programme involves the Early Intervention service working in partnership with organizations outside the health and social care services (principally with a local University gym and wellbeing centre). Should the pilot model prove effective, its wider implementation is likely to rely on the availability of local health and fitness organizations and their willingness to engage in partnership with mental health service providers.

A randomized trial of an integrated care clinic staffed by a nurse practitioner, part-time family practitioner, and nurse case manager within a VA mental health clinic in the United States considered the provision of additional staff resources to improve access and adherence to care (case manager outreach, extra appointment time, scheduling flexibility) to be key to improved outcomes.[51]

5.6. Liaison services (17 studies)

The Mental Health Foundation inquiry was strongly supportive of the concept of liaison services – both psychiatric liaison services in physical health care settings and physical health care in mental health settings.[27] Also, advisory group service users told us that they would like to know there is someone with responsibility for the physical health needs of SMI service users, particularly in the inpatient setting.

One advisory group field expert described the emergence of physical health clinics in the NHS intended to meet NICE recommendations on physical health monitoring and screening for SMI users in secondary care. We also found several published descriptions of primary care clinics or placement of physical health practitioners in inpatient[50, 68] and outpatient[28, 51, 55-57, 62, 66] mental health settings. While the US PBHCI model typically involves the placement of primary care specialists in behavioural health facilities, this can also take the more indirect form of consulting primary care practitioners supporting psychiatrists who provide medical care for common conditions (hypertension, diabetes, dyslipidemias).[57] Field experts also described existing services such as dedicated GP sessions on forensic wards and in-reach specialist diabetes nurses.

One feasibility study noted that service user anxiety about seeing someone other than a psychiatrist could be a barrier to the implementation of a weekly primary care service on acute psychiatry wards and highlighted the importance of the primary care doctor being perceived as professional, kind, and understanding.[68]

One US study described a half-time primary care clinic within a community mental health clinic, staffed by two nurse practitioners and one family physician. Referral was informal, with a mental health provider directly placing their service user on the clinic schedule or discusses the referral with the primary care nurse liaison. Though referral criteria were not formalised, the aim was to capture people with a chronic medical illness who are unable to navigate a traditional primary care setting.[62]

5.7. Navigators (15 studies)

One of our advisory group field experts noted that continuity of care is particularly important for the SMI population, but noted that such continuity is becoming increasingly rare within primary care. In

response to observations of this nature, several models have proposed the role of a single named individual who can help people navigate their way through complex systems.

Among these is the existing CPA model, which aims to ensure people with mental illness receive a care-coordinator who can arrange a full assessment of both their health and social care needs and then help develop a plan to address those needs. Care coordinators may be a CPN, social worker, or occupational therapist.

While navigators or care coordinators are generally thought to negotiate the boundaries between health, social care, education, and housing sectors, this role can be just as important for helping people with SMI negotiate boundaries *within* heath care, between physical and mental health services, or between primary and secondary care. At the core of the Manchester Mental Health and Social Care Trust pilot was the CPHC role. In the pilot, this CPHC role was undertaken part-time (0.4 WTE) by Care Coordinators already working within the CMHT. The authors stated that it was essential for the CPHCs to also continue in their Care Coordinator role in order to retain their skills, continue to have contact with service users and colleagues, and to allow access to relevant meetings and discussions with other CMHT staff. CPHCs also felt that respect was a key facilitator for gaining the trust and support of other Care Coordinators.[45, 46]

The Manchester model differs from some other 'navigator' programmes in the literature in that the CPHC role was deliberately focused on facilitating communication between services without the additional responsibility of undertaking physical health checks or other clinical tasks. By contrast, a US evaluation of a transitional care ("TCare") model for people with SMI being discharged from hospital to community care employed a psychiatric nurse practitioner (trained in medical and psychiatric assessment/treatment/prescribing) as the navigator.[63] The intervention consisted of ten components: (1) coordination of care by a psychiatric nurse; (2) a plan developed prior to hospital discharge; (3) home visits from the nurse for approximately 90 days post-hospital discharge and available 7 days a week; (4) coordination with physicians in the community, including accompanying service user on visits; (5) inclusive focus on health needs of the service user; (6) involvement of both service user and family in care through education and support; (7) early detection and quick response to health care risks and symptoms; (8) service user, family caregiver, and providers functioning as a team; (9) collaboration of nurse and physician; and (10) information sharing among all team members. Interestingly, this evaluation noted difficulties in engaging mental health case managers with the TCare programme. The authors attributed this to case managers' heavy caseloads forcing them to focus on dealing with crises at the expense of clients who are seen to be already receiving some form of service. This observation would appear to support the idea that physical health navigators should have a role that can be influential in the wider coordination of services for people with SMI.

A US pilot programme, "The Bridge" aimed to use a time-limited peer health navigator intervention to give clients the skills and experience to self-manage their health care activities to the greatest degree possible.[30, 42] The intervention comprised four components: (1) service user health assessment and health navigation planning; (2) co-ordinated linkages/activities to help service users navigate the health care system and follow-up/adherence to treatment plans; (3) consumer education, including: partnering with medical care providers; treatment compliance; self-advocacy and interaction skills; health and wellness; benefits and entitlements (4) cognitive-behavioural

strategies to support health care use behaviour change and behaviour maintenance. The six-month intervention included a four-month phase of intense contact between service user and navigator, followed by a less intensive 'monitoring' period. Though the intervention appeared to improve some aspects of physical health and healthcare utilization, the pilot included only a single peer navigator, who had been involved in the intervention development, and received both extensive training and close supervision. There are a number of questions about whether such a model could be generalisable or sustainable in addition to ethical concerns around duty of care and accountability. However, particularly in the US, 'peer navigation' remains an area of interest.[52]

An advisory group service user contributing to this rapid review described her CPN providing the co-ordinating role between mental and physical health care, particularly in terms of support and signposting to mainstream services. However, she also described being dropped from her dental practice because of missed appointments due to mental illness episodes. She had to be forceful in explaining the difficulties, but remains without dental care for the time being. While she feels confident at speaking out when things are not right, not everyone is able to do this. This raises questions about the extent that navigators such as Care Coordinators in the CPA model should engage in advocacy for service users, particularly when dealing with services less accustomed to SMI. One study of the CPA found that failings were often due to the Care Coordinator having insufficient authority to exert control over other care professionals to ensure care is properly integrated.[76]

5.8. Research (6 studies)

A review of factors that influence integrated health and social care published by the Social Care Institute for Excellence[77] concluded:

> "The evidence base underpinning joint and integrated working remains less than compelling. It largely consists of small-scale evaluations of local initiatives which are often of poor quality and poorly reported. No evaluation studied for the purpose of this briefing included an analysis of cost-effectiveness. There is an urgent need to develop high-quality, large-scale research studies that can test the underpinning assumptions of joint and integrated working in a more robust manner and assess the process from the perspective of service users and carers as well as from an economic perspective."

The Mental Health Foundation inquiry echoed these conclusions, recommending that more research into how best to support people with complex, co-morbid needs is required that addresses both effectiveness and economic assessment of integrated care models.[27]

Similarly, most of the programmes identified through our update searches and contact with field experts have either not been evaluated, or only evaluated on a small-scale within a local context.

Future evaluations of programmes to improve the physical health of people with SMI will need to have sufficiently long follow-up to collect meaningful physical outcomes, and/or collect appropriate process and surrogate outcomes. One advisory group field expert described developing a bespoke outcome measure based on the Theory of Planned Behaviour to allow Healthy Living Advisors to measure impact upon service-users' attitudes towards healthy living, perceptions of social pressure/support and perceived barriers to healthy living.

5.9. Reduction of stigma (8 studies)

Attitudes and beliefs of staff

Both service users and field experts from our advisory group reported that GPs and non-mental health specialists can appear reluctant to tackle mental illness. Some attributed this to the perception that the SMI population can be "troublesome" or excessively difficult to deal with, generally because of non-attendance of appointments and non-compliance with treatment advice. The published literature has noted that primary care practitioners may be uncomfortable and find it difficult to deal with the complexity and/or the slow pace of working with people SMI relative to the wider primary care population.[57]

Concerns about stigmatizing attitudes and behaviours were also raised in relation to administrative staff and processes. A service user suggested that receptionists and booking systems in mainstream services need to be more sensitive to the needs of SMI service users when arranging appointments. Examples included difficulties with feeling tired due to medication yet having to phone first thing in the morning to get an appointment at the GP, and having to complete forms to declare a diagnosis of SMI and/or antipsychotic medication use. A clinical expert described instances where physical health services for people with SMI were not regarded as "core business" by practice management.

Consequences of stigma

An issue of major concern raised both in the literature and among respondents is 'diagnostic overshadowing', whereby signs and symptoms of physical illness can be misattributed to mental illness, leading to underdiagnosis and mistreatment of the physical condition.[27]

Even within mental health services, an over-emphasis on managing psychosis may mean also that physical health concerns are addressed too late. An advisory group field expert noted that around half of service users have an increase in body weight of more than 7% in first year of treatment, with other adverse changes being possible within days of antipsychotic initiation. He suggested that a preventative approach should be taken to physical health in SMI, similar to the way in which early intervention is used to avoid crisis and hospitalisation.

When discussing the possible adverse effects of antipsychotic medication with service users, both service users and field experts commented on the need for prescribers to balance their concerns about the risk of non-compliance with the longer-term consequences of not discussing adverse events.

One area of physical health that a service user considered to be seriously neglected in people with SMI is sexual health. Here, she noted that the focus is on risk and safeguarding rather than tackling positively the effects of SMI and medications on relationships and sexual activity, starting a family or bringing up children. CPNs and other health professionals can feel uncomfortable in addressing sexual health issues (and some may even be resistant to the idea that this is important to people with SMI).

Reducing stigma

The Mental Health Foundation report recommends staff training and education to counter the potentially dangerous discrimination that can arise from diagnostic overshadowing, and calls for more research on the potential benefits of interpersonal contact with people with SMI as a way of reducing stigmatising attitudes and behaviour among non-mental health care providers.[27]

Of the recently published literature, only the 'SHAPE' programme described its intervention in terms of stigma overtly, where access to a university gym was partly intended to allow young people with SMI to interact with other young people in a safe environment without feeling stigmatised.[49]

5.10 Other factors emerging from the evidence

Staff, skills and training

The Mental Health Foundation report identified cross-boundary inter-professional training and education as essential for the better integration of physical and mental health care.[27]

The need for training and education to foster appropriate skills and attitudes among health care staff was a major theme to emerge from both the recent literature and our discussions with field experts and service users. A review by Health Education England sets out a number of recommendations relevant to this area of our review in relation to the future education and training of nurses and care assistants in healthcare services.[78]

Basic clinical training

Several respondents mentioned the need for improved general knowledge of mental health issues in general practice and nursing professions, with one service user emphasising the importance of including mental health in undergraduate nursing degrees, dental training and other clinical professions. This echoed the Mental Health Foundation's recommendation for basic education on the indivisibility of mental and physical health.[27] Authors have noted the need for ongoing reinforcement of the need for integration with staff alongside continuing professional development.[27, 57]

Training and education for primary care practitioners

As mentioned previously, advisory group service users reported that not all GPs and nurses appear equipped to deal with the needs of SMI, with the impression that the system becomes less co-ordinated/integrated at the point of discharge from their CPN to GP care. A publication by the now defunct NHS London Health Programmes suggested that competence and capacity in could be improved both through the commissioning of formal training and ongoing supervision and coaching of primary care staff by mental health specialists. This proposed that frontline staff in access points such as A&E departments and GP surgeries should undertake training so that they have a basic awareness of mental health problems and communication skills that avoid exacerbation of mental health crises.[59]

A primary care field expert also noted that GPs and practice nurses in primary care training needed to deal with basics and sensitivities in SMI. One proposed example of a relevant training package was the "Practice Nurse Masterclass" programme for north east and central London that is designed

to: improve case identification and signposting in primary care to support earlier intervention; enable safe discharge from secondary to primary care; improve communication between primary and secondary care; and decrease the stigma of mental illness.[79]

Training and education for mental health practitioners

Insufficient training has also been identified as a barrier to mental health service providers being able to take on more responsibility for medical care.[67]

One advisory group field expert described research undertaken within their Trust that identified a number of staff-related barriers to improving physical health for people with SMI, including: Knowledge (e.g. a lack of knowledge of recommendations); skills (e.g. a lack of physical health care skills; difficulty raising topics with service-users); and beliefs about capabilities (e.g. a lack of confidence in providing physical health care). In particular, the absence of confidence among many mental health practitioners about their own physical health care skills – and the need for training to address this – was raised by several respondents. One field expert mentioned mental health staff feeling uncomfortable and worried about accountability, attributing this to the absence of relevant physical health education as part of specialist mental health nursing training.

Acting in concert, the barriers described above can result in serious failures of care. For example, one service user described the experience of a friend with SMI who had undergone surgery and was later sectioned. With the District Nurse not attending to her on the mental health inpatient ward, and the mental health nurses not sufficiently experienced or confident to attend to this specialised type of physical health need, the service user had to refer to YouTube to find out how to change her own surgical dressing.

One proposed solution included implementing mandatory physical health education sessions provided by Physical Health Nurses for all inpatient and community staff (including care coordinators), plus a collaborative training day for CMHT and lifestyle service staff. However, it has been observed that accommodating additional training can be difficult for CMHT staff with heavy case-loads.[45, 46, 57]

Several of the programmes identified through our searches supplemented training with some form of clinical guidance or decision support resources related to the physical health of people with SMI.[45, 46 28, 29, 32, 34, 35, 38, 39, 43, 55, 56, 58]

Organisational culture and environment

The second underpinning essential of integrated care identified by the Mental Health Foundation was having the right people in the organization,[27] including leaders who will drive forward integration at a strategic level. This was supported by more recent published evidence that emphasized the importance of commitment from key leaders and administrators,[36] and the development of a supportive organizational culture.[45, 46]

In part, this might be achieved by obtaining staff "buy-in" and commitment through raising awareness and appropriate incentivisation.[27] One field expert noted that many of the issues in this area are similar to the introduction into primary care of incentivised diabetes care in the 1980s (i.e. strong emphasis on preventing cardiovascular disease, developing appropriate education and training for nurses) and that similar steps should be taken to adapt the existing culture.

Elsewhere, authors have highlighted the need for organisations to be flexible, acknowledging that practitioners need time to collaborate on service user care.[36, 57] This is particularly the case in clinical settings with heavy caseloads.[43] For example, the CPHC pilot described care coordinators' lack of time as a barrier to performing community physical health assessments. It identified management commitment to protect time and resources, both for physical health assessments and the wider CPHC role, as key implementation ingredient.[45, 46]

The pilot of a one-morning-per-week physical care clinic for mental health service users in a Canadian secondary care setting described an initial lack of administrative and institutional support due to a perceived increase in financial cost, unnecessary co-location, and absence of a specified/earmarked budget.[66] The authors noted that, for integrated care to be successful, senior decision makers need to retain a system-wide and integrated vision of service delivery and resource allocation. While the funding arrangements in the UK NHS differ from the Canadian setting, similar considerations apply.

One factor not explicitly addressed in the literature is the impact of the physical environment on the physical health of people with SMI. Reflecting on her experience as an inpatient, one service user described an environment that was "toxic to physical health". This included very poor quality and highly calorific food (e.g. cream cakes) that could exacerbate medication-induced weight gain, a lack of opportunities for exercise (e.g. broken exercise bike on the inpatient ward), and outdoor activity being restricted and geared towards those who smoke (through smoking breaks). This demonstrates how the culture and environment in one part of the service can unintentionally undermine efforts to improve physical health delivered elsewhere.

6. Conclusions

This rapid review is intended to give a snapshot of the approaches most recently used to address the physical health needs of people with SMI since two wide-ranging reviews of integrated in care were published in 2013. We identified the approaches by searching the international published literature, and speaking with UK service users and field experts.

What type of models currently exist for the provision of integrated care specifically to address the physical health needs of people with severe mental illness (SMI) when accessing mental health care services?

The majority of service models identified in this review were multi-component programmes incorporating two or more of the factors that have previously been identified as facilitators of integrated care: information sharing systems, shared protocols, joint funding/commissioning, co-located services, multidisciplinary teams, liaison services, navigators, research, and reduction of stigma.

The majority of programmes were in community and/or secondary care mental health settings in the UK, North America, or Australia.

Programmes rarely focused on a single delivery component, rather most described the complex interaction of multiple components. However, few programmes were described in detail and fewer still were comprehensively evaluated. This raises questions about the replicability and generalisability of much of the existing evidence.

One of the few clearly described and evaluated programmes was that piloted by Greater Manchester CLAHRC, which evaluated the impact of introducing a core time-protected Community Physical Health Co-ordinator (CPHC) role to improve communication between primary care and CMHTs. Other ingredients of the programme were multi-disciplinary team meetings, targeted training, physical health assessments and shared information resources. The team behind this programme has produced guidance for future implementation that other sites could use to replicate or further refine this promising approach.[45, 46]

Many other variants of the 'navigator' model have been described in the literature, though where evaluations were available, these tended to be somewhat superficial with little clarity about implementation. However, the available evidence suggests that any individual tasked with co-ordinating care needs to be empowered with the authority to influence other care professionals. While peer (as opposed to professional) navigator models have also been proposed, both the ethics and sustainability of such approaches need to be considered carefully.

What are the perceived facilitators and barriers to implementation of these models?

As has been previously noted, a fundamental requirement for successful integration of physical and mental health care is having the right people with the right skills and attitudes in place. The Mental Health Foundation emphasised the need for strong leaders, along with committed and willing staff, supported by cross-boundary inter-professional training and ongoing professional development.[27]

Our findings further underline the importance of considering the impact of any planned structural changes on the attitudes, skills and behaviours of the people interacting within and across health organisations, be they health professionals or service users. Many of the factors that authors,

experts and service users identified as facilitators were those that either empowered individuals and/or minimised the effort needed for individuals to provide integrated services.

Wherever possible, training for mental health professionals who fail to address the physical health needs of their service users should aim to increase self-confidence in their own skills, and give greater clarity about their responsibilities in relation to physical health. Care co-ordinators/navigators may have an empowerment role by providing advocacy for service users in certain settings, and might themselves benefit from greater formal authority over care integration. All health professionals will need time to undergo training and to collaborate on service user care, which can be difficult in clinical settings with heavy caseloads. Management commitment to protect time and (where necessary) resources for such activities has been raised as a potentially worthwhile investment.

Factors such as integrated information systems and individual electronic records have yet to be properly implemented due to various technical, legal, and organizational barriers. However, these remain the most promising means of simplifying communication and collaboration among professionals in order to provide care for service users across multiple services. We encountered potentially useful local innovations that could not be implemented because of IT incompatibility or inaccessibility issues. Improved communication and understanding between clinical, administrative and technical staff can be crucial in overcoming such barriers to innovation.

Any arrangements that reduce the level of effort necessary to deliver integrated services on a day-to-day basis should be welcomed. The literature identified simple measures such as informal referral procedures, high visibility of sites, and open access as facilitators of physical health clinics for people with SMI in mental health settings.

Multidisciplinary teams form an important role in the provision of mental health services, and are ever more likely to continue to do so in the future. However, simply having an appropriate skill mix within a team does not appear to be sufficient for providing integrated care. There often appears to be broad agreement about what needs to be done to improve the physical health of people with SMI, but not who should be responsible. Within multidisciplinary teams, there must be absolute clarity about the aspects of care for which individuals in the team are responsible and accountable, supported by effective communication between team members. We heard several instances where opportunities to intervene have been missed due to poor communication between providers.

Organisational incentives alone are likely to be inadequate unless individuals have the appropriate knowledge, skills, resources, and environment to support them. Shared protocols, joint action plans and decision support tools such as the Lester resource and Rethink Integrated Physical Health Pathway are promising approaches for clarifying responsibilities and supporting record keeping and communication across boundaries. NHS-specific evidence in this area is expected soon.[64]

Field experts and service users described several ways in which the existing organization of services, and often unconscious assumptions, attitudes, and behaviours of health care staff, can be stigmatizing to people with SMI. Concerns such as inattention to the sexual health in people with SMI and inpatient environments conducive to poor physical health do not appear to have been explicitly tackled in the published literature identified in this review. These important concerns need to be addressed.

Greater prioritization of physical health needs to be embedded in the culture and environment of mental health services. This will require clear strategic leadership and commitment from staff at all levels, backed by appropriate funding arrangements.

How do models implemented in practice compare and contrast with those described in the literature?

In 2013, the Mental Health Foundation concluded that good integrated care appears to be the exception rather than the norm, with isolated pockets of good practice, but overall dissatisfaction with progress being made across the UK.[27] Our field contacts gave the impression that this remains the state of affairs in 2015, describing a small number of high-profile programmes as well as their own efforts to address the physical health needs of people with SMI locally.

The sustainability and effectiveness of these initiatives and models described in the literature are not known. However, there are several high-profile initiatives ongoing and others that have been announced, which may indicate increased activity to progress the implementation of integrated care. It will be some time before these initiatives are fully implemented and even longer before their impact is established.

Can we identify high priority areas for either further primary research or a full evidence synthesis?

All of the practitioners we spoke to were dedicated to improving their local service with regard to meeting the physical health needs of people with SMI, but not all had plans to formally evaluate or widely disseminate these efforts. This makes it difficult for lessons learned locally to be shared across institutions and the health service more generally.

Most published evaluations were small in scale and/or poorly described. Ideally, future evaluations of efforts to improve physical health care for people with SMI should be on a larger scale and use meaningful, validated measures of success. Future evaluations should also build on the existing literature to learn lessons and prevent research waste through further unnecessary duplication of effort. Much of the recent literature consists of largely independent interventions/programmes based on a similar set of underlying ideas. Replication of locally successful programmes in different settings is legitimate, but all evaluations need to be clear about which outcomes, facilitators, and barriers are likely to be context-specific and which might be generalisable. There is scope for additional research on understanding why efforts to integrate physical health care needs for people with SMI succeed or fail, using qualitative or mixed-method techniques.

Wherever possible, service users should be involved in the design, conduct, and evaluation of programmes as they will provide crucial insights into current service provision that might not be visible to practitioners, decision makers or researchers. For example, service users on our advisory panel identified the need to consider: how existing appointment booking arrangements might be improved for patients with SMI; how mental health inpatient environments might be made more conducive to maintaining good physical health; and how to attend to the sexual health of people with SMI. Such concerns have received very little attention in the recent literature.

Outputs from ongoing pilot evaluations by NHS Improving Quality (now NHS England's Sustainable Improvement Team) alongside the New Care Models Programme vanguard sites and the Integrated

Personal Commissioning demonstrator sites should also inform any future research efforts in this area.

On the basis of the evidence identified in this systematic review, a full evidence synthesis on this topic would not appear to be feasible or appropriate in the immediate future. In addition to the heterogeneity and poor reporting of many studies, any future overview of the evidence on integrated care for people with SMI would need to take into account the various developments in this area, such as the new five-year Mental Health Strategy for England, new QOF indicators for 2016/17, regional devolution, and ongoing work on approaches such as the Integrated Digital Record.

Limitations of the rapid review

This rapid review provides a snapshot of the literature on integrating the physical health needs of people with SMI published since 2013. As might be expected given the narrow timeframe, the volume of literature identified is relatively small. More significantly, much of this literature lacked the depth of description necessary to acquire new insights beyond those summarised in the Mental Health Foundation's "Crossing Boundaries" inquiry. Much of the available literature was descriptive and, with the exception of the Manchester CPHC pilot, much of the evaluative literature failed to provide additional useful information on barriers and facilitators. In addition, while we emphasised wherever possible aspects of the literature that were most novel, interesting, or relevant to implementation, our commitment to retaining an objective overview prevented us from speculating or greatly extrapolating from the limited available evidence. Consequently, the weight of attention given to specific interventions in this synthesis was at least partly determined by the amount of available information rather than the inherent value of the intervention.

In order to help interpret and contextualise the literature, we incorporated the input of an expert advisory panel made up of health professionals and service users. While the insights they provided were extremely valuable, our advisory group were not necessarily representative. For example, all our experts were based in England, so this report has limited information on the NHS contexts specific to Scotland, Wales and Northern Ireland. Conversely, this rapid review drew on the literature from a diverse range of settings, some of which might not be considered comparable to the NHS. However, we believe that awareness that certain barriers (such as difficulties in implementing web-based registry software) can transcend different countries and health care systems is valuable.

While our focus was to identify the literature relating to people with physical health needs at point of access in the mental health setting, we found that the initial point of access is often not quite so clear cut, especially when patients are invariably referred back and forth between secondary and primary care.

Wherever possible in this rapid review, we have tried to follow the guiding principles of transparency and objectivity that underpin traditional systematic review methodology. However, there might also be an argument for undertaking a more interpretivist approach to exploring this literature. Very few of the interventions described in the literature had any explicit theoretical basis themselves, but it might have been possible to code these studies with specific the aim of developing higher level concepts and theory. Equally, aspects of this literature could be interpreted in light of several

existing theories of behavior change. Such an investigation was outside the scope and resources of this rapid review.

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Contribution of authors

All searching was conducted by Melissa Harden (Information Specialist), who also wrote the search sections of the report and commented on the draft report. Study selection, data extraction, critical appraisal, and write up of the report were carried out by Mark Rodgers (Research Fellow, Evidence Synthesis), Jane Dalton (Research Fellow, Evidence Synthesis), and Alison Eastwood (Professor, Evidence Synthesis). Gillian Parker (Professor, Social Policy) and Andrew Street (Professor, Health Economics) provided expertise and advice, contributed to the development of the protocol, and commented on drafts of the report.

Data archiving

All available data can be obtained from the corresponding author. All data will be shared in a way which safeguards the confidentiality and anonymity of respondents.

Disclaimer

This report presents independent research commissioned by the National Institute for Health 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, NETSCC, the Health Service and Delivery Research (HS&DR) programme or the Department of Health. The views and opinions expressed by the Delphi respondents in this publication are those of the respondents and do not necessarily reflect those of the authors, those of the NHS, the NIHR, MRC, CCF, NETSCC, the Health Service and Delivery Research (HS&DR) programme or the Department of Health.

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APPENDIX 1: Field expert contact form

Name:

(This is to ensure we correctly acknowledge your contribution in our final report, if appropriate)

Role:

About CRD

The Centre for Reviews and Dissemination (CRD) is a department at the University of York. One of CRD's funding sources is the Department of Health/NIHR/HS & DR programme which aims to improve UK health service delivery through research. The following project is part of that research.

Project title

Integrated care to address the physical health needs of people with severe mental illness (SMI).

Background

The present focus on improving integrated care for people with mental health needs appears to be from the perspective of access to health services for an acute or chronic physical health condition. Information about the converse of this (i.e. addressing the physical health care needs of patients with severe mental illness at point of access in the mental health service setting) seems lacking.

About this project

The aim of this project is to explore what current provision exists in practice together with mapping the evidence on models of care for dealing with the physical health needs of people with mental health problems at point of access in the mental health service setting.

What we'd like from you

By answering the questions below, as a **field expert** you will be helping us to (a) develop our research and (b) ultimately think about what might be useful to those commissioning and delivering future services.

Questions:

1. What types of models exist (or are emerging) in practice for the delivery of integrated care specifically to address the physical health needs of people with severe mental illness (SMI) when accessing mental health care services?
2. What are the specific components of the physical health services?
3. Where are these services located?
4. When/how are they offered?
5. How likely are these models to be generalisable nationally? (Why/Why not?)

6. What are the perceived facilitators and barriers to successful implementation of these models?
7. How successfully will these models address diversity/inequalities in society?
8. How successfully will these models address parity of esteem between mental and physical health?
9. Is there a plan for evaluation? If so, how and by whom?
10. Further contacts?

Please contact Jane Dalton (jane.dalton@york.ac.uk), Mark Rodgers (mark.rodgers@york.ac.uk) or Alison Eastwood (alison.eastwood@york.ac.uk) if you have any further questions or feedback. We thank you for your time.

June 2015

APPENDIX 2: Service User contact form

Name:

(This is to ensure we correctly acknowledge your contribution in our final report, if appropriate. Please leave this blank if you would prefer to remain anonymous).

Role (e.g., service user):

Type of service you are familiar with:

About CRD

The Centre for Reviews and Dissemination (CRD) is a department at the University of York. One of CRD's funding sources is the Department of Health/NIHR/HS & DR programme which aims to improve UK health service delivery through research. The following project is part of that research.

Project title

Integrated care to address the physical health needs of people with severe mental illness (SMI).

Background

At the moment, attempts to improve integrated care focus on people with an acute or chronic physical health condition being able to access mental health services. Information about the converse of this (i.e. addressing the physical health care needs of patients with severe mental illness who use mental health services) seems lacking.

About this project

The aim of this project is to explore what current provision exists for dealing with the physical health needs of mental health service users with severe mental illness. We will also look for published evidence on different models of care.

What we'd like from you

By answering the questions on page 2, in an **advisory capacity** you will be helping us to (a) develop our research and (b) ultimately think about what might be useful to those commissioning and delivering future services. We do not seek details of your personal experience of services.

We anticipate needing your input just once during the project which started at the beginning of May and should be completed by the end of August 2015. If you would like to, we would welcome your comments on the draft report we write at the end of this project, but it is not necessary for you to do this.

We are very happy to receive your input over the phone or by email. Alternatively, we can arrange to meet (at the University of York) if you prefer.

<u>What we can offer you</u>

We can offer you payment at a rate of £20 per hour for your involvement. We will also cover reasonable travel expenses and related costs (Please note: Accepting payment may affect your tax situation and can be problematic if you are in receipt of state benefits).

Please contact Jane Dalton (jane.dalton@york.ac.uk or 01904 321056) if you have any further questions or feedback.

Thank you for your time.

June 2015

Questions:

1. What types of services are you aware of that specifically address the physical health needs of people with severe mental illness (SMI) when accessing mental health care?
2. To what extent are these services brought together in an integrated (co-ordinated/tailored) way?
3. What are the specific components of the physical health care services?
4. Where are these services located?
5. When/how are they offered?
6. What do you feel are the advantages/disadvantages of existing services?
7. How successfully do you feel existing services cater for the needs of everyone?
8. How successfully do you feel services are providing equal focus on mental and physical health needs?
9. Imagine an ideal integrated care service brought together to address the physical health needs of people with SMI. What would that look like? Consider three things that might make a difference in future.

   1.
   2.
   3.

APPENDIX 3: Search strategies

Database search strategies

Database searches were carried out to update the following systematic reviews:

Bradford DW, Cunningham NT, Slubicki MN, McDuffie JR, Kilbourne AM, Nagi A, et al. An evidence synthesis of care models to improve general medical outcomes for individuals with serious mental illness: a systematic review. *J Clin Psychiatry* 2013;74:e754-e64.

Bradford DW, Slubicki MN, McDuffie JR, Kilbourne AM, Nagi A, Williams JW. *Effects of care models to improve general medical outcomes for individuals with serious mental illness*. Washington DC: Department of Veterans Affairs; 2011

The original search strategies from the above reviews were used, but adapted to fit the inclusion criteria of the current review. Adaptations included the addition of terms for depression to cover the definition of severe mental illness used in the current review and the addition of further terms for integrated care.

MEDLINE

Ovid http://ovidsp.ovid.com/

1946 - May week 3 2015

Searched on 21st May 2015. 680 records were retrieved.

Searches were limited to records added to MEDLINE since 1st January 2013. The Cochrane highly sensitive search strategy for identifying randomized trials in MEDLINE (sensitivity-maximizing version) was used to limit retrieval to clinical trials (lines 55-67).

1   ((serious$ or sever$) adj2 mental$ adj2 (ill$ or disorder$)).ti,ab. (5876)
2   exp Schizophrenia/ (87822)
3   schizophreni$.ti,ab. (89080)
4   exp Bipolar Disorder/ (32800)
5   ((bipolar or bi polar) adj3 (disorder$ or depress$ or ill$)).ti,ab. (21109)
6   exp Psychotic Disorders/ (39605)
7   (psychotic$ or psychosis or psychoses).ti,ab. (46608)
8   (schizoaffective or schizo-affective).ti,ab. (4447)
9   (hypomania$ or mania$ or manic).ti,ab. (13879)
10   mental disorder$.ti. (6128)
11   exp Depressive Disorder/ (84240)
12   Depression/ (81346)
13   ((depression or depressive) adj3 (major or sever$ or serious$ or endur$ or chronic$ or persist$ or resistant)).ti,ab. (43847)
14   or/1-13 (331007)
15   exp "Delivery of Health Care, Integrated"/ (9052)

16   exp Patient Care Team/ (56442)

17   exp Patient Care Planning/ (53238)

18   exp disease management/ (31742)

19   Patient-Centered Care/ (11885)

20   models, nursing/ (11135)

21   "Continuity of Patient Care"/ (15114)

22   Comprehensive Health Care/ (6119)

23   Patient Care Management/ (2494)

24   exp Primary Health Care/ (83718)

25   exp Internal Medicine/ (74152)

26   Family Practice/ (60309)

27   Geriatrics/ (26950)

28   general practice.ti. (17325)

29   (continuity of care or coordinated care or co-ordinated care or co-ordinated program$ or coordinated program$ or team care or team treatment$ or team assessment$ or team consultation$).ti,ab. (5536)

30   (collaborat$ adj3 (care or manage$)).ti,ab. (4109)

31   shared care.ti,ab. (837)

32   ((patient-centred or patient-centered) adj2 (care or manage$ or program$ or service$)).ti,ab. (2584)

33   ((patient-centred or patient-centered) adj2 (policy or policies or model$)).ti,ab. (268)

34   holistic care.ti,ab. (916)

35   (integrat$ adj2 (care or service$)).ti,ab. (7037)

36   (model$ adj2 care).ti,ab. (7914)

37   or/15-36 (397601)

38   14 and 37 (12508)

39   evaluation studies as topic/ (120255)

40   (pre-post or pre-test or pretest or post-test or posttest).ti,ab. (19293)

41   controlled before-after studies/ (37)

42   (before and after).ti,ab. (520777)

43   (before and during).ti,ab. (277889)

44   Non-Randomized Controlled Trials as Topic/ (17)

45   (quasi-experiment$ or quasiexperiment$ or quasirandom$ or quasi random$ or quasicontrol$ or quasi control$).ti,ab. (9253)

46   Interrupted Time Series Analysis/ (37)

47   (time series and interrupt$).ti,ab. (1136)

48   time points.ti,ab. (47741)

49   (multiple or three or four or five or six or seven or eight or nine or ten or month$ or hour$ or day$).ti,ab. (5919691)

50   48 and 49 (33546)

51   "Process Assessment (Health Care)"/ (3172)

52   Program Evaluation/ (48243)

53   39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 50 or 51 or 52 (831939)

54   38 and 53 (822)

55 randomized controlled trial.pt. (394882)

56 controlled clinical trial.pt. (89465)

57 randomized.ab. (291871)

58 placebo.ab. (152257)

59 drug therapy.fs. (1773960)

60 randomly.ab. (205670)

61 trial.ab. (301120)

62 groups.ab. (1310948)

63 or/55-62 (3346399)

64 38 and 63 (4431)

65 54 or 64 (4864)

66 exp animals/ not humans.sh. (4041332)

67 65 not 66 (4862)

68 limit 67 to ed=20130101-20150514 (680)

Key

/ = indexing term (MeSH heading)

exp = exploded MeSH heading

$ = truncation

ti,ab = terms in either title or abstract fields

adj3 = terms within three words of each other (any order)

pt = publication type

fs = floating subheading

sh = subject heading

ed = entry date - date added to the database

MEDLINE In-Process & Other Non-Indexed Citations

OvidSP http://ovidsp.ovid.com/

May 19, 2015

Searched on 21st May 2015. 155 records were retrieved.

1 ((serious$ or sever$) adj2 mental$ adj2 (ill$ or disorder$)).ti,ab. (742)

2 exp Schizophrenia/ (0)

3 schizophreni$.ti,ab. (7295)

4 exp Bipolar Disorder/ (0)

5 ((bipolar or bi polar) adj3 (disorder$ or depress$ or ill$)).ti,ab. (2610)

6 exp Psychotic Disorders/ (0)

7 (psychotic$ or psychosis or psychoses).ti,ab. (3960)

8 (schizoaffective or schizo-affective).ti,ab. (331)

9 (hypomania$ or mania$ or manic).ti,ab. (1186)

10 mental disorder$.ti. (592)

11 exp Depressive Disorder/ (0)

12 Depression/ (0)

13   ((depression or depressive) adj3 (major or sever$ or serious$ or endur$ or chronic$ or persist$ or resistant)).ti,ab. (4727)

14   or/1-13 (16803)

15   exp "Delivery of Health Care, Integrated"/ (0)

16   exp Patient Care Team/ (0)

17   exp Patient Care Planning/ (0)

18   exp disease management/ (0)

19   Patient-Centered Care/ (0)

20   models, nursing/ (0)

21   "Continuity of Patient Care"/ (0)

22   Comprehensive Health Care/ (0)

23   Patient Care Management/ (0)

24   exp Primary Health Care/ (0)

25   exp Internal Medicine/ (0)

26   Family Practice/ (0)

27   Geriatrics/ (0)

28   general practice.ti. (781)

29   (continuity of care or coordinated care or co-ordinated care or co-ordinated program$ or coordinated program$ or team care or team treatment$ or team assessment$ or team consultation$).ti,ab. (623)

30   (collaborat$ adj3 (care or manage$)).ti,ab. (629)

31   shared care.ti,ab. (87)

32   ((patient-centred or patient-centered) adj2 (care or manage$ or program$ or service$)).ti,ab. (528)

33   ((patient-centred or patient-centered) adj2 (policy or policies or model$)).ti,ab. (48)

34   holistic care.ti,ab. (103)

35   (integrat$ adj2 (care or service$)).ti,ab. (1125)

36   (model$ adj2 care).ti,ab. (1138)

37   or/15-36 (4535)

38   14 and 37 (155)

Key

/ = indexing term (MeSH heading)

exp = exploded MeSH heading

$ = truncation

ti,ab = terms in either title or abstract fields

adj3 = terms within three words of each other (any order)

The Cochrane Library

Wiley http://onlinelibrary.wiley.com/

Cochrane Database of Systematic Reviews (CDSR), Issue 5 of 12, May 2015

Database of Abstracts of Reviews of Effects (DARE), Issue 2 of 4, April 2015

Health Technology Assessment Database (HTA), Issue 2 of 4, April 2015

NHS Economic Evaluations Database (NHSEED), Issue 2 of 4, April 2015

Cochrane Central Register of Controlled Trials (CENTRAL), Issue 4 of 12, April 2015

The 5 databases above were searched on 26th May 2015, via the Cochrane Library.

176 records were retrieved in total – 9 from CDSR, 13 from DARE, 3 from HTA, 15 from NHSEED and 136 from CENTRAL. Retrieval was restricted to records published from between 2013-2015.

#1	((serious* or sever*) near/2 mental* near/2 (ill* or disorder*)):ti,ab,kw	843
#2	MeSH descriptor: [Schizophrenia] explode all trees	4990
#3	schizophreni*:ti,ab,kw	10183
#4	MeSH descriptor: [Bipolar Disorder] explode all trees	1619
#5	((bipolar or bi next polar) near/3 (disorder* or depress* or ill*)):ti,ab,kw	3222
#6	MeSH descriptor: [Psychotic Disorders] explode all trees	1573
#7	(psychotic* or psychosis or psychoses):ti,ab,kw	4848
#8	(schizoaffective or schizo next affective):ti,ab,kw	888
#9	(hypomania* or mania* or manic):ti,ab,kw	1692
#10	mental next disorder*:ti	1222
#11	MeSH descriptor: [Depressive Disorder] explode all trees	7707
#12	MeSH descriptor: [Depression] this term only	5603
#13	((depression or depressive) near/3 (major or sever* or serious* or endur* or chronic* or persist* or resistant)):ti,ab,kw	9257
#14	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13	32574
#15	MeSH descriptor: [Delivery of Health Care, Integrated] explode all trees	273
#16	MeSH descriptor: [Patient Care Team] explode all trees	1454
#17	MeSH descriptor: [Patient Care Planning] explode all trees	1481
#18	MeSH descriptor: [Disease Management] explode all trees	2358
#19	MeSH descriptor: [Patient-Centered Care] this term only	344
#20	MeSH descriptor: [Models, Nursing] this term only	159
#21	MeSH descriptor: [Continuity of Patient Care] explode all trees	569
#22	MeSH descriptor: [Comprehensive Health Care] this term only	81
#23	MeSH descriptor: [Patient Care Management] this term only	135
#24	MeSH descriptor: [Primary Health Care] explode all trees	3976
#25	MeSH descriptor: [Internal Medicine] explode all trees	847
#26	MeSH descriptor: [Family Practice] this term only	2136
#27	MeSH descriptor: [Geriatrics] this term only	202
#28	general next practice:ti	1679
#29	("continuity of care" or "coordinated care" or "co-ordinated care" or co-ordinated next program* or coordinated next program* or "team care" or team next treatment* or team next assessment* or team next consultation*):ti,ab,kw	332
#30	(collaborat* near/3 (care or manage*)):ti,ab,kw	633
#31	shared next care:ti,ab,kw	118

#32   ((patient-centred or patient-centered) near/2 (care or manage* or program* or service*)):ti,ab,kw   443

#33   ((patient-centred or patient-centered) near/2 (policy or policies or model*)):ti,ab,kw   21

#34   holistic next care:ti,ab,kw   26

#35   (integrat* near/2 (care or service*)):ti,ab,kw   687

#36   (model* near/2 care):ti,ab,kw   993

#37   #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30 or #31 or #32 or #33 or #34 or #35 or #36   14180

#38   #14 and #37   1644

#39   #14 and #37 Publication Year from 2013 to 2015   176

Key

MeSH descriptor = indexing term (MeSH heading)

* = truncation

:ti,ab,kw = terms in either title or abstract or keyword fields

near/3 = terms within three words of each other (any order)

next = terms are next to each other

EMBASE

Ovid http://ovidsp.ovid.com/

1974 to 2015 May 20th

Searched on 21st May 2015. 1263 records were retrieved.

Searches were limited to records added to EMBASE since 1st January 2013. A search strategy developed by Lefebvre et al. to identify randomised trials in EMBASE was used to limit retrieval to clinical trials (lines 49-63).

1   ((serious$ or sever$) adj2 mental$ adj2 (ill$ or disorder$)).ti,ab. (8516)
2   exp schizophrenia/ (151405)
3   schizophreni$.ti,ab. (127264)
4   exp bipolar disorder/ (43502)
5   ((bipolar or bi polar) adj3 (disorder$ or depress$ or ill$)).ti,ab. (34751)
6   exp Psychotic Disorders/ (231368)
7   (psychotic$ or psychosis or psychoses).ti,ab. (73153)
8   exp psychosis/ (231368)
9   (schizoaffective or schizo-affective).ti,ab. (6604)
10   exp mania/ (52985)
11   (hypomania$ or mania$ or manic).ti,ab. (20738)
12   mental disorder$.ti. (7616)
13   exp depression/ (336751)
14   ((depression or depressive) adj3 (major or sever$ or serious$ or endur$ or chronic$ or persist$ or resistant)).ti,ab. (64184)
15   or/1-14 (565390)

16   integrated health care system/ (7540)

17   patient care planning/ or case management/ or clinical pathway/ (41236)

18   patient care/ (209606)

19   disease management/ (12769)

20   exp primary health care/ (116185)

21   exp internal medicine/ (205500)

22   general practice/ (72243)

23   geriatrics/ (38504)

24   holistic care/ (1795)

25   general practice.ti. (21231)

26   (continuity of care or coordinated care or co-ordinated care or co-ordinated program$ or coordinated program$ or team care or team treatment$ or team assessment$ or team consultation$).ti,ab. (8089)

27   (collaborat$ adj3 (care or manage$)).ti,ab. (6348)

28   shared care.ti,ab. (1336)

29   ((patient-centred or patient-centered) adj2 (care or manage$ or program$ or service$)).ti,ab. (4067)

30   ((patient-centred or patient-centered) adj2 (policy or policies or model$)).ti,ab. (399)

31   holistic care.ti,ab. (1251)

32   (integrat$ adj2 (care or service$)).ti,ab. (10758)

33   (model$ adj2 care).ti,ab. (12170)

34   or/16-33 (680193)

35   15 and 34 (24865)

36   pretest posttest design/ (811)

37   (pre-post or pre-test or pretest or posttest or post-test).ti,ab. (31005)

38   (before and after).ti,ab. (734035)

39   (before and during).ti,ab. (385621)

40   quasi experimental study/ (2381)

41   (quasi-experiment$ or quasiexperiment$ or quasirandom$ or quasi random$ or quasicontrol$ or quasi control$).ti,ab. (11935)

42   (time series and interrupt$).ti,ab. (1493)

43   time points.ti,ab. (76080)

44   (multiple or three or four or five or six or seven or eight or nine or ten or month$ or hour$ or day$).ti,ab. (8055470)

45   43 and 44 (55432)

46   exp program evaluation/ (5865)

47   36 or 37 or 38 or 39 or 40 or 41 or 42 or 45 or 46 (953694)

48   35 and 47 (1019)

49   random$.ti,ab. (982608)

50   factorial$.ti,ab. (25495)

51   crossover$.ti,ab. (53225)

52   cross-over$.ti,ab. (23880)

53   placebo$.ti,ab. (219295)

54   (doubl$ adj blind$).ti,ab. (157013)

55 (singl$ adj blind$).ti,ab. (16000)

56 assign$.ti,ab. (263435)

57 allocat$.ti,ab. (93863)

58 volunteer$.ti,ab. (193530)

59 Crossover Procedure/ (42861)

60 double blind procedure/ (122799)

61 Randomized Controlled Trial/ (373265)

62 single blind procedure/ (20192)

63 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 (1563786)

64 35 and 63 (3815)

65 48 or 64 (4549)

66 limit 65 to em=201300-201521 (1192)

67 ("201591" or "201592" or "201593").em. (375297)

68 65 and 67 (71)

69 66 or 68 (1263)

Key:

/ = indexing term (EMTREE heading)

exp = exploded EMTREE heading

$ = truncation

ti,ab = terms in either title or abstract fields

adj3 = terms within three words of each other (any order)

sh = subject heading field

em = entry month – date added to database

PsycINFO

Ovid http://ovidsp.ovid.com/

1806 - May Week 2 2015

Searched on 21st May 2015. 1122 records retrieved.

Searches were limited to records added to PsycINFO since 1st January 2013.

1 ((serious$ or sever$) adj2 mental$ adj2 (ill$ or disorder$)).ti,ab. (9034)

2 exp schizophrenia/ (75327)

3 schizophreni$.ti,ab. (99865)

4 exp bipolar disorder/ (20860)

5 ((bipolar or bi polar) adj3 (disorder$ or depress$ or ill$)).ti,ab. (23736)

6 exp psychosis/ (95879)

7 (psychotic$ or psychosis or psychoses).ti,ab. (62031)

8 schizoaffective disorder/ (2679)

9 (schizoaffective or schizo-affective).ti,ab. (5591)

10 (hypomania$ or mania$ or manic).ti,ab. (17533)

11 exp mania/ (5305)

12 mental disorder$.ti. (5329)

13   exp major depression/ (99296)

14   "depression (emotion)"/ (22238)

15   atypical depression/ (172)

16   ((depression or depressive) adj3 (major or sever$ or serious$ or endur$ or chronic$ or persist$ or resistant)).ti,ab. (45042)

17   or/1-16 (289663)

18   exp integrated services/ (2521)

19   treatment planning/ or case management/ or interdisciplinary treatment approach/ (12865)

20   disease management/ (4527)

21   client centered therapy/ (2578)

22   "continuum of care"/ (1197)

23   primary health care/ (13463)

24   family medicine/ (1071)

25   geriatrics/ (7683)

26   general practice.ti. (1537)

27   (continuity of care or coordinated care or co-ordinated care or co-ordinated program$ or coordinated program$ or team care or team treatment$ or team assessment$ or team consultation$).ti,ab. (2074)

28   (collaborat$ adj3 (care or manage$)).ti,ab. (2468)

29   shared care.ti,ab. (260)

30   ((patient-centred or patient-centered) adj2 (care or manage$ or program$ or service$)).ti,ab. (993)

31   ((patient-centred or patient-centered) adj2 (policy or policies or model$)).ti,ab. (119)

32   holistic care.ti,ab. (367)

33   (integrat$ adj2 (care or service$)).ti,ab. (3554)

34   (model$ adj2 care).ti,ab. (3650)

35   or/18-34 (53285)

36   17 and 35 (7783)

37   posttesting/ or pretesting/ (274)

38   (pre-post or pre-test or pretest or posttest or post-test).ti,ab. (24682)

39   (before and after).ti,ab. (70148)

40   (before and during).ti,ab. (39397)

41   quasi experimental methods/ (130)

42   (quasi-experiment$ or quasiexperiment$ or quasirandom$ or quasi random$ or quasicontrol$ or quasi control$).ti,ab. (7991)

43   (time series and interrupt$).ti,ab. (516)

44   time points.ti,ab. (8295)

45   (multiple or three or four or five or six or seven or eight or nine or ten or month$ or hour$ or day$).ti,ab. (1068587)

46   44 and 45 (5891)

47   exp program evaluation/ (17222)

48   37 or 38 or 39 or 40 or 41 or 42 or 43 or 46 or 47 (136358)

49   36 and 48 (383)

50   Clinical Trials/ (8665)

51   Placebo/ (4069)

52   control$.ti,ab. (514410)

53   random$.ti,ab. (141414)

54   exp treatment/ (614674)

55   or/50-54 (1106526)

56   36 and 55 (6346)

57   49 or 56 (6393)

58   limit 57 to up=20130101-20150511 (1122)

Key:

/ = indexing term

exp = exploded MeSH heading

sh = terms in subject heading field

$ = truncation

ti,ab = terms in either title or abstract fields

adj3 = terms within three words of each other (any order)

adj = terms next to each other (order specified)

up = update code – date added to database

ClinicalTrials.gov

https://clinicaltrials.gov/

Searched on 3rd June 2015. 81 trials retrieved for the period 01/0/2013-03/06/2015.

81 studies found for: "serious mental illness" OR SMI OR "severe mental illness" OR "bipolar disorder" OR schizophrenia OR "schizoaffective disorder" OR depression OR "psychotic disorder" OR "mental disorder" | "collaborative care" OR "team care" OR "shared care" OR "integrated care" OR "care model" OR "models of care" OR "coordinated care" OR "co-ordinated care" OR "continuity of care" OR "patient-centred" OR "patient-centered" OR "holistic care" | received from 01/01/2013 to 03/06/2015

Guideline searches

National Guideline Clearinghouse

http://www.guideline.gov/

Searched on 5th June 2015. No date limits were applied. 10 relevant guidelines were found in total using the search strategies below.

1. Searched via the guidelines by topic search. Mental disorders category selected from within psychiatry and psychology giving 281 results. Searched within these results for "physical health" or "integrated care" giving 36 results. 36 results browsed for relevance. 7 relevant guidelines retrieved.

2. Searched via the guidelines by topic search. Mental disorders category selected from within psychiatry and psychology giving 281 results. Searched within these results for "comorbidity" giving 110 results. 110 results browsed for relevance. 2 relevant guidelines retrieved.

3. Using the general search box search for "severe mental illness" or "serious mental illness" or smi. 10 results found which were browsed for relevance. I relevant guideline retrieved.

Trip Database

https://www.tripdatabase.com/

Searched on 5th June 2015. No date limits were applied. 137 records were retrieved from within the guidelines category using the strategy below. The records were browsed for relevance and 11 relevant guidelines were found.

("severe mental illness" OR "serious mental illness" OR SMI) AND (physical OR "integrated care" OR comorbidity OR co-morbidity)

Website searches

Australia

The Department of Health

http://www.health.gov.au/

Searched on 6th June 2015. 4 reports retrieved.

103 report titles from the mental health topic within the publications section were browsed for relevance. 4 relevant reports were found.

New Zealand

New Zealand Ministry of Health

http://www.health.govt.nz/

Searched on 9th June 2015. 7 reports retrieved.

93 report titles from the mental health topic within the publications section were browsed for relevance. In addition, searched the publications section using the following search terms "integrated care", "severe mental illness", "serious mental illness", comorbidity or co-morbidity. 7 relevant reports in total were found.

Canada

Health Canada

http://www.hc-sc.gc.ca/index-eng.php

Searched on 9th June 2015. 2 reports retrieved.

Searched the website using the following search terms: "integrated care", "severe mental illness", "serious mental illness", comorbidity or co-morbidity. 2 relevant reports in total were found.

USA

Substance Abuse and Mental Health Services Administration

http://www.samhsa.gov/

Searched on 9th June 2015. 4 reports retrieved.

Browsed report titles listed within the publications sections on integrated care (46 reports) and co-occurring disorders (80 reports). 4 relevant reports were found.

UK

Department of Health

https://www.gov.uk/government/organisations/department-of-health

Searched on 9th June 2015. 2 reports retrieved.

Searched the website using following search terms:

"severe mental illness" AND physical

"severe mental illness" AND "integrated care"

Browsed results, 2 relevant reports were found.

Google search

http://www.google.com/advanced_search

Searched on 17th June 2015. 20 reports retrieved.

The following search strategy was entered into the google advanced search page:

("integrated care" OR "collaborative care" OR "shared care" OR "models of care") AND (mental OR physical OR comorbidity OR co-morbidity OR bipolar OR schizophrenia OR depression)

The following limits were applied: terms appearing anywhere on the page, region set to UK, language set to English, pdf files only.

The first 100 results were browsed for relevance. 20 relevant reports were retrieved.

APPENDIX 4: Data extraction template

Reference Source (Literature, contact, PPI) Nature of publication	Stated aim/ objective	Patient/service user group	Setting (Country; Primary/secondary/tertiary etc.; involvement of non-NHS services/organisations)‡	Defining characteristics of approach as described by authors/practitioners	Integrated care factors*	Facilitators for wider implementation (process outcomes described by authors)	Barriers to wider implementation (process outcomes described by authors)	Evaluation? (Yes/No) Outcome relevant to physical health

‡ We are primarily interested in integration *within* the NHS, but some relevant models may nevertheless touch on other agencies or sectors

* Integrated care factors:

1. Information sharing systems – e.g. individual electronic records, other IT solutions

2. Shared protocols – setting out the responsibility of each organization (or part of organization) in delivering and agreed service and/or outcome.

3. Joint funding and commissioning – pooled funding and services commissioned across boundaries

4. Co-location of services – e.g. co-location of primary care and specialist mental health staff

5. Multidisciplinary teams – e.g. Community Mental Health Teams (CMHTs)

6. Liaison services – e.g. physical care liaison services in mental health settings

7. Navigators – e.g. a single named individual who can help people navigate their way through complex systems

8. Research

9. Reduction of stigma

APPENDIX 5: Data extraction

Reference Source Nature of publication	Stated aim/ objective	Patient/service user group	Setting (Country; Primary/secondary/tertiary etc.; involvement of non-NHS services/organisations)‡	Defining characteristics of approach as described by authors/practitioners	Integrated care factors*	Facilitators for wider implementation (process outcomes described by authors)	Barriers to wider implementation (process outcomes described by authors)	Evaluation? (Yes/No) Outcome relevant to physical health
Bartels (2014)[31] Literature RCT pilot study[31]	To evaluate feasibility and effectiveness of integrated Illness Management and Recovery (I-IMR) for people with SMI and chronic general medical conditions.	Older adults with SMI (schizophrenia spectrum; bipolar disorder; major depression) and chronic medical conditions.	USA Community mental health centres	Combined patient training in self-management for both psychiatric and general medical illness. 10 modules delivered weekly over 8 month period by an I-IMR specialist. Preventive and on-going health care facilitated by a primary care nurse health care manager located one day per week at the mental health centre. Components of intervention for both psychiatric and general medical illness: customized to patient education/training about illness and treatment; cognitive-behavioural approaches to improve medication adherence; relapse prevention; coping skills to manage persistent symptoms; social skills.	4.7.	Participant attendance at sessions was sufficient to benefit from training and nurse management. Indicates feasibility of intervention.		Yes. Measures of improvement in self-management of psychiatric and general medical illness (including disease-specific measures for diabetes, COPD, hypertension, hyperlipidemia, and arthritis. Participation (communication and preferences about decision-making) in psychiatric and medical encounters. Use of acute care services.
Bellamy (2013)[52] Clinical trials register RCT protocol	To study health outcomes of individuals with mental illness attending a co-located primary health care centre in a mental health centre.	People with SMI	USA Mental health centre	SAMHSA-funded integrated Wellness Center (WC) providing four evidence-based practices: (a) on-site primary care; (b) screening of clients for modifiable risk factors and medical conditions; (c) care coordination; and (d) peer health navigation.	3. 4. 5. 6. 7.	-	-	Yes Clinical (e.g. blood pressure, BMI, glucose/ lipid levels, substance use) and patient-centred outcomes.

Reference Source Nature of publication	Stated aim/ objective	Patient/service user group	Setting (Country; Primary/secondary/tertiary etc.; involvement of non-NHS services/organisations)‡	Defining characteristics of approach as described by authors/practitioners	Integrated care factors*	Facilitators for wider implementation (process outcomes described by authors)	Barriers to wider implementation (process outcomes described by authors)	Evaluation? (Yes/No) Outcome relevant to physical health
Bradford(2013)[26] Literature Journal article (systematic review)	To conduct a systematic review of studies of interventions that integrated medical and mental health care to improve general medical outcomes in individuals with serious medical illness.	People with SMI	USA Veterans' Administration (VA) outpatient mental health clinic	Co-located general medical clinic with care provided by a nurse practitioner with supervision from a family practitioner; care coordination provided by a nurse. Liaison with mental health providers. Primary care appointments were scheduled to immediately follow mental health appointments when possible. VA computerized record. Funded by VA Research and Development/ local clinic funds.	1. 3. 4. 5. 6.	Single payer health care system	-	Yes General medical service use
(continued)		Bipolar disorder	USA Veterans' Administration (VA) outpatient mental health clinic	Specialty team of psychiatrist and nurse care manager, including self-management support (psychoeducational "Life Goals Program", primarily addressing bipolar disorder symptoms) decision support (simplified VA Bipolar Clinical Practice Guidelines for providers), emphasis on primary care enrollment and collaboration. Nurse care manager provided same-day telephone and next-business-day clinic appointments. VA computerized record. Funded by VA Research and Development.	1. 3. 4. 5.	Single payer health care system	-	Yes SF-36 physical health

Reference Source Nature of publication	Stated aim/ objective	Patient/service user group	Setting (Country; Primary/secondary/tertiary etc.; involvement of non-NHS services/organisations)‡	Defining characteristics of approach as described by authors/practitioners	Integrated care factors*	Facilitators for wider implementation (process outcomes described by authors)	Barriers to wider implementation (process outcomes described by authors)	Evaluation? (Yes/No) Outcome relevant to physical health
(continued)		Bipolar disorder	USA Veterans' Administration (VA) outpatient mental health clinic	Bipolar disorder medical care model consisting of 4 sessions of self-management support, nurse care management (first response for bipolar disorder-specific care and liaison between existing providers), guideline implementation related to cardiovascular risk factors. Decision support included continuing medical education and guidelines; pocket cards for medical and mental health providers related to cardiovascular risk factor management. VA computerized record. Funded by VA Research and Development.	1. 3. 4. 5. 6.	Single payer health care system	-	Yes SF-12 quality of life-physical health
(continued)		SMI	USA Urban community mental health centre	Nurse care management with self-management (motivational interviewing, development of action plans, and coaching), liaison between mental health and medical providers, and case management components. Funded by National Institute of Mental Health.	5. 6.			Yes SF-36 Framingham Cardiac Index

Reference Source Nature of publication	Stated aim/ objective	Patient/service user group	Setting (Country; Primary/secondary/tertiary etc.; involvement of non-NHS services/organisations)‡	Defining characteristics of approach as described by authors/practitioners	Integrated care factors*	Facilitators for wider implementation (process outcomes described by authors)	Barriers to wider implementation (process outcomes described by authors)	Evaluation? (Yes/No) Outcome relevant to physical health
Chwastiak [44] Clinical trials register Feasibility study protocol	To demonstrate the feasibility and acceptability of adapting TEAMcare for patients with schizophrenia	Patients with schizophrenia and poorly controlled type 2 diabetes	USA Mental health centre	TEAMcare is an evidence-based collaborative care approach to the treatment of diabetes and psychiatric illness. Involves structured visits with a study nurse to monitor psychiatric symptoms, control of medical disease, and self-care activities. Nurses use motivational coaching to help patients solve problems and set goals for improved self-care and medication adherence. Medications for diabetes, hypertension, and hyperlipidemia are monitored and therapy intensified based on treat-to-target guidelines. All process and outcome measures are tracked in a registry designed for the study, and the nurses receive weekly supervision with a psychiatrist, an endocrinologist and a psychologist in order to review new cases and to track progress. Once a patient achieves targeted levels for relevant measures, the patient and the nurse develop a maintenance plan.	4, 5	-	-	Yes HbA1c, blood pressure, LDL cholesterol
Chwastiak (2014)[36] #734 Literature Overview	To describe various collaborative care models (including the adapted TEAMcare model) for community mental health patients with serious mental	Patients with SMI	USA Community	Example 1: VA hospital – co-located medical and mental health care versus general medical clinic. Intervention group emphasis on prevention, patient education, and collaborative care with mental health providers.	4. 5. 6.	Flexibility within health care systems to work collaboratively. Commitment from key leaders and administrators.	Regulatory barriers that limit information exchange between primary and mental health care.	Yes. Number of primary care visits. Receipt of preventive services (e.g.,

Reference Source Nature of publication	Stated aim/ objective	Patient/service user group	Setting (Country; Primary/secondary/tertiary etc.; involvement of non-NHS services/organisations)‡	Defining characteristics of approach as described by authors/practitioners	Integrated care factors*	Facilitators for wider implementation (process outcomes described by authors)	Barriers to wider implementation (process outcomes described by authors)	Evaluation? (Yes/No) Outcome relevant to physical health
	illness (SMI).			Example 2: The Primary Care Access Referral and Evaluation (PCARE) trial. Co-location of a nurse care manager in specialist mental health clinic. Example 3: Integrated Illness Management and Recovery (I-IMR); 8 month programme combining self-management training for physical and mental illness. Example 4: Life Goals Collaborative Care (LGCC). Care management incorporated with care management and tracking of health behaviours/issue of treatment guidelines to providers of mental and primary health care. Example 5: TEAMcare model (adapted for SMI). Multidisciplinary team in mental health care setting; nurse care manager is a community psychiatric nurse; increase emphasis on outreach and home visit; intervention training manuals adapted; collaboration with prescriber of antipsychotic medication; collaboration with wider mental health team.				screening or colorectal cancer/metabolic disorders/BP control). Cardiac risk factors. Diabetes control.

Reference Source Nature of publication	Stated aim/ objective	Patient/service user group	Setting (Country; Primary/secondary/tertiary etc.; involvement of non-NHS services/organisations)‡	Defining characteristics of approach as described by authors/practitioners	Integrated care factors*	Facilitators for wider implementation (process outcomes described by authors)	Barriers to wider implementation (process outcomes described by authors)	Evaluation? (Yes/No) Outcome relevant to physical health
Curtis (2015)[48] From field expert contact Prospective controlled study	To evaluate an individualized lifestyle and life skills intervention ("Keeping the body in mind") as part of standard mental health care.	Young people with first-episode psychosis (schizophreniform psychosis, schizophrenia, schizoaffective disorder, delusional disorder, depression/psychotic features according to DSM-IV-TR).	Australia Community-based health services	In addition to standard care (individual mental health case management with medical assessment and antipsychotic prescriptions) participants received a 12-week intervention comprising three interrelated components: (1) individualised health coaching (to promote intervention adherence); (2), dietetic support; (3) supervised exercise prescription. Delivered by clinical nurse consultant, dietician, exercise physiologist, youth peer wellness coaches. Psychiatrists and endocrinologist carried out additional medication review and advice.	4. 5.	NR	NR	Yes Prevention of antipsychotic induced weight gain

Reference Source Nature of publication	Stated aim/ objective	Patient/service user group	Setting (Country; Primary/secondary/tertiary etc.; involvement of non-NHS services/organisations)‡	Defining characteristics of approach as described by authors/practitioners	Integrated care factors*	Facilitators for wider implementation (process outcomes described by authors)	Barriers to wider implementation (process outcomes described by authors)	Evaluation? (Yes/No) Outcome relevant to physical health
DeHert (2009)[53] Literature Proposed clinical pathway/Positi on statement (based on guidelines from the European Society of Cardiology/Eur opean Association for the Study of Diabetes).	Initiate cooperation and shared care and increase awareness of psychiatrists to screen and treat CV risk factors and diabetes in SMI.	Severe mental illness (schizophrenia, major depression, bipolar disorder)	Europe Multiple settings. Psychiatric co-ordination, ideally as part of shared care arrangements with general and specialist services. European focus.	CV risk assessment at 6 and 12 weeks after antipsychotic treatment initiation, followed by annual check to include: Baseline assessment and advice: (1) history, smoking exercise, dietary habits; (2) BP, weight, waist circumference, BMI; ECG (3) Diabetes, fasting glucose and fasting lipids; (4) Advice on smoking cessation, food choices, physical activity. This information should inform the choice or review of antipsychotic treatment. If additional treatment for CV risk or diabetes is needed, involve or refer to primary care/diebetologist/specialist where appropriate, with an agreed follow-up date. Repeat steps 2, 3, and 4 plus smoking levels at weeks 6 and 12 if new to antipsychotic agent. Then annually for all patients. Flowchart presented in paper.	2.	NR	NR	No Risk factors for cardiovascular disease and diabetes.
Department of Health (2006)[2] Literature Policy document	Commissioning Framework to help PCTs plan for, design, and commission and monitor services to improve physical health and well-being for people with SMI.	People with SMI	UK Urban and rural settings. Involving primary/secondary/tertiary/no n-NHS.	See specifically Appendices A & B. Case study examples of pilot programmes: Four separate nurse-led programmes involving multi-agency input. Combined consultation and healthy living initiatives. Multidisciplinary teams of	1. 4. 5. 6.	Training of health professionals. Dedicated care-coordinator role. Effective communication between multi-agency health professionals.	Resistance of primary care to carry out physical health checks. Low attendance rate in younger service users.	Yes. Substance use; weight loss; smoking; physical activity; diet; primary care use; BP; BMI; Glucose and Lipids

Reference Source Nature of publication	Stated aim/ objective	Patient/service user group	Setting (Country; Primary/secondary/tertiary etc.; involvement of non-NHS services/organisations)‡	Defining characteristics of approach as described by authors/practitioners	Integrated care factors*	Facilitators for wider implementation (process outcomes described by authors)	Barriers to wider implementation (process outcomes described by authors)	Evaluation? (Yes/No) Outcome relevant to physical health
				consultants/community mental health managers/ other service managers/psychiatric consultants. Clinic and home consultation visits. Regular healthy living groups for people with SMI.

Other promising approaches are: **Inpatient support:** Weekly Primary care service provided by GP to acute inpatient unit; health screening pilot in an inpatient unit delivered by GP or practice nurse for those with length of stay >6 months; physical healthcare team (nurse practitioners) at acute mental health trust. **Community services**: Collaborative primary and secondary care involving physical health checks and monitoring or service users and physical health/training for mental health nurses; SMI registers at GP practices, followed by annual health checks (led by mental health nurses). | | Continuity of care likely to be facilitated by:

Maintaining accurate registers of people with SMI to record physical health checks and consultations, including follow up and progress; supporting access and appropriate referral to healthcare and health promotion services.

Other facilitators:

Local leadership of programmes (appropriate training; clearly defined roles and responsibilities); consultation with stakeholders (patients; health professionals; voluntary sector. Open referral policy; buddying programmes/ use of mobile technology to increase programme attendance. | | |

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						Evaluation of effectiveness.		
Social Care Local Government and Care Partnership Directorate(2014)[4] Literature Policy document	Increase access to mental health services	Not specified	NHS	Clinical commissioning tools that will support integration of physical and mental health care to be developed by NHS England	3.	Insufficient details	Insufficient details	No
(continued)	Integrate physical and mental health care	Not specified	NHS	Training programmes for health care employers to increase awareness of mental health problems and how they may affect their patients, including links between mental and physical health.		Insufficient details	Insufficient details	No
(continued)	Integrate physical and mental health care	Not specified	NHS primary care	Improving GP knowledge and experience of management of SMI, including physical health and crisis care. RCGP adapting its Curriculum Statement for Mental Health and appointing a Mental Health Clinical Lead. All future GPs to receive specialist-led training in the care of young people and adults with mental health problems.		Insufficient details	Insufficient details	No
(continued)	Integrate physical and mental health care	Mental health in-patients	NHS mental health in-patient facilities	Improving standards of physical care in to support earlier diagnosis and treatment of common illnesses		Insufficient details	Insufficient details	No

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(continued)	Integrate physical and mental health care	Not specified	NHS	Providing Health and Wellbeing boards with funds to develop their own plans for joined up health and care locally. 14 "Integrated Care pioneer sites" announced in November 2013.	3. (other aspects may be covered by pioneer sites)	Insufficient details	Insufficient details	No
(continued)	Raising awareness of mental and physical health needs	Not specified	NHS/Public Health England	GPs, health care professionals and social workers can promote importance of physical health. Appropriate adaptation of lifestyle and public health intervention services for mental health service users.	5.?	Insufficient details	Insufficient details	No
Druss (2001)[51] From [80]	To evaluate an integrated model of primary medical care for patients with SMI.	Veterans with SMI	USA Veterans Affairs Mental Health Clinic	Integrated care clinic located in the mental health clinic to provide primary care and case management, including prevention, patient education, and collaboration with mental health providers. Delivered by nurse practitioner, part-time family practitioner, nurse care manager and administrative assistant. The registered nurse and the family practitioner provided liaison between psychiatry and medical services. Patients were prompted about appointments scheduled (where possible) to follow mental health visits. One representative from the integrated clinic liaised with mental health teams via weekly team meetings.	4.5.6.	Additional staff resources to improve access and adherence to care (case manager outreach, extra appointment time, scheduling flexibility). Basic reorganization of services, including on-site location, common chart, enhanced channels of communication and information sharing.	Limited generalizability to non- VA settings.	Yes. Health care visits (including primary care visit) /receipt of preventive health measures/Physical component of the SF-36.

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NHS NIHR Collaboration for Leadership in Applied Health Research and Care (CLAHRC) for Greater Manchester (2013)[45, 46] Literature Guidance document and pilot project evaluation	1. Develop a system that demonstrates improved continuity of care achieved through strengthened coordination and collaboration between primary care and CMHTs, such that there is a clear shared responsibility for the physical health of people with SMI. 2. Develop clear pathways and guidance on delivering physical health checks in a community setting to ensure that the physical health of people with SMI is assessed on a more regular basis and access to appropriate care is timely, resulting in better health outcomes for the service user. 3. Ensure that people with SMI are provided with improved access to lifestyle services	People with SMI	UK North West Community Mental Health Team (NW CMHT) of Manchester Mental Health and Social Care Trust (MMHSCT) and general practice.	Five main components: 1. A time-protected Community Physical Health Co-ordinator (CPHC) role. Split with an ongoing part-time Care Coordinator role within the CMHT. Provided with mandatory physical health training (including medication side effects, COPD, obesity/weight management, type 2 diabetes, measuring blood pressure and stroke, preventing VTE, physical health assessments) 2. Regular multi-disciplinary team (MDT) meetings between the CPHC and GP practices to establish shared care with the NW CMHT. The CPHC co-ordinates each meeting with lead GP; obtains relevant client info from Care Co-ordinator; captures actions and feeds back to Care Co-ordinators and consultants; holds a definitive list of lifestyle services; liaises with Practice Manager and GPs in between MDT meetings. 3. Identification of training needs amongst the NW CMHT staff and delivery of appropriate training to improve capacity to address physical health needs and support lifestyle changes.	1?2? 5.6.7.	Boundary spanning role: Essential for CPHC to continue as a Care Co-ordinator whilst carrying out the role; Training in conflict management, facilitation, negotiation, and physical health management to facilitate MDT meeting success. Knowledge integration: MDT meetings involving at least a GP, Practice Manager /Administrator, Practice Nurse/ Health Care Assistant and the CPHC; Integrated working between Assistant Practitioners and Care Co-ordinators; Physical health Education sessions provided by the Physical Health Nurses; Mandatory physical health training for all CMHT staff; Collaborative training day for CMHT and lifestyle	Lack of time to perform community physical health assessments. Difficulty for CMHT staff trying to accommodate physical health training into their case loads.	Yes (process evaluation)

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	currently available Within Manchester Mental Health and Social Care Trust (MMHSCT), whilst improving the provision of targeted health information that will empower service users to take care of their own physical health needs.			4. Regular physical health assessments delivered in a community setting by CMHT. 5. Increased use of existing physical health resources through collaborative training day for CMHT and community lifestyle service staff on a) what lifestyle services were available, b) what they provided, c) how to refer into them, d) barriers to referrals, e) how to improve the current system, f) how to improve the uptake, and g) experiences of working with SMI service users.		service staff. Standardisation: CPHC job description and a flowchart of responsibilities; A process for identifying service users to raise for discussion at the MDT meetings; Joint action plans for the physical health management of service users; Clinical guidance document to assist Care Co-ordinators carrying out physical health assessments; Distributing a physical health check bag (including scales etc.) to CMHT staff; Lifestyle services directory made available and distributed to all CMHT staff. Supportive organizational culture: Spread and sustainability strategy; Commitment to CPHC role from management, protected time and		

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						resources; Supervision of Care Co-ordinators to include MDT actions; Implementation of physical health mandatory training for all CMHT staff; Protected time plus support and guidance for completing physical health assessments.		
Happell (2013)[54] Literature Journal article (Survey)	To identify the views of nurses working within the Mental Health Nurse Incentive Program (MHNIP) about their involvement with the physical health of people with SMI	People with SMI	Australia Primary care settings (GP clinics, private psychiatry services, private hospitals).	Mental Health Nurse Incentive Program (MHNIP) was designed to increase access to quality mental-health care services in the primary care setting and to support GPs in providing quality health-care services. Involves the introduction of Mental Health Nurses (MHN) into primary care settings such as GP clinics, private psychiatry services, private hospitals. Primary role of MHN is to coordinate the mental health care for people in the community, destigmatising the primary care experience of consumers, helping to ensure connection with the general community, and to prevent hospitalisation. Only documented reference to	6. 9.	MHNIP allows flexibility to deal within the MHN role to deal with physical health care. MHNIP allows important access to all services in one location. Strong relationship between MHN and general practitioner.	-	No

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				physical health is 'providing information on physical health care' and 'improving links to other professionals and community support programmes'. However, survey respondents reported often discussing physical health of consumers with GPs, psychiatrists, and case managers. Also checking whether consumers had received physical health assessments on entering the service, checking if they had a regular GP, plus weight management, exercise and dietary advice. Less frequently gave advice on STD protection and contraceptives and ensuring eyesight is regularly checked.				
Happell (2014)[28] Literature RCT	To describe the initial physical health of SMI participants randomized to a specialist Cardiometabolic Health Nurse (CHN) intervention.	SMI	Australia Community mental health care	Identification of at-risk factors for cardiometabolic health by CHN.	4. 6. 7.	NR	NR	Yes. Measures assessed: BP BMI Self-reported physical activity and views on physical activity, smoking and nutrition

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Happell (2014)[56] Literature Protocol for 26-week RCT	To evaluate the impact on physical health care of community mental health consumers following intervention of a specialist Cardiometabolic Health Nurse (CHN) vs usual care.	Community mental health consumers	Australia Community mental health care	Participants receive 2 x 30 min consultations (baseline/completion), covering physical assessment (BMI, waist/hip ratio, vegetable intake, smoking status, alcohol use, ECG, self-care of feet , BP, glucose, lipids, medication review. CHN implements strategies to address concerns of those identified at-risk, including links to GPs or allied health professionals/advice on health behaviour change. CHN responsible for follow up.	4. 6. 7.	-	-	Yes Self-reported physical health. Use of primary health services. Behaviour change.
Happell (2015)[55] Literature Survey	To explore the views of nurses on the introduction of the Cardiometabolic Health Nurse (CHN) as an effective strategy in patients with SMI.	Nurses caring for patients with SMI.	Australia	Option for mental health nurses to refer patient to CHN (role description as above).	4. 6. 7.	Seen as helpful support for mental health nurses. Will depend on context and extent of existing provision for primary care services.	Funding and resources. Potential service fragmentation. Encroachment on/conflicts with comprehensive nursing. Complicating/interfering with care. "Muddying the waters" on who is responsible for physical health. Diverting attention from GP access.	No. See [56] for range of physical health outcomes considered.

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Hardy (2014)[29] Literature search Primary study	To establish whether training practice nurses increases the proportion of patients with SMI who are screened for CVD risk factors and given life-style advice in primary care.	Patients with SMI in primary care (taken from the SMI register).	UK (England); NHS primary care (Practice Nurses).	Training manual and website (developed as part of the study). Manual provides clear guidance and a rationale to help practice nurses make decisions about individual patients. Website provides training and a resource for useful tools and links. Training aimed to provide practice nurses with greater understanding of the increased risk of CVD in patients with SMI and confidence in carrying out the physical health checks.		NR	Organisation of practice nurses workload. Culture of primary care - also need to educate commissioners and GPs about the risk of CVD in this group of patients.	Yes: Before and after audit. Proportion of SMI patients receiving elements of an annual health check (CVD screening and lifestyle advice).
Jones (2013)[38] Literature RCT protocol	To examine whether dental awareness training plus a dental checklist leads to a clinically significant difference in oral health behavior of people with serious mental illness	Care-coordinators working in Early Intervention in Psychosis (EIP) teams.	UK NHS East Midlands	One-off dental awareness training for care coordinators, and a checklist to be completed with service users, covering SMI history, contact with dentist, toothbrush ownership/use, current state of dental health, and an oral hygiene information sheet for service users.	7.	-	-	Yes, though not yet complete. Problems with mouth and teeth.

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Kelly (2014)[30] Literature RCT pilot	To evaluate the effectiveness of a peer-delivered health navigation intervention ("The Bridge") for improving health and healthcare use in people with SMI.	People with SMI	USA/Southern California Mental health setting	"The Bridge" – four components (1) patient health assessment and health navigation planning; (2) co-ordinated linkages/activities to help patients navigate the health care system and follow-up/adherence to treatment plans; (3) consumer education, including partnering with medical care providers, treatment compliance, self-advocacy and interaction skills, health & wellness, benefits and entitlements); (4) cognitive-behavioural strategies to support health care use behaviour change and behaviour maintenance. Delivered in 2 phases (timing individualized according to need): Phase 1 – intense contact between patient and navigator. Phase 2 – contact less intense as navigator starts to monitor from a distance. Comparator: Treatment as usual.	7.	NR	-	Yes. Measures (for pain only) drawn from SF-6D. 24 common physical symptoms (listed in tab 2 of the paper) plus measure of pain recorded at baseline and up to 12 months.
Brekke (2013)[42] Literature Journal article (Pilot study)	To describe the development and implementation of "The Bridge": a peer-staffed care-linkage model situated in a mental health clinic.	People with SMI	USA Mental health service	The Bridge – a peer health navigator intervention to give clients the skills and experience to self-manage their health care activities to the greatest degree possible (adapted from Gelberg et al 200: Behavioural Model of Health Service Use for Vulnerable Populations (BMHSUVP) to address some of	7. 9.	Supervision and support of the peer navigator	-	Yes Health screenings in previous 6 months/medical hospital admissions/emergency room admissions for

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				the barriers to implementation identified in BMHSUVP). The recruited peer navigator was given comprehensive training, combining 10 weeks in classroom, followed by six weeks internship. Spent two months shadowing clinic nurses, team leaders, and service providers, plus further training in the navigator model and supporting theory. Navigator was provided self-instructional cognitive behavioural strategy guides. Intervention intended to last around 6 months (4-month intensive phase, followed by 2 month step-down phase) Four intervention components are: (1) Assessment of health status, current use of services, and experiences of accessing services. Used to develop a collaborative care health navigation plan and a step-by-step strategy as a basis for monitoring. (2) Coordinated linkages – assisting clients make appointments, communicate with medical care providers, ensure follow-up, handling pharmacy issues, and ensuring compliance with treatment plans. (3) Consumer education about the health care system, how to partner				physical problems/outpatient visits to primary care providers.

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				with medical providers, treatment compliance, self-advocacy, appropriate interaction skills, health and wellness issues, health benefits and entitlements. (4) Cognitive behavioral strategies: modeling, role-playing, coaching, and fading in order to gradually shift navigation activities to the client so they can manage their own health to the greatest extent possible. Peer navigator was supervised and supported by the project manager and participated in weekly team meetings.				
Kern (2015)[57] Literature Book chapter	Describe practices where primary care services are provided to adults with SMI in a mental health environment.	Adults with SMI	USA Primary care services typically provided within Community Mental Health Centre (CMHC) settings, and funded through the Substance Abuse and Mental Health Services Administration's (SAMHSA) Primary and Behavioural Health Care Integration (PBHCI) programme. Alternative administrative arrangements include global payment systems for physical, mental, and dental care for Medicaid beneficiaries (coordinated care organisations; CCOs) and self-contained systems (Veterans Health Administration,	PBHCI requires CMHCs to create a link with a primary care partner. This can be a local Federally Qualified Health Centre (FQHC; a federally funded primary care clinic for medically underserved areas) or a Primary Care Provider (PCP). CMHCs may alternatively take on FQHC status. Recommended components of PBHCI programmes: (1) Regular screening and registry tracking/outcome measurement; (2) Placing PCPs, nurse practitioners, or physician assistants in behavioural health facilities; (3) Primary care supervising	1-9	- Informing providers of available tobacco cessation services, and engaging staff to support abstinence attempts. - Encouraging behavioural health case managers to expand their scope into the medical realm. Training in medical issues. - Strong administrative support for attitude change among providers.	- Lack of availability of useful Web-based registry software - Lack of attention to tobacco cessation from psychiatric providers -Difficulty recruiting PCP and case management staff in rural centres. - PCPs uncomfortable with treating SMI patients and/or difficulties with the complexities and/or slow pace of this work.	No Some evaluative evidence presented.

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			Department of Defense, private insurers).	physician to provide consultation on complex health issues; (4) Nurse care managers to increase participation and follow-up primary care screening, assessment and treatment services; (5) Use of evidence based practices; (6) Prevention and wellness support services (e.g. nutrition, health education/literacy, peer specialists, self-help) Typical staff: Care manager (typically nurse with physical care background) maintains registry of physical health indicators, communicates need for treatment adjustment to primary care team, and coordinates multiple medical providers. Provides clinical direction to case managers, as well as direct physical assessment, health education and primary care linkage for individual patients. Case managers (typically batchelors-level clinicians) role includes maintaining patients' benefits and housing, keeping appointments, interpreting "medicalese", basic medical education, decoding insurance problems, assisting improved health behaviours, miscellaneous problem-solving.		- Global funding of health care to better engage PCPs. Or Health Homes model - Exploiting the ability of psychiatrists to move along the primary care-behavioural health spectrum. - Psychiatrists providing medical care for common conditions (hypertension, diabetes, dyslipidemias) with support of consulting PCP. - PCPs embedded in behavioural Health Home model. - Finding ways to access information from multiple EMRs - Electronic data gathering via handheld units or desktop computer kiosks to allow patient self-entry of data such as	- Inadequate inclusion of psychiatrists. - Confidentiality laws preventing sharing of EMR information between providers.	

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				Peers living with mental illness can be involved in individual and group approaches to improving health behaviours. PCPs (physicians, nurse-practitioners, or physician assistants) provide direct medical services, may oversee the primary care support team and/or provide education to all staff in basic health literacy. May use registry data to establish priorities and target educational efforts, and provide consultation to psychiatric providers on chronic medical issues. Psychiatrists ensure attention to health issues, use of safer psychotropic medicines, regular physical screening with appropriate intervention where necessary. May provide basic treatment of common metabolic conditions with retraining and PCP consultation and/or written protocols. Example programmes include: peers as wellness coaches; providing resources such as fitness centre/relaxation room for peer run programmes ; locating primary care services in the mental health clinic; Electronic medical records (EMRs) accessible to both		depression scales. - Clarity about goals of the primary care clinic. - Providing sufficient physical space for the primary care service if located in mental health clinic. - Ensuring site is both visible and accessible - Planning for unexpected financial issues. - Planning and nurturing communication mechanisms. - Use of registry to organize physical care of psychiatric population. - Learning how to make behavior change happen. - Continual reinforcement with staff of the need for integration. - Making time for		

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				physical and behavioural health services; becoming an FQHC in order to develop a common EMR, plus using a van to provide primary care services to largely homeless population, coordinating with other organisations that use mobile services; employing a physician trained in bariatric medicine to consult on obesity.		providers to collaborate on patient care.		
Kilany (2015)[41] Literature Dissertation	To examine the performance of the patent-centred medical care home (PCMH) model for Medicaid beneficiaries with SMI living in urban and rural areas based on a set of health service utilization and quality of care outcomes.	Medicaid beneficiaries with SMI	US Primary care	"The main tenets of the PCMH model are a physician-directed medical practice, a personal physician for each patient, the capacity to coordinate high quality, accessible care and payments". Encompasses five functions and attributes: (1) Comprehensive care; (2) patient-centred; (3) Coordinated care; (4) Accessible services; (5) Quality and safety. Detailed description of the concept available from: https://pcmh.ahrq.gov/	Potentially 1-9	Health IT (telemental health services), and advanced practice psychiatric nurses are examples of the type of resources that can aid rural PCMHs.	Rural areas have mental health professional shortages. As a result, co-location of specialty mental health in non-urban PCMHs is not a realistic option in most situations.	Yes No clinical outcomes
Kilbourne (2012)[34] Literature RCT Pilot	To determine the impact of Life Goals Collaborative Care (LGCC) on cardiometabolic factors in people with bipolar disorder in community-based settings.	People with bipolar disorder (I, II, NOS) and at least one cardiometabolic risk factor.	USA Community-based mental health outpatient setting.	Three components: Self-management; care management; guideline support. Self-management: Over 6 month period , four 2-hour weekly self- management sessions (active discussions based on social cognitive	1. 9. 6.?	NR	Incomplete lab data (glucose, lipids) to determine necessity for medical care.	Yes. BMI BP HR QOL Functioning (WHO Disability Assessment Scale)

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				theory, covering bipolar disorder and CV risk, stigma, diet and exercise relating to symptom coping, and collaborative care management). This was followed by brief care management from a nurse care manager (CM) contacts to track progress (by addressing symptoms and side effects and facilitating provider communication. Also directly contacts medical/mental health/geriatric providers regarding urgent health concerns based on patient communication or medical record information and provides outreach/crisis management after critical service encounters or missed appointments). Guideline support: A series of one-hour continuing medical education (CME) in-services were held that addressed CVD risk in older patients with bipolar disorder for all primary care and mental health providers. Pocket cards summarizing these recommendations for metabolic syndrome risk monitoring, psychotropic drug toxicity monitoring, and reminders to promote diet and exercise with patients were				

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				also handed out as part of the educational sessions				
Kilbourne (2013)[32] Literature RCT	To determine the impact of Life Goals Collaborative Care (LG-CC) on cardiometabolic factors in VA patients with bipolar disorder.	VA patients with bipolar disorder (I,II,NOS, Schizoaffective bipolar subtype) and at least one CVD risk factor.	USA Community-based mental health outpatient setting.	As above.	As above.	NR	As above.	Yes. Primary: BP Cholesterol Physical HR QOL. Secondary: Lipids Weight/BMI Waist circumference
Kilbourne (2014)[35] Literature RCT.	To determine the impact of Life Goals Collaborative Care (LGCC) on physical health in VA patients with SMI.	VA patients with serious mental illness based on ICD-9-CM (includes schizophrenia, bipolar disorder, major depressive disorder) and at least one CVD risk factor.	USA VA mental health clinic	Three components: Self-management; care management; provider support. Self-management: Five weekly self-management sessions/five group sessions covering SMI facts and risk factors for CVD; personal goal-setting; active discussion on coping and management of psychiatric and medical risk factors; provider engagement and communication tips. Care management: Health specialist conducts ongoing patient contacts monthly for 6 months to reinforce lessons from self-management, track progress on patient-specific physical activity and dietary goals made during self-management sessions, and identify symptoms or other health issues to relay to	As above.	NR	Resources needed to integrate LG-CC into routine VA care.	Yes. Primary: Physical HR QOl (VR-12) Secondary: CV risk factors (BP,BMI) Physical activity

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				providers. Provides links to community resources where applicable. Contacts patient's principle primary care and mental health provider on a monthly basis using electronic medical record view alerts or in-person curbside consultations to relay potential issues brought up when contacting patients, including physical or mental health symptoms, medication side effects, symptoms, or urgent health concerns. Uses registry for recording all relevant information. Provider support: Health specialist provides care plan to primary care and mental health providers after the last care management contact to facilitate ongoing clinical management. They also disseminate information on LGCC program and VA guidelines for CVD risk monitoring to primary care and mental health providers at staff meetings.				
Kilbourne (2015)[58] Literature Conference abstract	See above							No

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Lee (2010)[39] Literature Conference abstract	To evaluate a Personalised Care Programme	Patients with severe mental illness	Hong Kong District-based model	Trained case managers (including psychiatric nurses, social workers, occupational therapists) aiming to provide patient centred care, needs and risk management, gate-keeping to prevent avoidable hospitalization, better treatment adherence, reduction of disabilities, enhancement of recovery, and social inclusion. Programme involves holistic biopsychosocial risk and needs assessment, regular clinical meetings with internal and community partners, service co-location, delivery of phase-specific post-discharge interventions. 365 day case management service with medical supervision and out-of-hours medical support. Central training programme and clinical protocols for case managers to acquire generic core competency.	4. 5.	-	-	Yes, though not reported Clinical symptoms, A&E attendance (proxy measure)

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Maki (2013)[43] Literature Journal article (quality improvement process evaluation)	Describe and evaluate an improved process of identifying and managing CVD factors	People with SMI	USA Community mental health centre psychiatry clinic, targeting centre staff working for or with Assertive Community Treatment (ACT) teams (psychiatrist, advanced practice registered nurse, registered nurses, case managers, and ACT support staff).	Basic education of staff about CVD risk in SMI, plus a CVD screening tool prompting providers to order appropriate laboratory tests and communicate the results to primary care providers (PCPs)	5.1.8.	Education and consensual /shared goals across mental health and primary care settings.	Population with severe mental health symptoms/ Patient compliance. Clinical settings with heavy caseloads, limiting time available to practitioners/incomplete laboratory documentation/process. Insurance companies refusing to pay for laboratory tests if not indicated (i.e. refusing lipid panel orders for patients not taking second-generation anti-psychotics)	Yes Screening rates
Mental Health Foundation, (2013)[27] Literature Report on an Inquiry from 2012-2013 (involving literature search; expert seminars; call for evidence)	To identify good practice, generate discussion, and draw up key messages on integrated health care for people with mental health problems.	People with mental health problems. (By implication, this report covers people with SMI)	UK	The report implies there is no single agreed approach to integrated health care or integrated care. Various generic definitions are presented, including: WHO (2008): "…the organization and management of health services so that people get the care they need, when they need it, in ways that are user-friendly, achieve the desired results and provide value for money".	The report identifies 9 factors of successful integrated care See 1-9 below (footnote)	Two underpinning essential factors: 1. Having the right people in the organisation (leaders who will drive forward integration at a strategic level and staff who understand and respect the roles and responsibilities of other professions and are willing to	-	No.

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				Department of Health (2011): "…most commonly used to express a very practical desire to make sure separate specialist healthcare services work closely together to ensure all a patient's needs are met". Appleton (2009): …"the coordinated commissioning and delivery of services and support to individual in a way that enables them to maximize their independence, health and wellbeing." Lester (2005): Shared care: "the pooling of expertise and enhanced creativity in problem-solving".		work with patients and across organisational and professional boundaries) 2. Cross-boundary inter-professional training and education that must be ongoing with continuing professional development. Key facilitators to implement 1-9: 1. An ability to anonymize and aggregate data to inform a needs assessment of the local population. 2. Staff "buy-in" and commitment. 3.Commissioner awareness of issues beyond traditional health and social care interventions. 4. Staff understanding their respective roles and responsibilities. 5. Effective interprofessional education and staff training. 6. Commissioner		

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						awareness of evidence for services; economic benefits. 7. A single named individual. 8. More research of effectiveness and economic assessment of integrated care. 9. Public and healthcare workforce awareness, education and training on mental health issues.		

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NHS Improving Quality (2014)[49] From field expert contact Case study	To pilot a 12-week education and exercise programme* for young people with SMI. (*SHAPE: Supporting Health and Promoting Exercise) based on "Keeping the Body in Mind" developed at Bondi Beach, Australia.)	Young people diagnosed with psychosis and bipolar disorder.	UK Primary/Secondary/non-NHS organisations	Multidisciplinary 'lifestyle medicine programme'. Partnership model, including Worcester Health and Care NHS Trust Early Intervention in Psychosis service; University of Worcester; McClelland Health and Wellbeing Centre; local private industry; Worcestershire County Council; The Health Foundation/SHINE; South Worcestershire Clinical Commissioning Group. 12-week programme. Baseline physical health MOT for participants. Group health education sessions on healthy eating, smoking cessation, substance abuse, dental care, sexual health and stress management. Programme involved weekly individual sessions with a dietician and an exercise physiologist. Group cardiovascular exercise sessions and advice on how to access these locally. 12-month gym membership. Access to peer support and help with goal setting; 1:1 encouragement and fitness training/taking part in team sports. Partnerships formed with local private industry to sportswear and equipment.	3.? 5. 7. 9.	Adequate funding to sustain the model. Interactive sessions.	NR	Yes. Key physical health risk markers. Weight/fitness levels/behaviour change and engagement with programme.

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NHS London Health Programmes, (2011)[59] Literature search Description of model of care for long term mental health conditions	Describe a model of care for long term mental health conditions (i.e., p29 of report onwards); includes aim to integrate physical and mental health care.	People with long term mental health conditions. likely diagnoses (ICD10) of schizophrenia, schizoaffective disorder, bipolar disorder, recurrent depression, and chronic neurotic, stress related and somatoform disorders.	UK (England); NHS primary and secondary care with links into local authority and third sector.	Broad proposed model of care encompassing inpatient services, secondary services, shared care, primary care, social determinant of health: universal support, involvement of family/carers. Physical health component mainly addressed through primary care, but also included in shared care element. (Relevant principle underpinning the model of care: more active involvement of primary care teams can improve physical health care for those with a long term mental health condition.)	2.	Training in primary care to increase competence and capacity for shared care.	NR	No. Description of a proposed model of care with anticipated benefit for each component. Case studies provided but none addressing physical health needs. Discusses possible outcome measures – generic, which could encompass physical health measures but do not explicitly do so. Also proposes implementation tools and plans, but no further detail.
Nover (2014)[60] Literature Report of pilot implementation	To improve medical treatment for patients with SMI who had a diagnosis of, or risk factors for hypertension, coronary artery disease (CAD), dyslipidemia, and/or diabetes.	Severe mental illness (schizophrenic disorders, recurrent major depression, bipolar disorder) with a diagnosis of, or risk factors for	16-month CalMEND Collaborative to Integrate Primary Care and Mental Health Services (CPCI) programme in a community care clinic in rural California.	Programme coordinated by a social worker (also responsible psychosocial assessments and interventions) with a nurse responsible for medical assessments and interventions. Contracted with dietitian and pharmacist to deliver relevant interventions.	4. 5. 7	Budget for contracting with outside providers and community-based programmes.	Providers sometimes unwilling or unable to refer to the programme. Months of work to identify patients through chart review.	No outcome measurement

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		hypertension, CAD, dyslipidemia, and/or diabetes.		Eligible patients were identified from records or from referrals from the clinic physicians/psychiatrist and asked if they wanted to participate. Baseline assessment of presenting problem, biopsychosocial history, treatment goals (social work assessment); medical history, frequency of tests, self-management of illnesses (nursing assessment). Patients asked to attend clinical weekly-monthly for individualized treatment to meet their treatment goals (typically weight loss, smoking cessation, diabetes management, SMI symptom management)			Important data missing from patient charts. Some patients would agree to participate but not attend arranged assessment. Providers rarely signed "Shared Care Planning Forms". Problems with office staff: scheduling appointments, notification of patient arrival, access to medical charts. Budget cuts forced programme to end early. Insufficient funds for >10 weeks of dietitian involvement. Physical space restriction for nursing assessment.	
Parks (2015)[61] Literature Book chapter	To describe the Medicaid "Health Home (HH)" model.	Chronic conditions, including SMI and substance abuse disorders	US Primary, behavioural, community and social care services.	An expansion of the patient centred medical home (PCMH) model to further enhance integrated care. Service requirements: 1.	Potentially 1-9		Most patients will be going to multiple providers, many of whom will not be providing electronic medical record data.	No Chronic disease management

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		Eligible individuals must have either: two chronic conditions; one chronic condition and risk of having a second or; one serious and persistent mental health condition.		Comprehensive care plan; 2. Quality-driven, cost-effective, culturally appropriate, person- and family-centred, evidence based services; 3. Include prevention, health promotion, health care, mental health, substance use and long-term services, with linkages to community supports and resources; 4. Continuing care strategies including care management, care coordination, and transitional care from the hospital to community; 5. HH providers do not need to provide all the required services themselves but must ensure the full array of services is available and coordinated; 6. Use information technology to facilitate the HHs work and establish quality improvement efforts. HHs required to track avoidable hospital readmissions, calculate cost savings of coordinated care, and monitor the use of health information technology. States are required to track emergency room visits, skilled nursing facility admissions and cost-savings. Procedure: Care manager (CM; often a nurse) uses disease registry to			Such data is necessary to properly identify and track patient populations and individuals needing HH services.	

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				monitor and identify gaps in care and, with other HH team members (e.g. primary care provider, traditional mental health team members), decides who will be responsible for intervening. May or may not be a member of the HH team. CM or delegated team member contacts patient regularly to assess, educate, or intervene as needed. Progress measured using validated standardized tools. CMs use registry to keep track of their panel of patients and ensure they are followed up regularly. Regular HH team meetings to review their panel of eligible patients and prioritise those with greatest immediate need or opportunity for improvement. The team works from a single care plan designed to address all physical health, behavioural health and wellness needs. HH team may be housed in one location or function virtually from different settings.				
Pirraglia (2012)[40] Literature Observational cohort study	Cohort study. To test whether implementation of primary care co-located in mental health setting impacts on health service use and cardiovascular risk factor control.	US veterans with serious mental illness	USA Mental health outpatient unit.	Serious Mental Illness Primary Care Clinic (SMIPCC). Open for 1 session per week/open access to coincide with mental health appointment where possible; walk-in care is allowed and patients seen the same day; staffed by single primary care provider and a patient care assistant.	4.	Open access.	Limited generalisabilty beyond VA population.	Yes. Clinic attendance and attainment of targets for LDL cholesterol, triglycerides, BP, and BMI.

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Rubin (2005)[50] From [80] RCT/process evaluation	To evaluate the addition of an internist to the care of patients on psychiatric inpatient units.	People hospitalized with chronic mental illness	USA Inpatient psychiatric units.	Participants seen within 24 hours of admission by an Internist (working with usual care team). Data collected on medical history, followed by physical examination, and communication with primary care provider about the completion of health maintenance services (e.g., scheduling breast screening, vaccinations, lipid screening), chronic medical problems and medications (either as an inpatient or on discharge). Internist also ordered specialty consultations and formulated smoking and alcohol cessation plans.	4.6.7.	NR	Referrals to expensive health maintenance services such as mammography.	Yes. Care processes, e.g. Number of health maintenance services completed.
Shackelford (2013)[62] Literature Journal article	Describe the population receiving primary care services in a community mental health clinic.	Mental health clinic users. Primarily indigent patients from a large urban area.	USA Outpatient community mental health clinic with a co-located primary care clinic.	Primary care clinic operates 3.5 days per week, staffed by two nurse practitioners and one family physician. Informal referral in which a mental health provider directly places their patient on the clinic schedule or discusses the referral with the primary care nurse liaison. Though no formal referral criteria, the aim was to capture people with a chronic medical illness who are unable to navigate a traditional primary care setting.	4. 6.	The organization of services in this study lends itself to accommodate a "stepped care" approach (i.e. patients level of care being altered according to objectively measured need).-	-	No
Solomon (2014)[63] Literature	To assess the barriers and facilitators to implementation of a transitional care	People with serious mental illness, including major depression;	USA Setting: Upon transition from hospital discharge to community.	TCare (based on targeted case management model; Naylor et al 2013). Ten essential elements of	7.	Integration of TCare into the hospital discharge planning process.	Intensity of physical health need. (Patients with more pressing physical health needs were	No. Rehospitalisation; use of emergency

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Pilot RCT	model (TCare) for patients with serious mental illness.	bipolar disorder; schizoaffective disorder; schizophrenia; psychosis (not otherwise specified).		targeted care management: 1. coordination of care by an advanced practice nurse (APN); 2. a plan developed prior to hospital discharge; 3. Home visits by APN for ~90 days post-hospital discharge and available 7 days a week; 4. Coordination with physicians in community, including accompanying patient on visits; 5. inclusive focus on health needs of patient; 6. Involvement of both patient and family in patient care through education and support; 7. early detection and quick "response to health care risks and symptoms"; 8. Patient, family caregiver, and providers functioning as a team; 9. collaboration of nurse and physician; and 10. Information sharing among all team members. Here, the pilot intervention consisted of a 90-day programme delivered by a psychiatric nurse practitioner (trained in medical and psychiatric assessment/treatment/prescribing). Programme includes assessment, planning, assistance in accessing medical care and social services (based on needs of patient), attendance at appointments and monitoring of services		Team approach involving peers/social worker (to assess patient's social environment/ stability of housing, etc.) and a consulting psychiatrist. Focus on implementation at multiple systems level.	more receptive to TCare). Poor communication and co-ordination between providers. (use of electronic health records/psychiatric advance directives is suggested).	services; medication/health care appointment management and adherence.

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				received. A psychiatrist was available for consultation.				
Stark (2014)[64] From field expert contact Specification for evaluation of the Lester tool (2014)	A proposal to test the implementation of the Lester tool (updated 2014 version) to screen for cardiovascular conditions in patients being treated for SMI.	Patients with SMI	UK Four Strategic Clinical Network (SCN) pilot sites: 1.Cheshire and Merseyside SCN 2.Northern SCN 3.Northern SCN 4.South West SCN	1. Embedding the Lester tool as a standard of physical care in an acute male inpatient mental health unit. Identify training needs and development of care pathways. 2. Develop and co-ordinate physical health link nurses using appropriate training and support. Develop clinical pathways arising from implementation of Lester tool and to link with external NHS agencies and community services. 3. Electronic physical health monitoring system for inpatients (based on Lester tool) to improve data quality between Trust and primary care/community. Increase service user awareness of physical wellbeing. 4. Expand inpatients physical health programme (based on Lester tool) to more inpatients and into community. Expand remit beyond CVD to dental and sexual health. Improve communication with primary care.	1.6.8.	NR	NR	No. Pilot work on-going from October 2014. Final report due December 2015.

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Tallian (2010)[65] Literature Conference abstract	To describe the implementation of a pharmacist-managed Medication Therapy Management Services (MTMS) at an outpatient mental health clinic.	Mental health patients	US, California University hospital outpatient clinic in collaboration with University School of Pharmacy, County Mental Health Services, California Mental Health Care Management Program	Credentialed psychiatric pharmacists providing direct patient-care activities under a collaborative practice protocol with psychiatrists, to patients referred by residents and attending physicians. Included: psychiatric evaluation, medication management, laboratory and adverse effects monitoring, medication adherence assessment, lifestyle, counselling, therapy referral, clinical practice integration.	2	-	Delay in patient referrals, space allocation, acceptance of pharmacists' role at the clinic, changing needs of clinic and County due to diminished state funds.	No Laboratory and adverse effect monitoring.
Ungar (2013)[66] Literature Journal article (service description and pilot)	To pilot a "Reversed shared care" clinic	Mental health patients without access to a primary care physician	Canada Urban community teaching hospital Mental Health Department.	A public insurance-funded primary care family physician and Assertive Community Treatment (ACT) nurse available for appointments one morning per week. Co-located in hospital Mental Health Community Day Treatment, Outpatient, and Outreach services.	4. 5. 6	System-wide and integrated vision of service delivery and resource allocation from decision makers. Willing and interested primary care family physician and committed, passionate staff.	Lack of administrative and institutional support due to perceived increased financial cost and unnecessary co-location, absence of a specified/earmarked budget.	No
Vanderlip (2014)[67] Literature Journal article (survey)	To examine the identification, management, and referral of primary care activities of Assertive Community Treatment (ACT) teams across the United States.	Persons suffering persistent mental illness who also demonstrate difficulty engaging in care.	USA Community-based settings	ACTs provide intensive psychosocial rehabilitation support, combining the services of a psychiatrist, psychiatric nursing, and supportive community living aids in community based settings. They are charged with medication management and assisting with vocational, substance abuse, and housing	5. 7.	Nurse care managers acting as liaisons to primary care for people with SMI. More education of ACT clinicians on recommended preventive health screening and	Deficiencies in training of team members limit their capabilities in taking responsibility for medical care. Failure to take full advantage of staff in addressing medical care.	No

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				services. ACT can support the dissemination of evidence-based practices such as integrated dual-diagnosis treatment and wellness and recovery planning. Attention to physical health needs is a stated goal of the model. Many commonalities with the medical home concept (enhanced access and continuity, patient education and empowerment, comprehensive evidence-based treatment). ACTs teams are designed to function as "mental health homes" and have evolved in parallel with growing PCMH movement.		standardization of an intake process to identify physical health needs.		
Vinas-Cabrera (2013)[33] Literature Before and after study. Written in Spanish. ENGLISH ABSTRACT ONLY	To evaluate the effectiveness of a joint team intervention between primary care and mental health to improve information recording on cardiovascular risk factors.	Patients diagnosed with psychosis	Spain Primary care/mental health care settings	Shared clinical sessions; joint GP-mental health protocol. Patients were selected from primary care	1. 2.	NR in abstract	NR in abstract	Yes. Information recording on smoking; BP; BMI; total cholesterol; HDL cholesterol; triglycerides; glucose; waist circumference; cardiovascular risk.
Von Esenwein (2014)[37] Literature Literature	Review of grey literature to identify electronic health record (EHR) systems to integrate and improve the	People with SMI	USA Cross setting partnerships: Mental health -Community Mental Health Centres (CMHC) and primary care-(Federally	General EHR examples: examining mortality after cardiac surgery; disease monitoring; disease self-management training. Personal health records (PHR);	1.	Electronic PHR shifts locus of control to patient. Funding and training incentives to	Patient: People with low digital literacy and/or psychosocial challenges (poverty, social isolation, unstable living and	Yes. Primary care service use; hospitalisation; physical health measures

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review	mental and physical outcomes of people with SMI.		Qualified Health Centres (FWHC)). Department of Veterans Affairs (VA)/VA sites and outside VA system.	smartphone apps; appointment/medication reminders by text. Programmes: Primary and Behavioural Health Care Integration Grant Programme – funding for CMHCs. To include enhanced computer systems, management information systems and electronic health record integration. Rhode Island example: "Current Care" (system to share electronic patient information between primary and specialist care, pharmacy, hospital and emergency departments) and "Direct Secure Messaging" (point-to-point electronic messaging between providers). California example: e-prescribing; electronic care pathways to track patients. Provision of grants and training; integration toolkit for providers. Missouri example: "Pay to Play" incentives for providers to use CyberAccess (webportal with real-time transmission of health information). Tennessee example : Telehealth consultations with psychiatrists who have access		implement EHR. Allowing patients to opt-in to release health information into the shared system to overcome medico-legal barriers.	work conditions). Provider: time-consuming; system compatibility and patient confidentiality (including legal protections); staff training; lack of financial incentives to implement	(unspecified)

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				to shared electronic health record. New York state example: Psychiatric Services and Clinical Knowledge Enhancement System (PSYCKES) web-based tools to access administrative data.				
Welthagen (2004)[68] From [80] Feasibility study	To evaluate the feasibility of primary care services co-located within an acute psychiatric unit.	Adults with SMI (over 70% had schizophrenia/ bipolar affective disorder)	UK Acute psychiatric hospital	Weekly 3-hour sessions (appointment times 30 minutes each) offering primary care services on 3 acute psychiatry wards. Services included physical diagnoses and treatments, referrals to specialists, health promotion and education. Advice also offered to ward doctors and nurses, including advice on patient management to junior psychiatrists.	4.6.	Professional, kind, and understanding nature of primary care doctor.	Patient anxiety about seeing someone other than a psychiatrist. High demand for services. Generalisability beyond acute setting.	No.

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Yeomans (2014)[47] From field expert contact Cross sectional retrospective study.	To evaluate a computer –based physical health screening template for use with primary care information systems	People with SMI	UK (Bradford and Airedale) Primary care	Computer template designed to be compatible with the primary care information system (SystmOne). Template to support a standard annual physical health check based on NICE guideline for physical health checks in schizophrenia. Also to help GPs submit data returns for the Quality and Outcomes Framework (QOF). Template includes pre-existing data from patient records and facilitates the allocation of tasks (e.g., ordering blood tests) to the primary care team. Results are returned through usual channels in the computer system. Members of staff were offered training on use of the template.	1	Use of computer-based template (versus paper-based template).	Accuracy of data recording. Availability of QOF incentive for annual health checks in primary care.	Yes. Uptake of the template in primary care. Quality and rate of cardiovascular health screening/early detection of high cardiovascular risk.

Key:

* 1. Information sharing systems – e.g. individual electronic records, other IT solutions

2. Shared protocols – setting out the responsibility of each organization (or part of organization) in delivering and agreed service and/or outcome.

3. Joint funding and commissioning – pooled funding and services commissioned across boundaries

4. Co-location of services – e.g. co-location of primary care and specialist mental health staff

5. Multidisciplinary teams – e.g. Community Mental Health Teams (CMHTs)

6. Liaison services – e.g. physical care liaison services in mental health settings

7. Navigators – e.g. a single named individual who can help people navigate their way through complex systems

8. Research

9. Reduction of stigma

‡ We are interested in integration *within* the NHS, but some relevant models may nevertheless touch on other agencies or sectors.