Healthy London Partnership

NHS London Clinical Networks

A review of the scientific literature informing the development of models of primary care in mental health

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Contents

Foreword

I am delighted to introduce a review of the international scientific literature examining primary care mental health (PCMH) model development. The evidence base for PCMH model development detailed here is one of three documents being prepared by the Healthy London Partnership and London Mental Health Clinical Network in response to the need for timely, clinically-effective and cost-effective primary care mental health service development across London. The pan-London scoping document, being published jointly with the literature review, draws together for the first time, data from across the London boroughs detailing the current state of PCMH model development. A guidance document will be published in the autumn which identifies core component parts of PCMH models and aligns these with their evidence base and case studies from around London.

As a London-based GP, I am highly aware of increasing pressures upon primary care mental health services from a growing population and challenging economic circumstances. There is currently renewed focus and interest in the development of care models which help address these difficulties, whilst at the same time deliver care with a greater bio-psycho-social ethos. Development of better-integrated mental health care provision, with care closer to home (in the less stigmatised setting of the GP surgery), nearer to sources of family and community support, sits at the heart of the Five Year Forward View General Practice and PCMH model development. The FYFVGP's 'Ten High Impact Actions,' designed to help release capacity within the primary care system include Partnership Working, Team Development, Social Prescribing and Active Signposting – all of which are central themes in future PCMH model development.

We hope this literature review will help support the development of primary care mental health models, with emphasis on providing access to effective, high quality, integrated mental health care across the whole of London.

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Purpose of the review

Interest in the development of new ways of working to support those with mental health needs has been growing both nationally and internationally since the late 1970s. Initially, new ways of working began as fragmented and uncoordinated initiatives, although they appear to have been more coordinated in the United States of America compared to the United Kingdom. This is likely due to the size and range of different US healthcare providers versus the stand-alone British NHS.

The prompt for initial interest in new care models seems to have been the increasing case load and waiting times for those referred to secondary care services. In the UK, large-scale closure of mental asylums led to a surge of individuals with mental health needs requiring care in the community. Development of Community Mental Health Teams took up the challenge of much of this care provision, their focus being care of individuals with serious and more complex forms of mental illness (such as psychoses). However, as the NHS has faced increasing financial constraints, and a growing population of individuals with treatment needs, this care approach has reportedly led to tensions within the mental health care system. For example, General Practitioners faced caring for individuals with increasingly complex mental health presentations, and reported a perceived lack of support from specialist services to undertake this task.

As a result of these pressures, there has been renewed interest in new or enhanced models of primary care for mental health since the late 1990s. This renewal of interest extends beyond the UK to, for example, the USA, Canada and Australia, where similar population growth demands and increasing economic constraints have also occurred. The formation of Improving Access to Psychological Therapies (IAPT) services in England (beginning in 2008), has transformed treatment of adult anxiety disorders and depression, with over 900,000 people accessing these services each year (NHS England www.england.nhs.uk/mentalhealth/adults/iapt/). The development of adult IAPT services has demonstrated that novel, integrated and effective ways of working can be achieved on a large scale within the NHS of the twenty first century. They can potentially be regarded as a developmental standard when considering wide-range evolution of enhanced models of primary care for mental health.

This literature review aims to draw together the most pertinent research in the area of Primary Care Mental Health model development, specifically to inform the direction of service provision pan-London for those with mental health issues in 2017 and beyond. The review aids the formation of a body of key ‘gold-standard’ components of Primary Care Mental Health models, identified via the key themes arising from the evidence gathered in the review. The ‘core component’ themes will in turn be used form a guidance document to help aid development of primary care mental health services across London. The guidance document aims to promote the formation of services which support individuals in a holistic manner, close to their homes, in the familiar (and comparatively stigma-free) setting of their GP surgery. It is also aimed at building confidence, capacity and capability within mental health provision in the primary care setting: Overall, to support General Practitioners and other primary care staff in their key roles providing care to those with mental health difficulties.

Methodology

A search of the literature was undertaken using the following approaches:

- Scientific databases MEDLINE, Embase, Psychinfo were systematically searched using the initial search terms: ‘primary AND care AND mental AND health AND/OR behaviour*.’ Additional searches then extended and refined the results obtained: ‘new AND/OR enhanced model.’

- Bibliographies of articles found through the database searches were hand-searched.
- Informal requests for literature relevant to the topic were made to those working in this field of study.

Title and abstract were reviewed and full text articles that were screened as potentially relevant were obtained and reviewed against the following inclusion criteria:

- Date of data gathering & reporting.
- English language paper.
- Population (adults over 18 years of age).
- Interventions considered.
- Outcomes of interest.

Review results and key findings

Articles identified via the systematic search were screened against inclusion criteria which included:

- Papers dating from 1980-present day
- English language
- Study population aged 18 years and over
- Interventions considered (new primary care mental health services with a focus on care integration)
- Outcomes of interest
    - Novel primary care mental health service models
    - Clinical outcomes
    - Satisfaction with service provision
    - Access to services
    - System flow & capacity
    - Medication administration & monitoring
    - Sustainability
    - Economic evaluation
    - Training
    - Substance misuse
    - Black & Minority Ethnic populations

Forty-nine papers were chosen for inclusion in the review: An overview of the papers included is shown in Table 6. The papers hand-picked from the search results have been roughly grouped by study design, with meta-analyses and randomized controlled trials (‘gold standard’ for determining effectiveness) taking priority.

The number of papers in each grouping included in this review are as follows:

Table 1

Study Design	Number	Publication date range
Meta-analyses	1	2012
Randomised controlled trials	14	1994-2015
Systematic reviews	11	1985-2011
Case studies and surveys	16	1984-2017

Debate and analysis	7	2002-2016
Total	49	1984-2017

Literature quality

There is a wide selection of 'gold-standard' studies in the field of primary care/mental health model development including fourteen randomized control trials and a meta-analysis. These are primarily from the UK and USA and cover a time interval over the past approximately thirty-year period. Of particular note is the comparatively recent meta-analysis and systemic review by Woltmann *et al.* (2012) which robustly interrogated 57 USA-based and international trials described in 78 published articles. Their analysis is broadly in favour of primary care/mental health model development, with beneficial effects demonstrated on quality of life, social role function and physical quality of life, amongst other indicators. The Woltmann paper also includes a useful summary of the work of Bodenheimer *et al*. (2002) and Badamgarav *et al*. (2003) which outlines the core elements of collaborative chronic care models. There are also fourteen randomized controlled trials focusing on primary care and mental health and a range of case studies, surveys and articles debating the need and usefulness of enhanced model development for mental health. In general, it should be noted however that in several of the randomized controlled trials, clustering has been completed by practice but reporting is on an individual patient basis. Sample sizes are also relatively small in some of these, impacting on the strength of associations that can be inferred between interventions and clinical outcomes. Caution also needs to be observed when considering the generalizability of findings due to several studies focusing on individuals with depression only.

Finally, of importance due to it being contemporary research and at a local, London level, is Röhricht and colleagues' paper on implementation of a novel care pathway for individuals with serious mental illness (paper submitted for publication). Also of note due to its south London focus is the work of Byng and colleagues (2004) and that of Gournay and Brooking (1994) in north London. The work by Strathdee and colleagues (1992) is highlighted: They describe a clear six-stage strategy for establishing psychiatric attachments to general practice, with identification of the key questions which need addressing at each stage. Strathdee's work covers the majority of the key themes identified below in other research works examined.

Key themes arising

Model types

Twenty-three papers examined describe the range of possible models of integrated primary/specialist care for mental health. Gask and Khanna's online supplement (2011), provides one of the most comprehensive lists of different ways of accessing and delivering care at the primary/specialist interface. Integrated care models are frequently cited as being a way of reducing the current 'siloed' nature of mental health care provision i.e. non-integrated primary and specialist mental health care services - Blount (2010) - with low levels of cross-working and communication.

A range of (variously named) models of primary care for mental health are described in the literature (see Table 2). However, there are themes common to many of these. The work of Gask and Khanna (2011) provides a clear and succinct summary of the most common model types, including attached professionals, consultation-liaison and collaborative care approaches. These are summarized below, with some additional comments against each drawn from collated

information derived from other studies. They note that the definitions they included as an appendix to their 2011 paper are 'highly structured' definitions which are now used internationally. Community Mental Health Teams are also identified as a specific model type: CMHT structure has been included as a separate section below due it being a model of secondary care provision, but with components of service that can be translated into primary care mental health provision.

Pincus (1987) and Wulsin and Colleagues (2006) also describe a number of approaches to integrated care models design and a range of key conceptual models. Both papers include a history of integrated care development. Pincus describes in detail his set of six conceptual models of linkage between general health and mental health systems of care (developed in 1979). The linkage model is based around three 'elements': contractual, functional and educational. He describes educational elements as 'aspects of the relationship that serve to establish and reinforce the primary provider's knowledge and skills in mental health.' Contractual elements are in essence the 'nature and content of formal and informal agreements between the two settings,' and examples include mechanisms of patient referral and how data is shared between providers. Functional elements are described as 'aspects of the relationship actually encountered by the patient' and 'consist of those services, and the staff providing them, that directly grow out of the linking relationship.' Pincus's six models are arranged in the conceptual model based upon the extent to which each model emphasises one or more of the three elements. The reader is directed to the original research paper for a diagrammatic representation of the conceptual model of linkage.

Pincus also describes a different set of models which can be developed by examining the relationship between the primary care provider and the mental health provider (specialist). The dimensions formed here are the 'who,' 'what' and 'when.' The 'who' is a measure of the degree of involvement of primary care or specialist provider in the patient's care and can be expressed in units of time as well as characterised by the care provider's role (e.g. psychiatrist). The 'what' is a dimension that encompasses the form of care an individual receives in terms of the primary/specialist relationship existing. Pincus described six relationship types, ranging from autonomous care by primary care provider or specialist, through to independent care, referral, consultative care, and up to joint care where both providers are 'extremely involved.' The 'when' dimension is a description of where interaction between primary/specialist providers occurs along the continuum of a patient's care. Wulsin and colleagues (2006) include a detailed description of The Four-Quadrant Clinical Integration Model, developed by The National Council for Community Behavioural health (Mauer 2002). The model essentially divides individuals by complexity of presentation and by risk, set against appropriate care provider/care approach and was designed to aid care providers explore appropriate population-based responses to mental health difficulties.

Gask and Khanna include 'stepped care' and 'matched care' models amongst their definitions, noting that these are approaches (rather than specific model types) which can combined with the other care models 'to determine how decisions are made about access at the interface.'

Table 2

Model Type	Definition & Details	Key References
Attached Professionals	'Mental health professionals who work in the primary care setting and accept referrals' [Gask & Khanna (2011)]. Such professionals may include: • Clinical psychologists • Community mental health nurses • Counsellors • Graduate mental health workers	Gask & Khanna (2011) Lester *et al.* (2004) Gask *et al.* (1997 & 2001). A similar model is described by Strathdee and Williams (1984) based upon the studies of Williams and Clare (1981). Here it is referred to as an

	The General practitioner (GP) retains overall clinical responsibility.	'attachment-liaison scheme.' It is also covered in a paper by Creed and Marks (1989)
Consultation-liaison	In the consultation-liaison model, specialists and primary care team members work together in formal and informal ways, with regular conversations and true integration of care provision. There is regular face-to-face contact between healthcare professionals from primary and specialist teams. There is feedback and management by the primary care team and there may also be joint management of cases by primary care and specialists. Gask and co-workers state that this model of care in reality can challenge 'the way that professionals relate to each other across organizational boundaries.'	Gask & Khanna (2011) Gask *et al.* (1997 & 2001) Lester *et al*. (2004) Pincus (1987) describes a 'Consultation' model where primary care is the main provider of face-to-face services but 'maintains contact and obtains consultation' (from specialists).
Collaborative Care Approaches	A wide range of definitions exists, encompassing a spectrum of levels of primary/secondary care collaboration. The internationally-accepted definition included in Gask & Khanna's 2001 paper is: • 'Multiprofessional approach to patient care provided by a case manager working with the GP under weekly supervision from specialist mental health clinicians, both for medical and psychological therapies • A structured management plan of medication support and brief psychological therapy • Scheduled patient follow-ups • Enhanced inter-professional communication, patient-specific written feedback to GP's via electronic records and personal contact' One example of a Collaborative Care Approach is the *Shifted-outpatient clinic*: Its aim is to improve the accessibility of secondary care by delivering it in a primary care setting Pincus (1987) describes a 'Joint Care' model where both primary care professionals and specialists are 'extremely involved in the care of the patient.' Pincus notes this form of care may include joint sessions between patient/primary/specialist staff. There is 'frequent communication' between primary care/specialists regarding care of the patient.	Gask, Sibbald & Creed (1996) Creed and Marks (1989) Lester *et al.* (2004) Bailey *et al.* (1994) Pincus (1987) Wulsin *et al.* (2006)
Matched Care	'Staff members work at the interface between primary and secondary care to carry out assessments and filter which patients are most appropriate for each tier of care. This could be face-to-face or via telephone consultations'	Gask & Khanna (2011)
Stepped Care	Individuals are 'stepped up' or 'stepped down' the hierarchy of treatment according to their treatment needs: care levels exist offering different intensity of treatment. Depending on the rigidity of the service	Gask & Khanna (2011)

	approach, individuals may access stepped care at the lowest level or, in other services, at one of multiple points of access.	

Community Mental Health Team – There is widespread development of the Community Mental Health Team (CMHT) model of interface working in the United Kingdom (Gask and Khanna (2011)). This form of working generally involves a psychiatrist (i.e. specialist) working within the community setting and holding a higher caseload of patients, including a higher caseload of individuals with a diagnosis of psychosis. It is included here as it involves a way of working that engages specialists in a different approach to 'traditional' secondary care service forms. Gask and Khanna highlight the national policy incentive for focus of care on server and enduring mental illness, for which psychosis is a proxy measure. However, limited resources in some areas has led to limitation of care access, with the use of 'gate-keeping' and 'triage' models to achieve this. This in turn has led to dissatisfaction amongst primary care clinicians who have difficulty accessing valued psychiatric opinion on management of complex presentations (Gask & Khanna 2011). The approach of 'Link Working' has been tried in some CMHT's, involving looser collaboration between primary care and specialists. Here CMHT team members liaise with specific primary care providers and working approach may involve 'one-off' assessments and telephone assessment of referrals (Gask & Khanna 2011).

Clinical outcomes

Thirteen studies reported positive clinical outcomes associated with primary care mental health model development compared to nine showing no difference or worse clinical outcomes (of which two studies were inconclusive). Again, readers are encouraged to look at the papers noted below in detail as some have relatively small sample sizes and others are limited to examining outcomes for individuals with depression only. However, the results overall can be taken as supportive of primary care mental health model development and help increase the weight of evidence in favour of mental health service provision evolving along such lines.

Positive

Paper	Main Clinical Outcomes Observed
Byng *et al.* (2004).	Intervention patients had fewer psychiatric relapses compared to control patients – in a relatively large study of 335 patients. The intervention consisted of a new role of Specialist Mental Health Worker and planning chronic disease management systems in the practice. The intervention was also felt to have improved partnership working between primary and secondary care.
Coventry *et al*. (2015).	Integrated mental health primary care (which incorporated brief, low level psychological therapy), reduced depression and improved self-management (modest effect size).
Krahn *et al.* (2006).	For older primary care patients with less severe forms of depression, integrated primary mental health services may be more effective than speciality referral.

McElheran *et al.* (2004).	Implementation of a shared model of primary/specialist mental health care resulted in 70% of patients feeling at least 'somewhat better' and 61% of patients said they had acquired some biopsychosocial understanding of their problems. More than 70% of patients also indicated that shared care treatment had improved their ability to cope with their illness and in general.
Richards *et al*. (2008).	A moderate to large effect on reduction in symptoms of depression through uptake of an enhanced primary care model.
Unutzer *et al.* (2002 & 2008).	Of the patients provided with enhanced care, 45% had a 50% or greater reduction in depressive symptoms at 12 months compared to 19% of those receiving usual care. Patient satisfaction with treatment was higher in the intervention group and lower levels of functional impairment at the end of the study.
Woltmann *et al*. 2012.	Moderate beneficial clinical effect in trials of depression. Beneficial effects on mental quality of life, social role function, physical quality of

Negative

Paper	Main Clinical Outcomes Observed
Woltmann *et al*. 2012	One study examined by Woltmann and colleagues (0.8% of total studies included in their analysed papers) showed usual care as more clinically effective than collaborative care approach.
Swindle *et al.* (2003).	No difference in depressive symptoms or patient satisfaction with treatment at 3- and 12-month follow-up for enhanced versus standard primary care for individuals with depression.

Physical and mental health care integration

Many of the studies examined in this review noted the benefits of mental and physical health needs being addressed simultaneously within a single care setting. This was seen as another valuable outcome in the deconstruction of non-integrated, 'siloed' care provision for those with mental health difficulties. The very fact that co-provision of mental & physical health care by one service, in one (community-based) location, is a theme permeating the literature and highlights its key importance. It identifies it as a specific area for research and service development, emphasizing the specific need for focus on reducing the mortality gap apparent between individuals with and without serious mental illness.

Satisfaction with service provision

Patient and provider satisfaction levels associated with new care model development were generally seen to increase when compared to standard care provision. Three studies examined both patient and provider satisfaction levels. One study focused on provider satisfaction alone and four covered patient satisfaction (see Table 6).

Patient satisfaction – This was generally equal to or better than levels of satisfaction with standard primary care services. No significant difference was noted by Byng and colleagues (2004), when examining patients' perception of their unmet mental health needs between collaborative care and usual care provision. Van Orden *et al.* (2009), found no significant difference in patient satisfaction levels between collaborative or standard care. However, it was

noted by Lester and colleagues (2015), that most patients view primary care as the 'cornerstone' of their health care and also preferred to consult their own GP rather than see a different GP with possibly more advanced mental health knowledge. Additionally, Röhricht and colleagues' (2017) patient satisfaction survey in Newham, London, reported comparatively high levels of service user satisfaction.

Provider Satisfaction: van Orden *et al.* (2009). Significantly higher satisfaction levels were reported with collaborative care compared to standard care amongst general practitioners.

Röhricht *et al.* (2017) found high levels of provider satisfaction with a new enhanced pathway for mental health care within a primary care setting – 100% of GP's surveyed in one borough reported they were satisfied with the new service.

Accessibility

Ten studies examined service accessibility and was highlighted as a likely key contributing factor to the success or failure of primary care mental health models being developed. The opportunity to provide care in a familiar setting (GP practice) and near to home are significant in drawing those with currently unmet needs towards health services.

Lester and colleagues (2005), found that individuals with serious mental illness frequently reported a preference for primary care as a favoured form of service delivery. Byng and colleagues (2004), highlight in their discussion the significant number of individuals with mental health needs who do not have contact with specialist services. Enhanced models of primary care could play a key role in meeting the needs of this currently under-supported, non-engaging patient sub-population. Pomerantz and colleagues (2010) demonstrated improved flow of patients into primary care enhanced services and away from secondary care. Presumed mechanisms for this were immediate access, reduced stigma due to primary care setting and shared medical records. Creed and Marks (1989), note that a liaison-attachment model of care allows patients to be seen in 'a familiar setting near to home' and 'without the stigma of attending a psychiatry department.' Provision of service can be seen as potentially providing help for those individuals with mental health needs who may refuse to see a psychiatrist or attend a hospital-based clinic. Swift access is also seen as important to patients (Lester *et al*. 2015), with attention needing to be paid in particular to barriers being created by, for example, noisy waiting rooms.

System flow and 'capacity' issues

Overall, the literature evidence relating to flow of patient through the mental health care system was shown to be improved with development of new models of primary care for mental health. Key examples of flow and capacity improvements measured - such as reduced waiting time for initial appointment, reduction in referrals to specialist services, fewer appointments required - are outlined in Table 4 below.

Table 4

Paper	Key System Flow Outcomes
Jackson *et al.* 1993.	Patient flow was enhanced in a new primary care-based mental health team (in Manchester) with average wait time for non-urgent appointments also falling.
Pomerantz *et al.* (2010).	Collaborative primary care model development led to average waiting time for initial appointment reducing from 6 weeks to 'minutes' (new model versus speciality referral). Number of patients entering speciality care reduced by 58%.

Tyrer *et al.* (1984).	The work was UK-based & demonstrated a 20% fall in the number of psychiatric hospital admissions from General Practices with a co-located psychiatric outpatient clinic.
Van Orden *et al.* (2009).	Shorter referral delay, fewer appointments and reduced overall time in treatment observed with collaborative primary care provision compared to usual care (referral to specialist services).
Williams and Balstrieri (1989).	Demonstrated a steep decrease in psychiatric admissions in areas with greater development of psychiatric GP-based clinics.

Work roles (including new care roles)

There is much discussion within the literature around roles and responsibilities for those working within primary care mental health. Eighteen studies examined covered the development of new care roles, including scope of roles and associated responsibilities. The development of new care roles or extension of functions already in existence depends to a large degree on the form of care model being established (such as in-reach from specialist services to up-skilling of e.g. existing primary care nursing staff). However, at the centre of all proposed work roles, close liaison and collaborative working between primary and specialist services is seen as crucial to service success. A number of examples of work role development found in the literature are outlined below. It is noted that there is also considerable coverage of how clinical responsibility for patient care should be managed: For example, should it remain the role of a consultant psychiatrist within speciality services when a patient transitions back to primary care, or should the general practitioner take over clinical responsibility? With the current move towards increased recognition of patient 'flow' between different healthcare services, including mental health, there is greater emphasis placed on co-operative care of individuals by colleagues working within different areas of the service. This theme is seen strongly in many of the research papers examined. Care is observed as moving away from the concepts of 'admission' and 'discharge' and instead towards individuals transitioning smoothly across a spectrum of co-operative care provision.

Examples of Care Role Development

-Cappocia and colleagues (2004) – Pharmacists based in primary care settings to provide additional medication-oriented support to patients and clinicians. This was effectively creation of a new role within the primary care setting. However, there were no statistically significant differences between the 'enhanced care' compared to usual care in terms of depression symptoms, quality of life, and medication adherence or patient satisfaction.
-Coventry *et al*. (2015) – collaborative patient management within the primary care setting involving trained psychological therapy staff (sourced via IAPT services), general practitioners and general practice nurses.

-Swindle *et al*. (2003). Development of a Mental Health Clinical Nurse Specialist role within primary care – designed treatment plans, worked with the primary care physician in plan implementation and monitoring of patients' progress against agreed outcome measures.

-Unutzer *et al*. (2002 & 2008). A new role of Depression Care Manager was created, providing psychoeducation, behavioural activation, support with antidepressant medication management and problem-solving treatment.

-Bower (2002) discusses the creation of a Primary Care Mental Health Worker role. This role would involve helping develop the skills of primary care staff in mental health, feeding back information on mental health screening to primary care staff, facilitating referral to other groups providing support (such as psychological therapies, or support via the voluntary sector).

Medication administration and monitoring

Although the importance of medication management and patient education on medicines is covered in outline in various studies, only two studies focus on this area specifically, with no research into depot medication administration *per se* (a potential barrier to primary care mental health model success). It is hoped that with the advent of GP-practice based pharmacists, there will be an increased focus on psychotropic medication prescribing and monitoring within primary care, thus enabling more individuals who are stable in mental state on for example, depot antipsychotic medication, to be able to return to the care of their general practitioner, in a familiar, community-based setting.

The findings of the main studies looking at medication provision are as follows: Cappocia and colleagues (2004) described pharmacists working within primary care settings to provide additional medication-oriented support to patients and clinicians. However, there were no statistically significant differences between the 'enhanced care' compared to usual care in terms of depression symptoms, quality of life, and medication adherence or patient satisfaction. However, McElheran *et al*. (2004) showed that 38% of primary care physicians participating in a newly-implemented shared model of care indicated an improved ability to prescribe psychotropic drugs.

Overall, it is clear from the literature available that further research in the area of psychotropic medication prescribing and monitoring is needed to help inform primary care mental health model development.

Training ('Capability and confidence' generation)

Eleven papers reviewed cite a need for increased training of general practitioners and other primary care staff if future development of primary care mental health service provision is to be effective. Lester *et al.* (2004) note the variability in quality of primary mental health care provision and its potential to adversely affect the rate of effective new care model implementation in the UK. Whitley *et al*. (2015) speak of training in mental health recovery needing to be made a core component of the medical curriculum and also a focus of continuing medical education. Röhricht and colleagues (2017) in their recent London-based survey also note the need for additional training for primary care staff in mental health to help provide enhanced primary care services and address the disparity of competence and confidence in mental health care seen between different GP practices. In addition to formal training provision for primary care staff, the literature also identifies the additional benefits of 'informal' training, such as liaison between colleagues during 'tea-break discussions.' Such links and knowledge-sharing would undoubtedly strengthen further with care models in which primary and speciality staff are situated under the same roof.

Financial implications

In the current challenging economic climate, understanding potential costs of new care model development is crucial. This may require redistribution of resources (monetary and staffing) into primary care from speciality services: In this vein, Whitley and colleagues (2015), call for a redistribution of resources from tertiary to primary and secondary care in order to allow greater focus on recovery in a 'holistically-oriented' community health care system. Of the papers included in this review, the nine studies incorporating assessment of cost implications are summarized in Table 5 below. The limited cost-analysis data and the challenges of extrapolating

what is available to the UK setting/current economic circumstances does not make for a strong economic argument in favour of more integrated primary mental health care models. The data summarised below is mixed as to the possible economic benefits of new primary care/mental health integrated models. However, as interest in new models of care grows, with emphasis on care closer to home and integration of care provision - in line with the principles of the Five Year Forward View (2014), The Five Year Forward View for Mental Health (2016) and The General Practice Forward View (2016) – an increasing body of economic data will be available for analysis. What is clear from the literature is that careful financial modelling needs to be undertaken prior to initiating a new primary care mental health model regardless of the form of service development model chosen. Additionally, whilst the economic argument for integrated care models is being shaped in England and elsewhere, the moral argument for developing more joined-up mental health care provision, which is closer to home and closer to family, friends and sources of community support is clearly very strong.

Reduced or neutral care costs demonstrated

Table 5

Paper	Main Financial Outcomes Demonstrated
Buszewicz *et al*. (2011)	Randomised controlled trial based in the United Kingdom examining a GP-based nursing intervention for individuals with a history of recurrent or chronic depression. Cost effectiveness analysis indicated the intervention was not more effective than treatment as usual in terms of quality adjusted life years. However, when examining cost effectiveness and clinical measures, the likelihood of the intervention being more cost effective that treatment was greater than 50% if commissioners were 'willing to pay £300 in public sector costs per point of improvement in depressions and social functioning.'
Gask & Khanna (2011)	The paper describes different models of interface working between primary and specialist mental health services. Gask & Khanna note that there is some evidence that neurotic disorders (anxiety and depression) can be more cost-effectively treated in primary care.
Pomerantz *et al.* (2010)	Cost-analysis of care provision via a new model of collaborative care in the United States (creation of a primary care mental health clinic). Decreased cost of mental health care demonstrated.
Steele *et al*. (2014)	Inconclusive cost benefits following a 2-year Canada-based study examining mental health service and general health service utilisation by individuals with serious mental illness enrolled in new care service models.
Unutzer *et al.* (2002 & 2008)	Cost-analysis of enhanced primary care provision for treatment of depression in later life (US-based), via the development of the IMPACT programme demonstrated IMPACT patients as having lower mean healthcare costs than standard care.
Van Orden *et al.* (2009)	Lower treatment costs cited in collaborative provision of mental health care within the primary care setting in the Netherlands.

Woltmann *et al.* (2012)	Meta-analysis demonstrated collaborative care did not differ in terms of costs from usual care, whilst with systemic review, 90% of studies reported no difference in costs and the remaining 10% favouring the cost outcomes of usual care.

Increased care costs associated with new models of care

Paper	Main Financial Outcomes Demonstrated
Byng *et al.* (2004)	The cost of collaborative intervention demonstrated as an additional £63 per patient, compared to usual standard in general practice.
Simon *et al.* (2001)	Mean incremental cost per person with symptoms of depression for collaborative primary mental health care estimated at $357 (compared to standard primary care provision).

Sustainability

There was little discussion in the literature of how newly created models of primary care mental health could be sustained (or examination of whether they were sustained).

A notable exception to this was the work of Brophy and Morris (2014), who noted in their discursive paper that quickly creating new community-based services which are sufficiently robust would be a challenge. They suggested that different practice clusters could pilot new care models and they could later translate learning across other parts of commissioning groups. For new care models to be effective, they must not only prove themselves capable of delivering improved clinical outcomes at no increased cost, they should be able to provide continuity of care, and for this careful sustainability planning is required from the point of model conception.

Child and adolescent service provision

Although the studies chosen for inclusion in this review were adult-focused, there was no coverage in the literature examined which addressed the important area of care transition from child and adolescent services to adult mental health services.

Black and minority ethnic care provision

Specific coverage of this important area is notably lacking in the research literature. The only paper to examine this specifically was Bindman *et al.* (1997). As part of their UK-based research, they tested hypotheses around differences in care pathways in mental health relating to ethnic background. The theory that Black African or Black Caribbean patients would have lower communication with GP's that GP's knowledge about these patients would be less compared to White patients were not confirmed. Given the diversity in demographic across the 32 London boroughs, early consideration of how service development should be shaped and managed to enable parity of service provision to all is vital from the outset.

Substance misuse

There is very little specific coverage of alcohol or substance misuse in the scientific literature relating to new models of primary care for mental health: only two of the studies examined in this review independently examine this as an area of interest. However, it should be noted that research originating from the United States implicitly covers both mental health and substance

misuse. The term 'behavioural health' is used to cover a wide range of mental health difficulties, medical concerns and psychosocial challenges. Amongst these are management of depression, anxiety, sleep hygiene, substance misuse and smoking cessation (Hunter *et al*. 2009). In response to an estimated sixty percent of psychiatric illness being treated in primary care settings in the United States (Pirl *et al.* 2001), the primary care behavioural health consultation model has evolved which is an integrated, collaborative and co-located approach to meeting the needs of those with difficulties seen in the behavioural health spectrum. The behavioural health consultation model is described in various forms in the papers covered in this review and as such, work involving behavioural health does implicitly extend to substance misuse, but there is a paucity of work examining the impact of new models of primary care mental health on co-morbid mental health/substance misuse specifically. The reasons for the lack of research in this area are unclear, but may be related to commissioning and service delivery challenges for new care models aiming to cover both these highly stigmatised diagnostic areas. Clearly if there is to be comprehensive and robust management of mental health issues within the UK primary care setting, the needs of those with co-morbid alcohol and substance misuse must be considered systematically from the outset of the service planning process.

Papers which do specifically touch upon substance misuse are Krahn *et al*. (2006), who specifically included individuals with at-risk drinking conditions in their study comparing integrated care and enhanced referral models in depression outcomes. Conversely, the study exclusion criteria of Simon *et al*. (2001) includes a CAGE questionnaire score of 2 or higher.

Review limitations

This review is far from exhaustive, and due to constraints upon the final size of the review document, not all studies identified could be examined in detail. Relevant papers not covered are listed in the extended bibliography.

Studies included here are drawn from developed, English-speaking counties. Although this aids extrapolation of concepts due to gross similarities in demographic factors, it risks missing out on extra-ordinary models potentially being developed elsewhere. There may be much to learn, for example, from countries with fewer available resources in terms of care organization and maximization of use of the comparatively rich supply of resource available in the UK.

The scope of this review is adult care provision only and does not address child and adolescent care delivery. However, it is of note that there appears to be a paucity of research into new care models for children and young people, and this area would certainly warrant its own examination of possible enhanced service development.

In Summary

There are a large number of research papers available examining models of primary care for mental health, primarily from the United States and the United Kingdom. Authors describe a spectrum of integration intensity between primary/specialist services: relatively unintegrated situations where specialists run outpatient clinics in health centres (with little interaction with primary care staff), to highly sophisticated integrated ways of working (with high-level interaction, formalized and informal communication between primary and specialist colleagues).

The literature highlights that appropriate training, through both formal and informal channels, should be reviewed for all primary care staff, not only general practitioners when new models of primary care for mental health are developed. The value of knowledge sharing through, for example, systematic teaching and time-protected case-based conferences, was a clear

perceived benefit identified in many studies, building and cementing relationships between different care providers and breaking down care 'siloes.'

There are clear areas of future required research highlighted through this literature review, in particular integrated care provision for individuals with co-morbid alcohol and substance misuse, care provision for black and minority ethnic populations within the UK. The scope of this review is adults over the age of 18 years. However, there is a lack of research relating to care provision directed towards young people transitioning from child and adolescent to adult services. Further research needs to be undertaken to help establish the evidence base for social care access as being a key aspect of integrated care model development: More longitudinal data is required to help address whether patients with serious and long-term mental illness will retain a level of social inclusion without the input from care coordinators/navigators. Finally, further research needs to establish reliable criteria for discharge back to primary care from specialist services and also integrated care outcome measures: Both are highly variable in nature amongst the literature reviewed.

It is likely that no specific model will be a 'fit-all' solution: Rather, key component 'gold-standard' parts and 'themes' will need to be considered for different demographic and geographical areas, directed by available scientific evidence, knowledge of local population needs and by available resources. Nevertheless, whichever model or component parts are chosen, the literature makes clear that careful planning and a clear strategy of implementation (such as the six-stage strategy of Strathdee and colleagues), will need to be agreed upon at the outset of any project for it to be successful. Outcome measures appear to be rather sporadic in the literature reviewed, but again are seen as being of key importance right from the point of project inception – how otherwise are we to know that scarce NHS resources are being employed most effectively?

Overview and focus of scientific literature reviewed

Table 6

	Area Covered in Paper								
Author(s)	Country of Origin	Paper Type	Population Size	Positive Clinical Outcomes	Negative or Neutral Clinical Outcomes	Model Types	Flow/ Capacity	Care Roles	Training
Bailey *et al.* (1994)	UK	Survey	50 hospitals			✓	✓		
Bauer *et al.* (2011)	USA	Quantitative evaluation	2821 patients		Inconclusive	✓		✓	✓
Bindman *et al.* (1997)	UK	Survey	100 patients					✓	
Blount (2010)	USA	Editorial – review of current evidence	N/A			✓			
Bower (2002)	UK	Debate & analysis paper	N/A	✓	✓	✓	✓	✓	
Brophy & Morris (2014)	UK	Debate & analysis paper	N/A			✓		✓	✓
Buszewicz *et al.* (2011)	UK	RCT	42 general practices/558 participants	✓			✓		✓
Byng *et al.* (2004)	UK	Cluster RCT	23 general practices/335 participants	✓					
Capoccia *et al.* (2004)	USA	RCT	74 participants		✓			✓	
Chung *et al.* (2016)	USA	Service development theory/ discussion paper	N/A			✓		✓	

	Area Covered in Paper								
Author(s)	Country of Origin	Paper Type	Population Size	Positive Clinical Outcomes	Negative or Neutral Clinical Outcomes	Model Types	Flow/ Capacity	Care Roles	Training
Coventry *et al.* (2015)	UK	Cluster RCT	36 general practices/387 participants	✓				✓	
Creed & Marks (1989)	N/A	Systematic review	N/A			✓	✓		
Druss *et al.* (2010)	USA	RCT	120 patients	✓				✓	
Gask & Khanna (2011), Gask *et al.* (1997)	N/A	Systematic review	N/A	✓		✓		✓	
Gournay & Brooking (1994)	UK	RCT	6 general practices/177 participants		✓			✓	✓
Jackson *et al.* (1993)	UK	Service evaluation	1 community health team studied				✓	✓	
Kendrick (2015)	UK	Debate & analysis paper	N/A			✓			
Kendrick *et al.* (1991)	UK	Survey	507 general practitioners					✓	
Kirchner *et al.* (2010)	USA	Service evaluation	Coverage across the South Central Veterans Association Health Care Network (10 medical centres)		Inconclusive	✓	✓	✓	✓
Krahn *et al.* (2006)	USA	RCT	10 health centres	✓					
Lester *et al*. (2004)	N/A	Literature review/ debates & analysis paper	N/A			✓		✓	✓
Lester *et al.* (2005)	UK	Qualitative study	45 patients, 39 general practitioners, 8 practice nurses					✓	
London Health Programmes (2011)	UK	Debate & analysis paper	N/A			✓			
Low & Pullen (1988)	UK	Retrospective cohort study	Edinburgh-based psychiatric clinics (hospital and primary care settings)			✓	✓		
McElheran *et al.* (2004)	Canada	Service evaluation	Service catchment area of 850 000 individuals	✓			✓	✓	✓
Mitchell (1985)	N/A	Literature review	N/A			✓	✓		
Pincus (1987)	N/A	Service model theory discussion paper	N/A						
Pomerantz *et al.* (2010)	USA	Service evaluation	1 collaborative care service				✓		
Pullen & Yellowlees (1988)	UK	Survey	195 consultant psychiatrists			✓			

	Area Covered in Paper								
Author(s)	Country of Origin	Paper Type	Population Size	Positive Clinical Outcomes	Negative or Neutral Clinical Outcomes	Model Types	Flow/ Capacity	Care Roles	Training
Richards *et al.* (2008)	UK	RCT	114 participants	✓					
Röhricht *et al.* (2017)	UK	Service evaluation	3 boroughs				✓		✓
Scharf *et al.* (2014)	USA	Service evaluation	Variable (multi-approach study)	✓	✓	✓			
Simon *et al.* (2001)	USA	RCT	228 patients	✓					
Steele *et al.* (2014)	Canada	Cross-sectional survey	7 344 398 patients in total between 3 forms of service model			✓	✓		
Strathdee *et al.* (1992)	N/A	Service development theory paper	N/A			✓			
Strathdee & Williams (1984)	UK	Survey	811 consultant psychiatrists & psychotherapists			✓			✓
Swindle *et al.* (2003)	USA	RCT	268 individuals		✓			✓	
Thornicroft & Tansella (2004)	N/A	Literature review	N/A			✓	✓		
Thornicroft *et al.* (1998)	N/A	Review of literature and previous study findings	N/A			✓	✓		✓
Tyrer (1984), Tyrer *et al.* (1984)	UK	Service evaluation	Population catchment area of 380 000 individuals				✓		
Unutzer *et al.* (2002, 2008)	USA (both papers)	RCT (both papers)	1801 participants	✓				✓	
Van Orden *et al.* (2009)	The Netherlands	Cluster RCT	27 general practices		✓		✓		
Whitley *et al.* (2015)	N/A	Literature review/debate & analysis	N/A			✓			✓
Williams & Balestrieri (1989)	UK	Retrospective cohort study	All regions in England over an 18 year period			✓	✓		
Woltmann *et al.* (2012)	N/A	Systematic review & meta analysis	57 studies examined across 78 research articles	✓	✓				
Wulsin *et al.*	N/A	Service development theory/ discussion paper	N/A						

Table 6 (continued)

	Area Covered in Paper									
Author(s)	Access	Sustainability	Cost Benefit	Cost Neutral	Cost Increase	Provider Satisfaction	Patient Satisfaction	BME	Substance Misuse	Medication Administration
Bailey *et al.* (1994)	✓									
Bauer *et al.* (2011)										
Bindman *et al.* (1997)						✓	✓	✓		
Blount (2010)										
Bower (2002)							✓			
Brophy & Morris (2014)		✓								
Buszewicz *et al.* (2011)	✓		✓	✓			✓			
Byng *et al.* (2004)					✓		✓			
Capoccia *et al.* (2004)							✓			✓
Chung *et al.* (2016)										
Coventry *et al.* (2015)										
Creed & Marks (1989)	✓									
Druss *et al.* (2010)										
Gask & Khanna (2011), Gask *et al.* (1997)			✓							
Gournay & Brooking (1994)										
Jackson *et al.* (1993)										
Kendrick (2015)										
Kendrick *et al.* (1991)										
Kirchner *et al.* (2010)										
Krahn *et al.* (2006)	✓									
Lester *et al.* (2004)	✓	✓								
Lester *et al.* (2005)	✓									
London Health Programmes (2011)										
Low & Pullen (1988)		✓				✓			✓	
McElheran *et al.* (2004)	✓									✓
Mitchell (1985)										
Pincus (1987)										
Pomerantz *et al.* (2010)	✓		✓			✓	✓			
Pullen & Yellowlees (1988)										

	Area Covered in Paper									
Author(s)	Access	Sustainability	Cost Benefit	Cost Neutral	Cost Increase	Provider Satisfaction	Patient Satisfaction	BME	Substance Misuse	Medication Administration
Richards *et al.* (2008)										
Röhricht *et al.* (2017)						✓	✓	✓		
Scharf *et al.* (2014)	✓								✓	
Simon *et al.* (2001)					✓					
Steele *et al.* (2014)				Inconclusive						
Strathdee *et al.* (1992)										
Strathdee & Williams (1984)										
Swindle *et al.* (2003)										
Thornicroft & Tansella (2004)		✓								
Thornicroft *et al.* (1998)										
Tyrer (1984), Tyrer *et al.* (1984)	✓									
Unutzer *et al.* (2002, 2008)			✓				✓			
Van Orden *et al.* (2009)			✓			✓	✓			
Whitley *et al.* (2015)										
Williams & Balestrieri (1989)										
Woltmann *et al.* (2012)				✓		✓	✓			
Wulsin *et al.*										

Expanded reference list

NB: Paper marked (*) denote those included in the literature review

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