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Threapleton, DE orcid.org/0000-0002-5884-3372, Chung, RY, Wong, SYS et al. (5 more authors) (2017) Integrated care for older populations and its implementation facilitators and barriers: A rapid scoping review. International Journal for Quality in Health Care, 29 (3). pp. 327-334. ISSN 1353-4505

https://doi.org/10.1093/intqhc/mzx041

Integrated care for older populations and its implementation facilitators and barriers: a rapid scoping review

Running title: Implementation in integrated care

Manuscript words: 2944

Abstract words: 248

Figure 1 caption: 'Figure 1: Stages of searching, evidence synthesis for elements of integrated care and implementation issues in older and frail populations '

Abstract

Purpose: Inform health system improvements by summarising components of integrated care in older populations. Identify key implementation barriers and facilitators.

Data sources: A scoping review was undertaken for evidence from MEDLINE, the Cochrane Library, organizational websites and internet searches was undertaken. Eligible publications included reviews, reports, individual studies and policy documents published from 2005 to February 2017.

Study selection: Initial eligible documents were reviews or reports concerning integrated care approaches in older/frail populations. Other documents were later sourced to identify and contextualise implementation issues.

Data extraction: Study findings and implementation barriers and facilitators were charted and thematically synthesised.

Results of data synthesis: Thematic synthesis using 30 publications identified 8 important components for integrated care in elderly and frail populations: (i) care continuity/ transitions; (ii) enabling policies/ governance; (iii) shared values/goals; (iv) person-centered care; (v) multi-/inter-disciplinary services; (vi) effective communication; (vii) case management; (viii) needs assessments for care and discharge planning. Intervention outcomes and implementation issues (barriers or facilitators) tend to depend heavily on the context and programme objectives. Implementation issues in four main areas were observed: (i) Macro-level contextual factors; (ii) Miso-level system organisation (funding, leadership, service structure and culture); (iii) Miso-level intervention organisation (characteristics, resources and credibility); and (iv) Micro-level factors (shared values, engagement and communication).

Conclusion: Improving integration in care requires many components. However, local barriers and facilitators need to be considered. Changes are expected to occur slowly and are more likely to be successful where elements of integrated care are well incorporated into local settings.

Keywords: Health services research, Implementation issues, Integrated care, Older populations, Scoping review

Background

The demographic shift towards a growing ageing population has major social and economic implications for many countries{UN, 2013 #1823}. 'Integrated care' within and between medical and social services has become a focal point in the delivery of quality health care for ageing populations and service models for integration are being developed and evaluated in different countries{Beland, 2011 #135;Goodwin, 2011 #154}. Frail and elderly populations may particularly benefit from integrated care because their needs are complex, continuously changing, and they require a range of services provided over a long time-frame{Janse, #2694}.

Integration can be simply be defined as 'The management and delivery of health services so that clients receive a continuum of preventive and curative services, according to their needs over time and across different levels of the health system'{Waddington, #2646}. However, integration is a complex process and can be conceptualised in a number of ways. Horizontal integration involves linking similar levels of care (e.g. multidisciplinary teams) and vertical integration links different levels of care (e.g. through disease-specific care pathways). To achieve system-wide integration, different strategies are needed: (i) Systemic integration (policy, rules or regulatory frameworks); (ii) Normative integration (shared values and culture); (iii) Organisational integration (structures, governance or relationships); (iv) Administrative integration (back-office functions, budgets or accountability); and (v) Clinical integration (coordinating services and information to focus on patient care within in single process){Shaw, #2647}.

No single best model or guidelines exist for integrating care{Maruthappu, #2691}, making the delivery of integrated care for ageing populations challenging. The process of integration therefore requires multiple initiatives throughout different services and professions of the health system. However, integration efforts are often costly, labour-intensive and are prone to failure{Janse, #2694}. Planners and providers must be aware of effective elements of integrated care, understand the needs within their own context, and apply implementation knowledge to address local integration strategies.

There is a growing body of literature relating to integrated care, but few previous reviews summarise practical implementation issues across different components of integrated systems or in different care settings, to inform implementation of integrated care for old and frail populations. Our aim was therefore to identify important domains of integrated care systems for older and frail populations and to concisely present evidence on implementation issues, as a resource for implementing health system improvements.

Search strategy and methods of review

First, a scoping review was conducted, according to published methods, to identify key themes in integrated care for older populations{Arksey, 2005 #1821}. Once saturation of key themes was reached through the scoping review, targeted searches were conducted to provide up-to-date evidence relating to implementation issues (Figure 1).

Stage 1 Scoping searches: Review studies were first identified from the Cochrane database of systematic reviews and from Medline. Further targeted internet searching was then carried out for governmental/organizational documents, or other evidence, to fill gaps in elements of care

or care settings. Bibliographies of included studies were screened for other potential documents. A pragmatic publication date cut point of 10 years was adopted to focus findings on more recent studies and documents. Included literature therefore initially spanned from 2005 to 26th January 2015. Post-hoc inclusion criteria were developed based on increasing familiarity with the identified studies; a standard approach in scoping reviews{Arksey, 2005 #1821}. Review articles from MEDLINE and the Cochrane database were included when reporting (i) care quality, integrated health and social care, or person-centered care, (ii) in older or frail populations, and (iii) care delivered in mainstream settings such as hospitals, sub-acute care and community care. Publications focusing on terminal or end-of-life care were excluded. Potentially relevant Medline and Cochrane citations were reviewed by two researchers, using standardized inclusion criteria. The same criteria were applied to literature from other sources, but the study design was not limited to review articles, and iterative searching was conducted by one researcher.

Stage 2 Thematic synthesis of key elements of integrated care: Articles were systematically read and main themes in results/ discussion were extracted. Thematic synthesis was used to identify and link common themes into categories by coding data according to emerging themes. Findings were then narratively synthesised. The heterogeneous nature of evidence from systematic reviews, summary reviews, individual trials and policy documents made quality assessment impractical and instead, relevant articles were selected until saturation of themes was achieved.

Stage 3 Focused searches: Supplemental searches using Cochrane, Medline and the internet were undertaken to identify evidence relating to implementation (barriers or facilitators) of integrated care policies or programmes. Update searches included literature published in the prior 5 years, and up to January 2017.

Results

The thematic synthesis included 30 articles from the following sources: Cochrane (n=7){Ellis, #46;Hodgkinson, #44;Shepperd, #49;Shepperd, #50;Shepperd, #47;Smith, #43;Ward, #45}, Medline (n=5){Etters, #190;Lawrence, #180;Parsons, #37;Pimouguet, #184;Pinquart, #38}, internet searches and government websites (n=12){Allen, #133;Beland, #135;Dubuc, #148;Eklund, #109;Goodwin, #154;Khanassov, #156;Linertova, #114;Ling, #140;Low, #115;Minkman, #153;Mirzaei, #197;Wong, #158}, articles to address evidence gaps identified by research team members (n=4) {Billings, #1822;Tsasis, #208;Dawda, #201;Pelzang, #212}, and from reference lists of already included studies (n=2){Goodwin, #214;McMillan, #210} (Study list in online supplemental table). The reports could largely be grouped in two categories: (i) those reporting on general approaches to improve quality of care through integrating services across the whole health system and (ii) those focusing on one element or component of integrated health care or focusing on care in specific setting such as within hospitals, sub-acute settings or in the community. Eight key elements of integrated care were found in the thematic synthesis (Table 1). Despite the variation in included publications, common implementation issues were shared among studies (Table 2).

Developing and evaluating integrated programmes

The continuing priority for integration of health services, among many governments, means the need to develop and evaluate methods remains a key issue{Greaves, #2695}. There are several established approaches to inform development and evaluation of integrated care models such as the 'Development model for integrated care', 'INTERLINKS framework', and 'COMIC model'{Minkman, #153;Billings, #2707;Busetto, #2699}. These approaches are all likely to be informative in developing and evaluating integrated care programmes because they are multi-component, focus on quality patient-centered care and consider, or may be adapted to, individual, professional, organizational and system levels.

Ongoing cross-site comparison studies, for structured approaches to integrate care, will likely explain how or what makes programmes successful overall, such as in project INTEGRATE{Cash-Gibson, #2708}. However, robust evidence for the most beneficial or effective approaches for integration may remain elusive, as programmes are both complex and diverse, as in the case of the INTERLNKS study{Billings, #2707}. Targeted process evaluations, such as from the perspective of certain professional groups, may inform about which components contribute to the process of integration and may be particularly useful in illuminating how integration occurs in different settings{Janse, #2694}. Each group of researchers may therefore wish to tailor their evaluation tools to meet specific project objectives.

Core components of integrated care for frail or elderly populations

1. Continuity in care and effective transitions

There are often large divides between primary and secondary services or between health and social services and improving coordination, such as streamlining services (improve efficiency) or

building networks, will improve the quality of care{Goodwin, #154}. Transitions from inpatient to community care are hindered by ineffective communication, confusion over provider roles and responsibility and a diluted sense of individual responsibility when care spans many providers{Toscan, #2732}.

Sub-acute services, or hospital at home schemes, that bridge the gap between inpatient and general community care, have provided (weak) evidence of effectiveness in terms of clinical and service use outcomes{Shepperd, 2008 #49;Dawda, 2014 #201}. However, success may depend more on targeting ideal patients rather than the setting or intensity of interventions{Linertova, 2011 #114}. In specific situations, early discharge schemes appear extremely effective in lowering readmission rates, which supports the view that targeting ideal patients and providing comprehensive services may lead to improvements in care{Dawda, 2014 #201}.

2. Formal policy and governance

Formal policy is recognised as important for integrating care so that providers can coordinate services and work within common governance{Goodwin, 2014 #214;Beland, 2011 #135;Eklund, 2009 #109}. Policy or guidelines may facilitate professional engagement, leadership, credibility and shared values, all of which are identified as essential for successful service integration{Ling, 2012 #140}. Although integrated care policies are important, those that are designed to permit autonomy and adaption within the system may be more effective, so practices and procedures can develop over time to suit the environment{Tsasis, 2012 #208;Goodwin, 2014 #214}. Key barriers to implementing policy for integration include operational complexity, regulatory

challenges, unclear financial contribution and cultural inertia{Maruthappu, #2691}. Governmental leadership can facilitate integration through (i) realigning funding, (ii) formulating multi-stakeholder, representative leadership coalitions, and (iii) developing models or frameworks for the leadership coalitions to follow {Maruthappu, #2691}.

3. Shared values and common goals

Having common goals or feeling involved in changes is important in individual health professional acceptance towards integrated care. For example, lack of community doctor engagement, the feeling of personal role erosion, feeling underprepared, uninvolved and unsure about what each person is permitted to do, and a strong permission culture are barriers to change{Ling, 2012 #140}. Shared values can be facilitated by clear guidelines of the purpose of changes, giving individuals permission to instigate changes, engaging, encouraging, providing leadership, developing skills, changes in culture at clinical and managerial levels, and through formal policies{Goodwin, 2014 #214;Beland, 2011 #135;Eklund, 2009 #109;Maruthappu, #2691}.

4. Person-centred care

Recent policy rhetoric frequently endorses patient centeredness as a desirable attribute of the care system{Mirzaei, 2013 #197} but evidence is lacking about how to successfully implement person-centered care (PCC){McMillan, 2013 #210}. Evidence of strong benefits for clinical outcomes or satisfaction, when adopting a PCC approach, is weak but implementation barriers often prevent models being fully adopted{Low, 2011 #115;McMillan, 2013 #210}. Staff

shortages, in addition to a strong focus on the biomedical model in care, are considered significant barriers to implementing PCC{Pelzang, 2010 #212}.

5. Multi- and inter-disciplinary services

Having multi- or inter-disciplinary teams will likely contribute to the process of horizontal integration through developing common goals or values and through improved communication. Existing community service structure is often complex and a simple pattern of services, based around multi-disciplinary primary care teams and designed according to the natural local geography may facilitate integration{Edwards, #2119}. Co-location, where case managers and other professionals occupy the same work space, can help newly integrated teams because people have better access to the appropriate professional knowledge by increasing communication frequency and quality{Ling, 2012 #140}.

6. Effective communication

Maintaining regular, ongoing and pre-planned communication between senior partners in the relevant organizations is important for success in integrated care interventions{Ling, 2012 #140}. Between medical and care staff, regular meetings and joint training sessions can promote cooperation and information sharing, while a common database will help the flow and exchange of information{Billings, 2005 #1822}. However, a common barrier to communication can be concerns surrounding data security, sharing and privacy{Ling, 2012 #140;Ashton, #2692}.

7. Case management

Case managers, often a nurse or social worker, are the central coordinator in effective multidisciplinary teams for integrated services{Beland, 2011 #135;Goodwin, 2014 #214;Pimouguet, 2010 #184}. Case management is associated with promising results for clinical outcomes, time to institutionalization or hospitalization, improved function, improved use of appropriate medication, and increased use of community services{Low, 2011 #115;Pimouguet, 2010 #184}. . Case management may be more effective when it is high intensity, includes effective communication between services, and when specialists are included in the care of complex cases{Khanassov, 2014 #156}. Barriers to implementing effective case management include: a misunderstanding about the responsibilities of case managers, poor communication between health professionals, a lack of geriatric training, poor integration of case management services in the existing care system, high case manager turnover, different locations of case managers and primary physicians, large caseloads, and time constraints{Khanassov, 2014 #156}.

8. Comprehensive assessment to inform care and discharge plans

Assessments are considered integral to planning and delivering quality care and evidence supports service reorganisation to provide Comprehensive geriatric assessments (CGA){Ellis, 2011 #46} in order to provide needs-matched individualised care. CGA in hospitals may have beneficial outcomes, including the proportion of patients living at home, institutionalization and cognitive function. Studies recommend that assessments should be conducted by experienced or trained staff, in multi-disciplinary teams and be multi-dimensional{Billings, 2005 #1822;Ellis, 2011 #46;Dawda, 2014 #201}.

Discharge plans aim to improve care efficiency and quality by reducing discharge delay, facilitating transport to the post-discharge setting, providing patients with appropriate information on their condition and outlining post-discharge support needs{Shepperd, 2013 #47}. Goal setting and discharge planning will be more successful when resources for treatment or rehabilitation exist{Ellis, 2011 #46}. Effective discharge planning is determined by standardized and policy-driven protocols. Additionally, clarifying the roles of health professionals, having a designated coordinator, empowering nurses to participate in the process and communicating more with patients and their care-givers may facilitate the discharge planning process and provide integrated, needs-matched care{Wong, 2011 #158}.

Implementation issues

Overall, key implementation issues in four main areas were observed: (i) Macro-level contextual factors; (ii) Miso-level system organisation (funding, leadership, service structure and culture); (iii) Miso-level intervention organisation (characteristics, resources and credibility); and (iv) Micro-level factors (shared values, engagement and communication) (Table 2).

Understanding the broad structural, political, economic and cultural context when implementing and scaling up integrated care models is essential{Ashton, #2692}. However, although macro-level (external context) and meso-level (organisational) integration is important in the process, increasing attention is being given to interventions focused on micro-level (provider/ patients) integration{Janse, #2694;Ashton, #2692}. Integration is a complex and non-linear process and such micro-level operational activities, such as, teamwork,

knowledge exchange and communication, have more recently become the focus of research{Janse, #2694}.

Having well-funded multi-disciplinary teams, that participate in frequent communication and share common values, was frequently identified as a necessary feature for successful integration of services{Dawda, 2014 #201;Ellis, 2011 #46;Goodwin, 2014 #214;Shepperd, 2008 #49;Wong, 2011 #158}. Integration is achieved by careful planning and financing, shared vision and a focus on providing care centered around patient needs{Maruthappu, #2691}. A strong factor in determining whether programmes are successful is the identification and targeting of suitable patient populations{Maruthappu, #2691}. Funding allocation is also a core factor in facilitating integration of services, and can incentivize and reward stakeholders that meet established criteria{Maruthappu, #2691;Ashton, #2692}. Funding should be realigned, pooled and ring-fenced to facilitate integration of services{Maruthappu, #2691}.

When interventions or planned changes are large, changes will inevitably be slower to take effect. Greater investment in preliminary work with will therefore be required, in which mutual understanding of aims and roles is achieved among all participants, to avoid confusion. Risk-averse or permission-based cultures may also inhibit innovation and staff motivation towards changes{Goodwin, 2011 #154;Ling, 2012 #140}, and it is therefore also important that those involved in delivering interventions are encouraged to take autonomous actions to improve service{Dawda, 2014 #201;Ellis, 2011 #46;Goodwin, 2014 #214;Shepperd, 2008 #49;Wong, 2011 #158}. Implementing changes may also be facilitated through training stakeholders on the potential pitfalls of the implementation process{Ijkema, #2696}. Thus, stakeholders may be

empowered to identify and address common barriers as they are encountered. In terms of implementing programmes to care for older patients, building flexibility into programmes was found to be beneficial so that professionals have choice on which actions to take, based on patient needs{Ijkema, #2696}, and thus care can be tailored around the patient. Additional facilitators include suitable information technology infrastructure and appropriate methods for programme evaluation{Maruthappu, #2691}.

Discussion

Integrating care for older people requires some common elements, irrespective of the care setting or system, and globally, there is a drive to deliver better and more efficient care by integrating services. It is challenging to identify single successful elements of integrated care because programmes often include multiple components, study designs may be poorly reported and intervention success depends heavily on the context{Beland, 2011 #135;Eklund, 2009 #109}. Many reviews conclude that no single model or approach for integrating care exists{Beland, 2011 #135;Dawda, 2014 #201;Goodwin, 2014 #214}. Providers may benefit from focusing on how best to combine successful features of models to improve care{Low, 2011 #115}, and allow services to develop over time{Goodwin, 2014 #214}. Thus, in this review, we summarise common features of integrated service models, rather than provide detailed descriptions of existing models (for comprehensive descriptions of care models, please refer to existing reports{Beland, 2011 #135;Goodwin, 2014 #214}). Our review draws together the important elements for integrating health care services for older populations and also focuses on practical implementation features that can facilitate or hinder success.

The rapid and less-formal methodology adopted in scoping reviews, as compared to systematic reviews, is a clear limitation and it is possible that key elements of integrated care or important implementation issues were not captured. However, studies were sought until theme saturation was achieved. Scoping reviews are a relatively new methodology, and no universal definition or procedure for conducting such reviews, exists{Pham, #2729}. Scoping reviews aim to present an overview of a potentially large and heterogeneous body of literature{Pham, #2729}. Given the diversity in existing literature pertaining to integrated care, a scoping review methodology was selected as a practical way to summarise key themes in integration. An additional limitation is the lack of study quality criteria, which may decrease confidence in findings. However, standard quality assessments may have limited application when evidence is drawn from heterogeneous sources.

The core components of integrated care programmes we identified are inter-linked and all focus on integrating care at a service, organisational, clinical and/or individual levels, and by placing the patient at the centre of care. Because effectiveness, barriers and facilitators for interventions appear to depend heavily on the context, we eagerly await findings from large (multi-site/multi-intervention) studies in integrated care, such as the SUSTAIN programme{CORDIS, #2733}. This integrated care programme across several European settings aims to identify what works, for whom, in what context. Until then, and even if robust evidence is generated from this study, implementing changes to improve integrated care will likely benefit from using both local and international evidence. Though it may not be possible to determine which components within complex interventions are effective, we recommend that

studies report on the logic and development of their integrated care programmes, in addition to comprehensive evaluation of both intervention outcomes and implementation processes.

Conclusion

The pace of research in the field of integrated care, and how best to implement changes, continues to increase. There are now many established resources available, to inform the development and evaluation of integrated care programmes. Care for elderly and frail persons may be improved through integration by: (i) understanding the levels and modes through which integration may take place; (ii) understanding the key components of integrated care for older populations; and (iii) anticipating implementation issues, in order to effectively make changes within different care contexts and settings.

References:

Table 1: Core components of integrated care for older and frail populations, identified from a scoping review of international literature

Elements of effective integrated health care	*Brief description*
Care continuity and transitions	Care needs for elderly or frail patients are complex, and span different care locations or providers. Connected service networks, and effective referral systems can ensure patients receive quality care and continuity when they transit between locations or providers.
Policy and governance	Enabling policy is needed to align stakeholder goals/outcomes and provide financing structures to facilitate integration. Processes need to be facilitated through integrated systems of care so providers can work within common governance or work towards incentives {Goodwin, 2014 #214}. Cooperation across care provider organisations and the integration of health and social care at the clinical level is also important {Beland, 2011 #135;Eklund, 2009 #109}.
Shared values and goals	Meso- (organisational) or Micro- (individual) level integration of values and goals among different providers can facilitate staff motivation and service integration. Shared values and goals are facilitated through formal policies{Goodwin, 2014 #214;Beland, 2011 #135;Eklund, 2009 #109} and changes in culture at clinical

	and managerial levels {Maruthappu, #2691}.
Person-centered care	Holistic and respectful care should be delivered with a focus on the individual and on enabling autonomy by empowering individuals to be involved in their own care {Morgan, 2012 #209}.
Multi-/ inter-disciplinary teams	Providers from all services must work together in a flexible way to provide coordinated care and so that patients can benefit from expertise from multiple specialties {Billings, 2005 #1822;Ellis, 2011 #46}.
Effective communication	Communication is a vital component for all involved in care and extends to the communication between health care professionals by providing integrated electronic record management {Beland, 2011 #135;Billings, 2005 #1822;Goodwin, 2014 #214}.
Case management	A named individual is identified as care coordinator/case manager, who has direct responsibility for supporting service users by coordinating care, engaging patients in their own care and providing care directly {Eklund, 2009 #109;Beland, 2011 #135;Goodwin, 2014 #214}.
Needs assessment for care and discharge planning	Using comprehensive multidisciplinary geriatric assessment can evaluate needs and enable care plans to be developed {Beland, 2011 #135;Goodwin, 2014 #214;Ellis, #46;Dawda, #201}. Personalized plans for patients aim to improve the efficiency and quality of health care surrounding the discharge process and ensure appropriate and coordinated services are in place to

	support the patient {Beland, 2011 #135;Goodwin, 2014 #214;Shepperd, #47}.

Table 2 Macro-, meso- and micro-level implementation barriers and facilitators for integrated carein older populations

Factor level	Barriers to integrating care	Facilitators for integrating care
Macro-level factors: External context	• Cultural inertia {Maruthappu, #2691}. • Health system instability {Ashton, #2692}.	• Strategic direction for improving services {Ashton, #2692;Beech, #2680}. • Wider health system stability {Ashton, #2692}. • Laws and regulation regarding professional competency, scope of practice, care standards and safety {Ashton, #2692}.
Miso-level factors: System organisation	***Funding/ finances*** • Funding silos {Ashton, #2692}. • Competitive funding among stakeholders {Ashton, #2692}. • Unclear financial attribution {Maruthappu, #2691}.	• Common governance {Goodwin, 2014 #3}. • Incentives for integration {Goodwin, 2014 #3;Ashton, #2692}. • Funding realignment, ring-fencing and pooling {Maruthappu, #2691}. • Funding systems for integration {Goodwin, 2014 #3}.
	Organisational leadership • A barrier occurs when organisation leaders are not in charge of interventions and changes are implemented from outside groups {Ling, 2012 #140}. • Weakness in commissioning to support innovations and collaborative work and lack of sustained project management {Goodwin, 2011 #154}.	• Ensure strong project management and ties between implementers and the organization where changes will occur. • Strong leadership and clearly communicated strategic visions {Pelzang, 2010 #212}.
	Structure of existing services	

Factor level	Barriers to integrating care	Facilitators for integrating care
	• Divides between primary and secondary or health and social service provision {Goodwin, 2011 #154}. • Time pressure and staffing levels {Lawrence, 2012 #180;Khanassov, 2014 #156;Goodwin, 2014 #3}. • Complexity in the care system {Tsasis, 2012 #208}.	• System-level policies and procedures should be made that detail how care works and who is eligible {Beland, 2011 #135}.
	Philosophy/ culture • Poor institutional philosophy {Lawrence, 2012 #180}. • A permission-based and risk averse culture {Goodwin, 2011 #154;Ling, 2012 #140}. • Bureaucratic environment based on a command and control approach to management {Tsasis, 2012 #208}.	• Encourage innovation {Minkman, #153}. • Enable an adaptive system and focus on the system's capacity to self-organize {Tsasis, 2012 #208}.
Miso-level factors: Intervention organisation	***Intervention size and complexity*** • Large, multi-component interventions take longer and are harder to implement {Ling, 2012 #140}. • Complex interventions require cooperation with multiple stakeholders – getting agreement and implementing change can take longer and is more difficult {Ling, 2012 #140}.	• Small/ focused teams can make fast decisions, implement changes and drive the project forward {Ling, 2012 #140}. • Preliminary work to promote mutual understanding and clarify roles is useful {Ling, 2012 #140}.
	Intervention resources • Insufficient additional resources/ extra funds means new tasks will simply be added to existing ones, staff will not	• Success can be supported by a general framework for suitable conditions and funding must be in place {Billings,

Factor level	Barriers to integrating care	Facilitators for integrating care
	have enough time and new tasks will not be done {Ling, 2012 #140}.	2005 #1822}.
	Credibility • Interventions may lack credibility e.g. GP endorsement was critical for pilot study credibility on integrated care within primary care setting in the UK {Ling, 2012 #140}.	• Staff must be confident that senior management/team leaders are strongly committed to implementing lasting change {Ling, 2012 #140}.
Micro-level factors: Providers and research staff	***Shared values and understanding*** • Staff attitudes, lack of shared values and disagreement over the goals or benefits of interventions were significant barriers {Lawrence, 2012 #180} {Ling, 2012 #140}. • Lack of understanding may cause staff to feel their role is being eroded and are therefore not happy to help with changes. • Sites, teams and members disagree over the aims or benefits of the proposed intervention and their roles and responsibilities {Ling, 2012 #140}.	• Training is needed on the objectives of change. • Joint training (different professional groups) may be useful {Billings, 2005 #1822}. • Staff consultation promotes feelings of involvement and understanding of aims.
	Engagement • Lack of professional engagement is a barrier. For example a particular barrier is when GPs were not involved and committed to community interventions. Changes lacked credibility and others did not engage in change {Ling, 2012	• Identify or appoint 'champions' who act to remind and encourage staff. Champions may be more effective when they exist among peer groups i.e. GPs to encourage GPs {Ling, 2012 #140}. • Engage workforce with a simple vision and enable people

Factor level	Barriers to integrating care	Facilitators for integrating care
	#140}. • Staff may feel uninvolved, underprepared and 'thrown in' to projects {Ling, 2012 #140}.	on the front line to 'feel involved' in changing the service to ensure they effectively engage. • Some staff autonomy and being motivated helped to make changes possible {Ling, 2012 #140}.

Factor level	Barriers to integrating care	Facilitators for integrating care
	Communication • Insufficient communication in general is a major barrier to integrated care. • Lack of existing working relationships between individuals/ groups {Ling, 2012 #140}. • Teams and team-members are not located together {Ling, 2012 #140}. • Lack of robust record sharing across services. • Staff members are concerned about data security and who is allowed to see what. • Primary care physicians may not be proactive in sharing data {Goodwin, 2014 #3}. • Staff may be unclear of purpose/ objectives of interventions and so are not motivated to engage in changes {Ling, 2012 #140}. • Staff confusion about their own and others' roles and responsibilities {Khanassov, 2014 #156}. • Staff are unsure what they are permitted to do and who is working on the project {Ling, 2012 #140}.	• Allow time for relationships to develop {Ling, 2012 #140}. • Co-location increases frequency and quality of communication and gives better access to the appropriate professional knowledge {Billings, 2005 #1822}. • Regular, ongoing and pre-planned communication between senior partners in the relevant organizations is important for success {Ling, 2012 #140;Linertova, 2011 #114;Beland, 2011 #135}. • Create rules and agreement in advance about how the partnership/ collaboration will work. • Electronic record sharing and using an integrated information system for record sharing can help integration {Beland, 2011 #135}, with real-time data sharing {Goodwin, 2014 #3}. • Preliminary work is needed to involve staff so they feel consulted and valued. • Clear outlines of each role/responsibility are needed. Integrated care pathways can formalise multidisciplinary team-working and enable professionals to examine their roles and responsibilities {Allen, 2009 #133}. • Encourage staff to make decisions autonomously {Ling,

Factor level	Barriers to integrating care	Facilitators for integrating care
		2012 #140}.