View metadata, citation and similar papers at core.ac.uk
brought to you by CORE
provided by Repository@Nottingham

1 Abstract
2
3 **Objective**
4 To describe emergent approaches to integrated care for older people with complex
5 care needs and investigate the viability of measuring it.
6
7 **Methods**
8 A case study approach was used. Sites were recruited following discussion with
9 senior staff in health and social care agencies. Service arrangements were
10 categorised using a framework developed by the researchers. To investigate joint
11 working within the sites the Development Model for Integrated Care was adapted and
12 administered to the manager of each service. Data were collected in 2018.
13
14 **Results**
15 Six case study sites were recruited illustrating adult social care services partnerships
16 in services for older people with homecare providers, mental health and community
17 nursing services. Most were established in 2018. Service arrangements were
18 characterised by joint assessment and informal face-to-face discussions between
19 staff. The development of an infrastructure to promote partnership working was
20 evident between adult social care and each of the other services and most developed
21 with home care providers. There was little evidence of a sequential approach to the
22 development of integrated working practices.
23
24 **Conclusion**
25 Components of partnerships promoting integrated care have been highlighted and
26 understanding of the complexity of measuring it enhanced. Means of information
27 sharing and work force development require further consideration.
28
29 **Summary and key words: (3 to 6 key words)**
30 Integrated care, Social Care, Healthcare, Older people, Devolution, Complex care
31

Y,

32 **What is known about the topic?**
33 The devolution of health and social care arrangements in Greater Manchester has aroused
34 considerable interest in much wider arenas. Necessarily much of the focus in available material has
35 been upon strategic development, analysis of broader trends and mechanisms and a concern with
36 changes in the healthcare system.
37
38 **What does this paper add?**
39 The findings from the study will enable emerging approaches to be described and codified and
40 permit the specific social care contribution to the new arrangements to be discerned. The findings
41 are relevant beyond the immediate context of Greater Manchester to wider integrated care. The
42 evidence can be employed by commissioners and services, providing a sound basis for further work
43 as service systems develop.
44
45 **What are the implications for practitioners?**
46 This research is important because it will be one of the first pieces of work to examine the new
47 integrated care arrangements in Greater Manchester. By providing guidance to promote evidence-
48 based practice, this study will contribute to service development in Greater Manchester and the
49 achievement of the broad national service objectives of improving the user and carer experience and
50 ensuring value for money.

Y,

Introduction

The provision of integrated care for older people with complex needs is a longstanding international concern (1, 2). Integration, care co-ordination and collaborative care are terms used interchangeably within a health and social care framework aimed at delivering a multidisciplinary service for healthcare provisions. Integrated care has recently been defined as:

"health services that are managed and delivered such that people receive a continuum of health promotion, disease prevention, diagnosis, treatment, disease management, rehabilitation, and palliative care services, coordinated across the different levels and sites of care within and beyond the health sector and, according to their needs, throughout the life course." (1)

In England, there is currently a shift toward the development of more integrated structures. This new ambition reflects the health and social care needs of a population and the importance of interdisciplinary working to develop coordinated care for older people with complex needs at both the macro and micro levels (3, 4).

In 2015, the National Health Service (NHS) England announced Sustainability and Transformation Plans towards delivering integrated services for the needs of local populations. The aim of these plans was to deliver sustainable improvements in health and care outcomes. These would be achieved through integration of National Health Service provider organisations, Clinical Commissioning Groups, Local Authorities and other health and care services, making up 44 geographic areas in which people and organisations would work together in order to improve and transform the way that health and care is strategically provided for their populations (4). In England, the Greater Manchester Health and Social Care Partnership was established in 2014/5. It was the first region in England to receive devolved funding and therefore, devolved planning and control for health and social care services from National Health Service England (Department for Health and Social Care) with a budget of £6 billion. Each of the 10 Greater Manchester local authorities and health bodies signed a formal agreement that committed them to deliver integrated health and social care services incentivised by a £450m transformation fund with targets to measure the planning and implementation of integrated services. Greater Manchester is an example of a sustainability and transformation partnership with an accountable care system, thereby permitting the creation of a single health and social care budget for the region. A key requirement of the transformation funding, with respect to older people, is to develop service systems to support people at home and avoid unnecessary hospital admissions. Local services were encouraged to reduce duplication across services, develop seamless support to people in need and deliver the right support to people in the right place. The key driver was to improve citizens health and wellbeing and advance the shift in resources from secondary to primary care, in order to maintain those with complex care needs in their own home (4).

Complex care for older people is often poorly defined. In this study we defined complex care as being for older people for whom independent community living might no longer be a possibility, for example, people with substantial personal care needs and multiple morbidities including sensory impairment (5). Consequently, they are reliant on others to continue to live at home to maintain their safety, security and sense of well-being. Often, complex care is associated with a reduction in functioning and morale, for example, because of depressive illness, functional or organic mental disorder. As a result of these conditions, older people are unable to undertake successfully both activities of daily living and instrumental activities of daily living, and, as a consequence there is a significant impact on their wellbeing [6-8]. Complex care is therefore, likely to involve; support at home on a daily basis, more than one agency contributing to a care plan and regular monitoring and review of care. The care such older people require will usually be long-term and necessitate co-ordination to promote continuity of care [6-8].

A cornerstone of integrated health and social care services is a robust workforce development strategy. Investing in front line staff can help to ensure the effective delivery of integrated services by encouraging both a positive working relationship and a clearer understanding of roles and responsibilities between staff from different disciplines. Workforce planning at the macro level is an integral part of developing an integrated service framework (5). As part of a wider evaluation of the arrangements to support older people at home with complex needs in localities within the Greater Manchester Health and Social Care Partnership, we conducted an evaluation of operational management and workforce changes. This study had two aims. The first was to describe emergent approaches to integrated services and the second was to investigate the extent to which it was possible to measure the extent of integrated practice within them.

Methodology

Design

This was a pilot study, which employed a quantitative cross-sectional design in order to identify the level of integration within 6 care service initiatives in Greater Manchester. A case study approach was employed to explore the complexities, circumstances, and range of services provided using discrete exemplars of integrated working as the unit of analysis (6). This approach has been recognised as a valuable method for the study of complex settings in the early stages of research and for the generation of hypotheses (7).

Settings and site identification

Data collection took place in autumn 2018. Recent changes to the Health Research Authority ethics guidance mean that ethical review for the provider and practitioner interviews was not required. However, participant information sheets and consent forms were employed with all interviews. A case finding strategy was employed to identify examples of emergent integrated health and social care initiatives providing care to older people with complex needs within the Greater Manchester Health and Social Care Partnership. This was facilitated by the involvement of the North West Association of Directors of Adult Social Services (including serving directors of adult social care employed by local authorities) and personal contacts with managers known to the researchers. Researchers met with senior social care staff in four localities and one senior member of staff in a specialist mental health service. The purpose was to identify a specific locality where there was a clear initiative to promote integrated care for older people with complex needs and which constituted a new model of care rather than an extension of existing practice. Each initiative had to be underpinned by a strategic plan, which had a specified start date and comprised a service provided by staff from a variety of professional backgrounds for older people with complex needs living at home.

The overall population of Greater Manchester is around 2.8 million, approximately 441 thousand of whom are aged 65 and over (8). Amongst these Iwere 53 thousand people identified as having complex care needs (including frail older people with mental health needs, learning disabilities and dementia, and people with multiple long term conditions) (9). Each locality has approximately 16 to 20 percent of its population over age 65, a proportion which will continue to increase over time (8). Ethnic diversity is also widespread across Greater Manchester, with the lowest percentage of non-White persons residing in the areas of Stockport and Tameside (7.9% and 9.1% respectively). There are far larger ethnic minorities living in Oldham, Rochdale and Trafford (22.4%, 18.4% and 14.5% respectively that are considered non-White) (9). These figures are important to consider, as they help explain the level of integrated practice considering sociodemographic factors, which can often act as barriers when exploring emerging models of integration in health and social care.

Y,

150 Six sites were recruited spread across five of the ten local authorities (geographical areas served by
151 local government units) in Greater Manchester. In one local authority, there were two sites. Site
152 characteristics reflected three different approaches to supporting older people with complex care
153 needs at home. Two were examples of new roles for mental health nurse practitioners seconded
154 into adult social care teams. A further two sites were examples of a new approach to commissioning
155 for home care for older people living at home characterised by a focus on outcomes with care
156 provided by a single agency operating within a small geographical area. The final two were examples
157 of the integration of community nursing services within adult social care social work teams. In one
158 site staff were co-located and in the other there was a virtual multidisciplinary team(10). This team
159 also included other primary care staff including general practitioners and allied health professionals
160 (for example physiotherapists) and was characterised by daily meetings in a primary care setting.
161
162 Manager interview
163 The 'Quickscan questionnaire' comprised 21 statements (see Table 1) which were considered
164 integrated activities, derived from an earlier study carried out by Minkman (11, 12) which
165 investigated the core dimensions of the developmental model of integrated care. The questionnaire
166 was administered in the format of an interview between researchers and service managers and
167 adapted for use in the current study. The dimensions of the developmental model of integrated care
168 remained the same in the adapted version of the Quickscan questionnaire. In the original study by
169 Minkman (11, 12), statements were ranked in order of importance to their corresponding dimension
170 as selected by a group of healthcare experts. The dimensions were then ranked in order of
171 importance corresponding to each developmental phase in the model of integrated care, for
172 example, phase 1 is ordered by commitment as the most important dimension and phase 4, by
173 result focused learning. The interactions between the dimensions are key for the developmental
174 progress from one phase to the next as is highlighted in figure 1.
175
176 In the current study, the Quickscan statements were adapted for use in a UK context by experienced
177 social workers and researchers in the field of social care research. This was then piloted within a site
178 in Greater Manchester, to examine acceptability and face validity, following which further
179 amendments were implemented. These statements were further adapted by an expert panel of
180 health and social care researchers and current social workers, resulting in an adapted version of the
181 Quickscan for use in the UK (see Table 1).
182
183 [Insert Table 1]
184
185 [Insert figure 1]

186 Data analysis
187 All data from the manager interview were analysed in Excel, in order quantitatively to measure the
188 level of integration within each site. This was done by means of scoring responses to statements
189 within each dimension. If responses to particular statements indicated that the specific feature were
190 present, then each statement would be evidenced by examples of the form that it took. This would
191 then permit a score within each dimension. Understandably, there were different numbers of
192 statements that fulfilled the criteria of each dimensions (see Table 1). Two researchers determined
193 these scores independently. Subsequently following recordings of data these two scores were then
194 checked using inter-rater reliability analysis. Any differences in scores were then rechecked by
195 listening to the recording, upon which researchers agreed a score, thereby permitting complete
196 inter-rater reliability.

Y,

197 Phase of integration
198 Further inter-rater reliability was performed following phase rating by researchers. This was a short
199 questionnaire that included a checklist of three statements per phase (12 in total) and a final
200 question addressing what phase the service was currently in. It was undertaken following the
201 manager interviews and completed separately by researchers. Inter-rater reliability was 95%, with
202 remaining discrepancies finally agreed upon entering data. In the study by Minkman (11), this was a
203 phase rating scale, in which participants self-reported which phase they thought their service was in.
204 However, in the present study, we decided that allowing managers to self-complete this measure
205 would yield inaccurate responses since many managers did not understand sufficiently the detailed
206 definition of each phase. Additionally, there was a potential element of participant bias, or demand
207 characteristic bias. Therefore, to avoid this, researchers separately completed this rating after the
208 interview.

209

210 Results

211 Site description
212 Table 2 outlines the partnership arrangements and information about the nature of the individual
213 projects. Table 2 also outlines the staff groups involved in delivering the integrated services and
214 where these staff interfaces take place, for example, nurses and social work staff in a primary care
215 setting are detailed. Some of the services we interviewed offered a generic adults service where
216 others were more specialised. It is important to understand this context in relation to the breadth
217 and scope of each service model.

218 A variety of partnership arrangementswere found to develop and support greater integration in
219 Greater Manchester (see Table 2). The most common partnership arrangement is a Local Care
220 Organisation (Integrated Care Organisation and Integrated Care System are terms used
221 interchangeably to describe a similar partnership agreement to that of a Local Care Organisation).
222 Local Care Organisations are responsible for the management of health and wellbeing for a defined
223 population. Providers of community health services are all secondary health care providers (either
224 specialist mental health or providers of acute care). The start date in table 2 reflects the formal sign
225 up of integrated care organisations/systems /local care organisations. Most sites had three strategic
226 partners, which were community health services, Adult Social Care and a secondary care health
227 provider trust.

228 The integration interface refers to the services within each site that were being integrated. These
229 included; Adult Social Care, Community Nursing services, Mental Health services, Home Care
230 Providers, Clinical Commissioning Groups, Secondary Care, Voluntary Sector and Allied Health
231 services. In two sites (2 and 4), this builds on a tradition of joint working in the previous decade and
232 in other sites the partnership is more recent (sites 1 and 3 in particular). Three interfaces are
233 represented in the case study sites that are all adult social care settings, with home care providers,
234 community nursing services and mental health practitioners (see Table 2).
235

236 Three sites provided support to older people (including those with dementia) and adults with learning
237 and physical disabilities. One site supported older people (including those with dementia) and 2 sites
238 supported older people with organic and functional mental health problems providing an initial
239 assessment and screening service as appropriate. Most teams interviewed provided an intake service
240 where new referrals were screened for eligibility and then referred to the Adult Social Care service for
241 an initial assessment.
242

Y,

Three sites offered adult care services for people 18 years of age and over. This involved support to people with learning disabilities and people with physical health needs and disabilities. Older people with a diagnosis of dementia or other mental health conditions were supported by the adult social care and health teams.

Table 3 shows the distinction between the different levels of integration as a marker of progress, acknowledging that while there was significant evidence of strategic planning and formal partnership agreements at a senior level, this was not in all sites. These developments were then operationalised at a fieldwork level with using the Quickscan evaluation tool used by Minkman (13). Several measures of integration were explored: , integrated budget, single point of access, co-location of staff, management of teams, assessment, care and long-term support. In three sites, co-location was the primary reason for driving forward integrated practice. This involved social work teams and community nursing/mental health practitioners' teams sharing the same office base. In terms of staff, there was a varied mix of social workers (qualified and unqualified) and healthcare staff (district nurses, mental health practitioners) while other staff included home care workers and workers from the voluntary sector..

Patterns of shared working practice are also reported in Table 3.d).The most significant shift in practice involved workers from different disciplines undertaking joint assessments. There was evidence of pooled budgets (in which the financial resources of one or more organisation is formally defined and aligned into one integrated funding pot to support joint working) at a strategic level but limited at the frontline casework/budget planning stage. Joint care planning was only visible within one of the sites (social care provider and community nursing services, staff coordinating the delivery of support across their respective service areas.). Additionally, outcomes-based commissioning was only evident in one site. This is where a service is commissioned that is focused on supporting people with a person-centred approach that moves away from time and task-based working to address wider needs. The commissioner gives the provider flexibility to deliver support to meet particular needs to achieve a person's agreed outcomes that have been identified in the care plan. A move toward flexible work practices was only active in one of the sites where a 7 day working contract had been introduced to reflect new working hours.

A key marker of progress for integration is having the infrastructure in place to support front line staff in delivering their roles in the optimum way. The majority of sites l relied on face-to-face conversations to support integrated working. However, in one site social work staff accessed General Practitioner records. This was seen as a major benefit in improving multidisciplinary working. Other examples of information sharing included less formal mechanisms as noted (see Table 3).

[Insert Table 2]

[Insert Table3]

Manager interview

Table 4 shows the prevalence of integrated activities per site. Each site is given a score per dimension and then an overall prevalence score. It was evident that the most frequently reported dimensions were, 'Interprofessional teamwork' and 'commitment' and these were fully reported in 5 out of 6 sites.

It appeared that the most integrated interface was in fact with home care services as they had more dimensions prevalent within their service (site 1 and site 6, 4 and 5 out of 9 dimensions respectively). The two case study sites within the home care interface fulfilled all dimensions for

294 Interprofessional teamwork and commitment. These are integral components of phase 1, 2 and 3 of
295 the developmental model of integrated care. Within the mental health interface, the two case study
296 sites were jointly fulfilling the 'roles and tasks' and 'interprofessional teamwork' dimensions, which
297 are key features of phase 1 and 2 in the developmental model of integrated care. Within the
298 community-nursing interface, both sites fulfilled all dimensions for commitment and roles and tasks,
299 indicative of phase 1 and 2 of the developmental model of integration.
300
301 [Insert Table 4]

302
303 [Insert Table 5]
304 Table 5 reports the assessment of the phase of integration evidenced in each site using the objective
305 measures of the modified quickscan schedule and a researcher rating of the phase of development
306 of each. All sites had achieved the first phase of integration, 'initiative and design'. Two sites (4, 6)
307 had achieved the second phase of integration, 'experimental and execution'. Only site 1 provided
308 evidence of the third phase, 'expansion and monitoring'. Three sites (4, 5, and 6) provided evidence
309 of the fourth and final phase, 'consolidation and transformation'. Integration phases comprise
310 several key components of each dimension as described by Minkman (11, 13, 14). This study
311 highlights the variability within the Greater Manchester sites in terms of integration levels. Across
312 all sites except site 2, commitment was present as a dimension and was a necessary component of
313 phase 1 in the developmental model of integration (14). However, there was little evidence of
314 sequential development between the four phases.
315

316 Researcher phase rating

317 The researcher phase rating revealed that across 6 sites, the average rating was 2.3, which reflects
318 the level of integration using the Quickscan tool standardised by Minkman (14). The translation to
319 the UK however, is less informative on its own. The phase rating in the original study was self-
320 reported. However, to improve the accuracy of integration level information and avoid any
321 participant bias, there should ideally be a dual completion of this question and in a format, which is
322 of practical benefit (i.e. checklist of statements per phase as carried out in this study). The approach
323 adopted here allowed researchers who had more knowledge of each phase, to report more
324 accurately the level of integration within each service, following the manager interview.
325

326 Discussion

327
328 Three emergent approaches to new forms of integrated services for older people were identified as
329 part of the Greater Manchester devolved experiment. These were links between adult social care
330 and community nursing services, old age mental health services and home care providers. The study
331 included two examples of each approach. Within each of the six sites, the extent of integrated
332 practice was measured using an adaptation of the Quickscan tool (11, 15) involving the extrapolation
333 of data from manager interviews and a researcher rating of current arrangements.
334
335 A substantial number of activities which are integral to the integration model did not appear to be
336 fully implemented according to the Quickscan and therefore, important dimensions were absent in
337 the service delivery models (see Table 4). For successful development of integrated care, according
338 to Minkman and colleagues, all dimensions must be fulfilled, reaching level 4 status in the
339 developmental model of integrated care. The results suggest that for successful integration
340 particular efforts should be made to focus on aspects of practice within the key dimensions of
341 integrated care, which include: commitment, roles and tasks, delivery system, performance
342 management and result focused learning. The activities within three dimensions (delivery system,
343 performance management and results based learning) are critical in the progression from one phase

Y,

344 to the next and these activities were mostly absent, thus, suggesting that they would require the
345 most future investment. In addition, particular attention should be given to feedback mechanisms
346 within services that reinforce service delivery based on outcome reports from each service as an
347 integrated model and not from individual contributing organisations. Examples exist of relevant
348 suites of performance measures that could contribute to this (16). The responsibility for establishing
349 such processes may sit with service commissioners to ensure there is a single evaluation of
350 integrated practice for older people with complex needs living at home, rather than, separate
351 evaluations initiated by the partner organisations providing staff in the case study sites.
352
353 One of the main challenges in this pilot study was measuring integration itself at the practice level. It
354 is the aim of integrated services to contribute to minimising fragmentation and to improve services
355 through cost effective delivery of integrated models of health and social care. However, this leaves
356 the unanswered question of how to evaluate these most effectively in line with best practice and
357 how to identify the progress required, appropriate to the particular phase of development. This
358 study piloted the use of the Quickscan tool in a UK setting. To permit comparison between the sites
359 an early decision was made for researchers, and not managers, to determine the phase of
360 integration based on the dimensions of integrated practice identified in the Quickscan schedule. It
361 revealed a disparity between the data reported by managers and researchers on the extent of
362 integration within the six case study sites. Managers' perceptions were influenced by daily practice
363 and they paid less attention to the strategic markers of integration, the achievement of which was
364 often beyond their sphere of influence, such as decisions about measures of performance. The study
365 has also revealed the significance of exploring information sharing as an underlying theme to
366 understand better the level of integration. Hence the Quickscan appeared to identify areas of
367 relative development and under-development. Nevertheless, to establish the replicability of the
368 Quickscan in the UK, further work is required. In particular this reflects missing dimensions where
369 the inclusion of a dimension relating to workforce development for use in the UK will be important
370 (5).. Therefore, further work is required to develop a more systematic approach to the measurement
371 of integrated care delivered to services users and to test its utility in a variety of settings.
372
373 Some of the traditional measures of integration associated with health and social care practitioners
374 working together were challenged in this study. This has prompted consideration of other
375 approaches. For example, the co-location of staff does not take account of agile working (17, 18),
376 working from home and the requirement for staff to maintain electronic records for their employers
377 whilst being members of a multidisciplinary team. There is perhaps a need to describe further, what
378 we mean by the term integration. Two terms used in health economics, horizontal and vertical
379 integration (19), help to understand practice within the case study sites. In this context, they may be
380 described as two parallel forms of linking on a single continuum of provision for health and social
381 care.
382
383 Horizontal integration can be defined as the merging of activities at the same level, thereby,
384 providing integration through control of processes, which are complementary to one another and
385 not sequentially, linked. Vertical integration on the other hand, can be defined as processes that are
386 sequentially related to delivery of the same final product. Vertical integration could therefore,
387 involve a secondary healthcare provider delivering the same service within a continuum of health
388 and social care services. This form of integration can also target continuity and provision of long-
389 term care. Horizontal integration, however, involves tailoring provision of individualised services for
390 people with varying health and social care needs (19). These two forms of integration are evidenced
391 in this study. In sites two and four, there are examples of horizontal integration at the care provider
392 level, as the nurses are part of old age mental health services located in secondary health care.
393 These case study sites also have elements of vertical integration, as they are governed by a single

394 care organisation delivering a range of different services for people with varying health and social
395 care needs (see Table 2). The remaining sites provide examples of horizontal integration.
396
397 Keeping to this terminology, a value-added partnership approach is one that was observed in this
398 study in the context of vertical integration in sites 2 and 4. A value added partnership has been
399 described as a set of independent companies that work closely together to manage the flow of
400 services along the entire value added chain (20). The case study sites are all governed by a single
401 care organisation and therefore, displayi elements of a value-added partnership in their approach to
402 care. However, one of the key components of such a partnership in this context is for information to
403 be shared efficiently to promote effective care planning and co-ordination especially to uphold the
404 expected benefits (20). In three sites (4, 5 and 6) there was evidence of limited use of electronic
405 means of information sharing. In all sites, practitioners sought to compensate for this by information
406 sharing through face-to-face discussion. This suggests informal discussion should be recognised as a
407 measure of information sharing alongside shared access to electronic records.
408
409 One study limitation is that there was insufficient time to adapt comprehensively the Quickscan in
410 this short pilot study and it is possible thatthis may have reduced the accuracy of interpretatios of
411 the results. Minkman and colleagues (11, 12) developed the statements within each dimension using
412 a robust methodologiy approach, taking into consideration the response rates of each activity and
413 their appropriateness for health and social care professionals, following focus groups and workshops
414 aimed at developing themes for integrated practice. This study provides insight into those
415 dimensions. However, it is evident more work is required in identifying specific care related
416 activities to link with those dimensions for a UK context. It was also The other limitation to this
417 study is that due to the nature of the research, a case study approach was employed. This does
418 mean the data may be generalisable to other settings.
419
420 Nonetheless, this study offers a novel approach in the attempt to capture and define integration in
421 the UK. These data were collected at a single point in time, as services were at different stages, in
422 terms of implementing their integrated care model. Therefore, this study necessarily only provides a
423 cross-sectional account of developments in social care as the process of integration in the devolved
424 administration of Greater Manchester evolves. Further work would be desirable to capture the
425 processes involved within integration, targeted at delivering services for older people with complex
426 care needs.

Y,

427 **Acknowledgement**
428 This report presents independent research funded by the National Institute for Health Research
429 (NIHR), School for Social Care Research (SSCR). The views expressed in this article are those of the
430 authors and not necessarily those of the NIHR SSCR or the Department of Health and Social Care,
431 NIHR or NHS.
432
433 ## Conflicts of interest

434 The authors declare no conflicts of interest

Y,

References

1. Thornicroft G, Ahuja S, Barber S, Chisholm D, Collins PY, Docrat S, et al. Integrated care for people with long-term mental and physical health conditions in low-income and middle-income countries. Lancet Psychiat. 2019;6(2):174-86.
2. Clarkson P, Venables D, Hughes J, Burns A, Challis D. Integrated specialist assessment of older people and predictors of care-home admission. Psychol Med. 2006;36(7):1011-21.
3. World Health Organization. World report on ageing and health. xii, 246 pages p.
4. Alderwick H, Ham C, Buck D. Population health systems: going beyond integrated care. The king's fund. 2015:1-37.
5. Skills for Care, Think Local Act Personal, Skills for Health, Local Government Association, Employers N, Services AoDoAS. The Principles of Workforce Integration. https://wwwskillsforcareorguk/Documents/Leadership-and-management/Workforce-integration/The-principles-of-workforce-integrationpdf. 2014.
6. Yin RK. Case study research and applications : design and methods. Sixth edition. ed. Los Angeles: SAGE; 2018. xxx, 319 pages p.
7. Bowling A. Research methods in health : investigating health and health services. 2nd ed. Buckingham ; Philadelphia: Open University Press; 2002. xiv, 486 p. p.
8. Statistics OfN. Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2017. 2018:1-24.
9. Commissioning MHaC. Frail Older Adults - Health & Social Care Cohort Profile. https://secure.manchester.gov.uk/info/500230/joint_strategic_needs_assessment/6888/adults_and_older_people_jsna; 2019 18/02/2019.
10. Munro AJ, Swartzman S. What is a virtual multidisciplinary team (vMDT)? Brit J Cancer. 2013;108(12):2433-41.
11. Minkman M. The Development Model for Integrated Care: a validated tool for evaluation and development. J Integr Care. 2016;24(1):38-52.
12. Minkman M, Ahaus K, Fabbricotti I, Nabitz U, Huijsman R. A quality management model for integrated care: results of a Delphi and Concept Mapping study. Int J Qual Health C. 2009;21(1):66-75.
13. Minkman MMN. Developing integrated care. Towards a development model for integrated care. Int J Integr Care. 2012;12.
14. Minkman MMN, Ahaus KTB, Huijsman R. A four phase development model for integrated care services in the Netherlands. Bmc Health Serv Res. 2009;9.
15. Minkman MMN. Longing for Integrated Care: The Importance of Effective Governance. Int J Integr Care. 2017;17.
16. Challis D, Clarkson P, Warburton R, University of Kent at Canterbury. Abingdon; Routledge Performance indicators in social care for older people 2006.
17. Litchfield P, Cooper C, Hancock C, Watt P. Work and Wellbeing in the 21st Century. Int J Env Res Pub He. 2016;13(11).
18. Jeyasingham D. Open spaces, supple bodies? Considering the impact of agile working on social work office practices. Child Fam Soc Work. 2016;21(2):209-17.
19. Challis D. Integrating health and social care: problems, opportunities and possibilities. Research Policy and Planning. 1998;16(2):7-12.
20. Johnston R, Lawrence PR. Beyond Vertical Integration - the Rise of the Value-Adding Partnership. Harvard Bus Rev. 1988;66(4):94-101.

Y,

482 **Figure captions**

483 Figure 1 Development model of integrated care

484 Table 1 Dimensions of integration

485 Table 2 Site descriptions

486 Table 3 Service arrangements

487 Table 4 Measures of integration

488 Table 5 Phases of integration[1]

489

Y,

490 Table 1 Dimensions of integration

Dimensions[1] (no. statements)	Statements
Delivery system (3)	Partner organisations have agreements about referral processes and care pathways. Arrangements are in place for exchange of client information. Multidisciplinary care pathways are in place.
Patient centeredness (2)	Partner organisations have information about the service in a format accessible and relevant to service users and carers. Service information reflects multiagency working.
Roles and tasks (3)	Practitioners understand each another's roles and use their expertise. Practitioner meetings take place. Agreements on the responsibilities of the partner organisations to the service are specified.
Commitment (2)	Shared agreement between partner organisations of service outcomes are specified with steps about how they will be achieved. Senior managers in partner organisations support the service.
Interprofessional teamwork (3)	Practitioners in the service trust each other's judgement. Practitioners value joint working. Practitioners collaborate with each other in service delivery.
Transparent entrepreneurship (2)	Practitioners within the service are encouraged to experiment with new ways of working together to achieve service objectives. Financial arrangements between partner organisations have been made for the service.
Result focused learning (2)	Benefits of collaboration are understood by practitioners working within the service. Mutual learning and knowledge exchange initiatives are established.
Performance management (3)	Performance indicators to monitor outcomes are used. An evaluation of processes and service impact has been undertaken to improve service delivery. Procedures are in place to evaluate service user and carer experiences.
Quality care (1)	Service users and carers are involved in initiatives to improve service delivery.

491 [1]Derived from developmental model of integrated care, Quickscan questionnaire [10]
492

Y,

Table 2 Site descriptions

Site	Partnership status (Start date)	Strategic Partners (number)	Integration Interface	Target Group/s
1	Integrated Care Organisation (2018)	Council, Clinical commissioning group, Secondary health care Trust, (3)	Adult Social Care – Home Care	Older People with Dementia and Mental Health Needs
2	Integrated Care System (2018**)**	Council, Secondary mental health care Trust, (2)	Adult Social Care – Mental Health	Older People with Mental Health Needs
3	Local Care Organisation (2018)	Council, Clinical commissioning group, Secondary mental health care Trust, (3)	Adult Social Care – Community Nursing	All Adults
4	Integrated Care Organisation (2015)	Council, Secondary mental health care, Secondary health care Trust*, Clinical commissioning group, GP cooperative, (5)	Adult Social Care – Mental Health	Older People with Mental Health Needs
5	Shadow Local Care Organisation (2018)	Council, Clinical commissioning group, Secondary health care Trust, (3)	Adult Social Care – Community Nursing	All Adults
6	Shadow Local Care Organisation (2018)	Council, Clinical commissioning group, Secondary health care Trust, (3)	Adult Social Care – Home Care	All Adults

Y,

Table 3 Service arrangements

Site	Strategic	Operational	Staff	Shared working practices	Information sharing arrangements	Integration rating
1		7 day service by adult social care and home care staff	Social Workers, Home Care Workers	Joint assessment, Outcomes commissioning	Informal face to face discussion	Phase 2
2		Co-Location	Social Workers, Mental Health Practitioners	Joint assessment, Care planning	Informal face to face discussion	Phase 1
3	Pooled budget/Joint management	Co-Location	Social Workers, District Nurses, Allied Health Professionals	Joint assessment	Informal face to face discussion	Phase 3
4		Co-Location	Mental Health Practitioners, Allied Health Professionals District Nurses, Social Workers, Voluntary Sector workers	Joint assessment, Care planning	Informal face to face discussion, Mental Health Practitioner views adult social electronic care records	Phase 3
5	Pooled budget		Social Workers, District Nurses, Allied Health Professionals	Joint assessment	Informal face to face discussion, Social Workers, District Nurses, Allied Health professionals' access electronic GP records.	Phase 3
6	Pooled budget		Social Workers, Home Care Workers	Joint assessment, Outcomes commissioning	Informal face to face discussion, Social Workers access electronic GP records, Shared care plan via secure email with health care professionals	Phase 3

Y,

Table 4 Measures of integration

Dimensions (n of statements)	Integration interface					
	Home Care		**Mental Health**		**Community Nursing**	
	Site 1	Site 6	Site 2	Site 4	Site 3	Site 5
Delivery system (3)	1	2	2	3	0	3
Patient centeredness (2)	1	1	1	0	1	1
Roles and tasks (3)	2	3	3	3	2	3
Commitment (2)	2	2	1	2	2	2
Interprofessional teamwork (3)	3	3	3	3	2	3
Transparent entrepreneurship (2)	1	2	1	1	1	0
Result focused learning (2)	1	2	1	2	1	2
Performance Management (3)	3	2	1	1	0	1
Quality care (1)	1	0	0	0	0	0
Prevalent dimensions[1]	**4/9**	**5/9**	**2/9**	**5/9**	**1/9**	**5/9**

[1]Prevalant dimension describes the number of statements achieved per dimension. For the dimension to be fully present, all statements must be evidenced.

Y,

Table 5 Phases of integration[1]

	HC		MH		CN	
Phase (Key component/s)	Site 1	Site 6	Site 2	Site 4	Site 3	Site 5
1. Initiative and design phase (Commitment)	✓	✓		✓	✓	✓
2. Experimental and execution phase (Roles and tasks and Delivery system)				✓		✓
3. Expansion and monitoring phase (Performance management)	✓					
4. Consolidation and transformation phase (Result focused learning)		✓		✓		✓
Researcher rating	**2**	**3**	**2**	**3**	**1**	**3**

[1]Sourced from Minkman's original study of the developmental model of integrated care [10]. Dimensions are ranked in order of importance from the top 10 cluster statements and each correspond to a phase (1-4) in the developmental model of integrated care.

Y,