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The move towards integrated care: Lessons learnt from managing patients with multiple morbidities in the UK

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ABSTRACT

Introduction: The multi-disciplinary care offered to patients with multi-morbidities offers a powerful example of the practical challenges faced by the National Health Service's planned move to more closely integrated models of care.

Purpose, objective, and contributions: The intention of this work was to identify the opportunities and obstacles presented by the current provision of integrated care and explore their implications for existing and future policy initiatives.

Materials and Methods: We conducted a qualitative exploration of the experiences of senior managers, commissioners and clinicians, using a post-hoc content analysis to populate and present the results within the multi-componential Sustainable integrated chronic care model for multi-morbidity: delivery, financing, and performance (SELFIE) framework designed to understand integrated care.

Results: A total of 13 senior medical directors, commissioners, and managers, and 15 clinicians from a range of care settings were interviewed. Relative factors within the six framework components were identified namely; issues around communication between settings (*Service delivery*), the importance of collaborative leadership (*Leadership & governance*); the need for high-level collaboration (*Workforce*), better directed financial incentives (*Financing*), the lack of software interoperability (*Technologies and medical products*) and constraints on sharing and utilising patient data (*Information & Research*).

Conclusions: The SELFIE framework has provided valuable insight into the challenges presented by inter-organisational and inter-professional working that will help guide the design and implementation of policies promoting integrated care. These may be mitigated by sharing the varied experiences and priorities that exist across primary and care settings, alongside improving communication and supporting collaborative leadership. There also appears a clear role for refocussing financial incentives to reward shared responsibility at all levels of service delivery.

1. Background

Policymakers are increasingly focussed on developing integrated, people-centred systems of healthcare with the aim of improving the efficiency and quality of their service and the health of the population [1–4]. Over the last ten-years in the United Kingdom (UK) organisations including the British Medical Association, the Royal College of Physicians, and the Royal College of General Practitioners have proposed ways to integrate care and dissolve traditional boundaries between general practice, community services, hospitals, and social care that

exist within National Health Service England (NHSE) [5–8]. The potential benefits of these integrated models of care have now been formally recognised at a policy level in the UK where there is a growing emphasis on setting system-wide priorities and developing a more co-ordinated approach to healthcare services [5,9].

Currently NHSE is organised into multiple discrete care settings that include primary, secondary and tertiary care organisations, each possessed of their own funding arrangements, management structures, and care priorities [10]. Any move towards more integrated systems of care in a care system as long-established as NHSE requires not only the

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fundamental repositioning of existing policy objectives but that they also account for the long-embedded customs and practices of managers, commissioners and care providers that will implement them. Without doing so the wholesale changes envisioned risk being stifled by a preference for risk aversion amongst senior decision makers, and a workforce hesitant to embrace change [11,12].

Whilst there have been numerous reviews and discussions of the evidence in support of integrated care [1,3,4,13–17] there is comparatively little work conducted on how the policies supporting such integrated models can be successfully designed and introduced [18–22]. If integrated care is to fulfil its potential in NHSE and elsewhere, then it's important to understand how well-equipped services are to meet these fundamental shifts in priority and determine how policy can best support and reflect the necessary changes in service provision. In this context there appears much to be gained from understanding the perspectives of clinicians and senior management with previous experience of attempting to deliver integrated care across the boundaries of commissioning, governance, and provision that currently exist in the NHSE [23,24].

One group of patients that provide a useful example of the challenges involved in delivering such care are those with multiple morbidities [25, 26]. Their care requires concerted treatment and management across multiple settings [25–29] and the work we present here describes the perceptions of senior managers, and clinicians responsible for designing, commissioning and delivering care to patients with multiple morbidities one of which is chronic obstructive pulmonary disease (COPD) [30,31]. This qualitative investigation identifies the opportunities and obstacles presented by the current provision of integrated care and explores their implications for existing and future policy initiatives.

2. Methods

2.1. Study design

The nested qualitative study presented here was conducted during 2018 to explore current models of managing patients with multiple morbidity, as part of a project funded by the Engineering and Physical Sciences Research Council EPSRC which explored how software systems might be enabled to manage the contradictory treatments recommended for patients with multiple morbidities [32,33]. This nested study collates data from a series of semi-structured interviews of clinicians and senior managers from a range of settings (a related paper exploring patient perspectives is in development). This was used in a post-hoc content analysis [34] to populate the “Sustainable integrated chronic care model for multi-morbidity: delivery, financing, and performance (SELFIE)” framework that provides insights for the development, organisation, and evaluation of integrated care for multi-morbidity [34].

2.1.1. The selfie framework

Two decades ago, the World Health Organisation recognised the challenges faced by complex chronically ill patients and the need for better integration of services in order to meet their needs [35]. Since when a number of care frameworks emerged to better understand and meet the complex needs of the growing numbers of multi-morbid patients [36]. These include the multi-morbidity care model [37], the ‘3D’ approach [38], and the standard framework for levels of integrated healthcare for behavioural health and primary care integration [39]. The SELFIE framework is recognised as the most comprehensive of these emerging frameworks [40] was developed by the SELFIE consortium a Horizon2020 funded EU initiative incorporating eight organisations from across Europe coordinated by the Netherlands (www.selfie2020.eu). It has successfully been used in a range of settings and health care models [41,42] and it was chosen here due to its ability to explicitly address a range of contextual influences at multiple levels and guide conceptual discussions and reflection of policy and program components for more integrated care [43]

Its structure consists of a number of coordination concepts from micro- through to macro-levels incorporated within six key components and at its core is the individual with multi-morbidity and their personal environment. The components are informed by the six domains of the World Health Organisation’s interpretation of healthcare systems [44]: Service delivery, relating to the availability and access of care; Leadership & governance, concerned with the policy and oversight that shapes the delivery of care; Workforce, relating to skills and motivation of those responsible for delivering the service; Financing, covers information on payment systems to meet the needs of persons with multi-morbidity; Technologies & Medical Products, that enable the diagnosis and treatment of patients; and Information & Research, which facilitates the use of health information generated to optimise care [34]. A graphical interpretation is presented in Fig. 1.

2.2. Setting, sampling and recruitment

Participants were drawn from the West Midlands and South-East regions in the United Kingdom They were recruited using snowball sampling, with initial participants being familiar to the team and initially invited via email with a copy of the participant information sheet and would then provide informed consent before the commencement of the interview. They would then have the opportunity to ask questions and confirm their wish to proceed. Providing signed consent before the commencement of the interview. Subsequent participants were identified from the recommendations of previous interviewees and the same pattern of recruitment and consent was followed, all in line with our ethical approval [45]. We aimed to conduct a total of 30 interviews across both clinical and senior management groups which is within the recommended range for reaching data saturation within a study of this type [46].

2.3. Data collection

The interviews were conducted by [3rd Author], a PhD student with a background in commissioning and limited experience of qualitative work who was supervised throughout by both [4th Author] and [1st Author]. [3rd Author] was not involved in the clinical care of the participants, although was known to some participants through previous working relationships. The interviews were conducted face-to-face or via the telephone according to the preference and availability of the interviewee. The topic guide was prepared in advance by [1st Author], [4th Author], and [3rd Author] and progressively expanded during the course of the interviews to explore emerging themes in the data [47]. Questions aimed at clinicians were focused on identifying the key barriers and facilitators to treating complex patients across care settings and later iterations included prompts on the usefulness of routine patient appointments and outpatient clinics; questions primarily for senior managers focussed on how well the current systems are designed to treat complex patients and the barriers and facilitators to connecting different parts of the system. The interviews lasted between 25 and 53 minutes, were digitally recorded and transcribed as verbatim and managed by the qualitative software nVivo10. The data from the interviews was contextualised and triangulated using a combination of secondary data that included policy documents, white papers, independent reports, and the academic literature [48].

2.4. Data analysis

Coding was applied to transcripts by [2nd Author] and [1st Author]. We chose a post-hoc content analysis [49] to populate the SELFIE framework. Adopting the ‘unconstrained matrix’ approach suggested by Elo and Kynğäs allowed the development and inclusion of emergent themes within the established framework [49,50]. This enabled us to maintain alignment with our established objectives, and the systematic understanding of environments where potentially unstructured

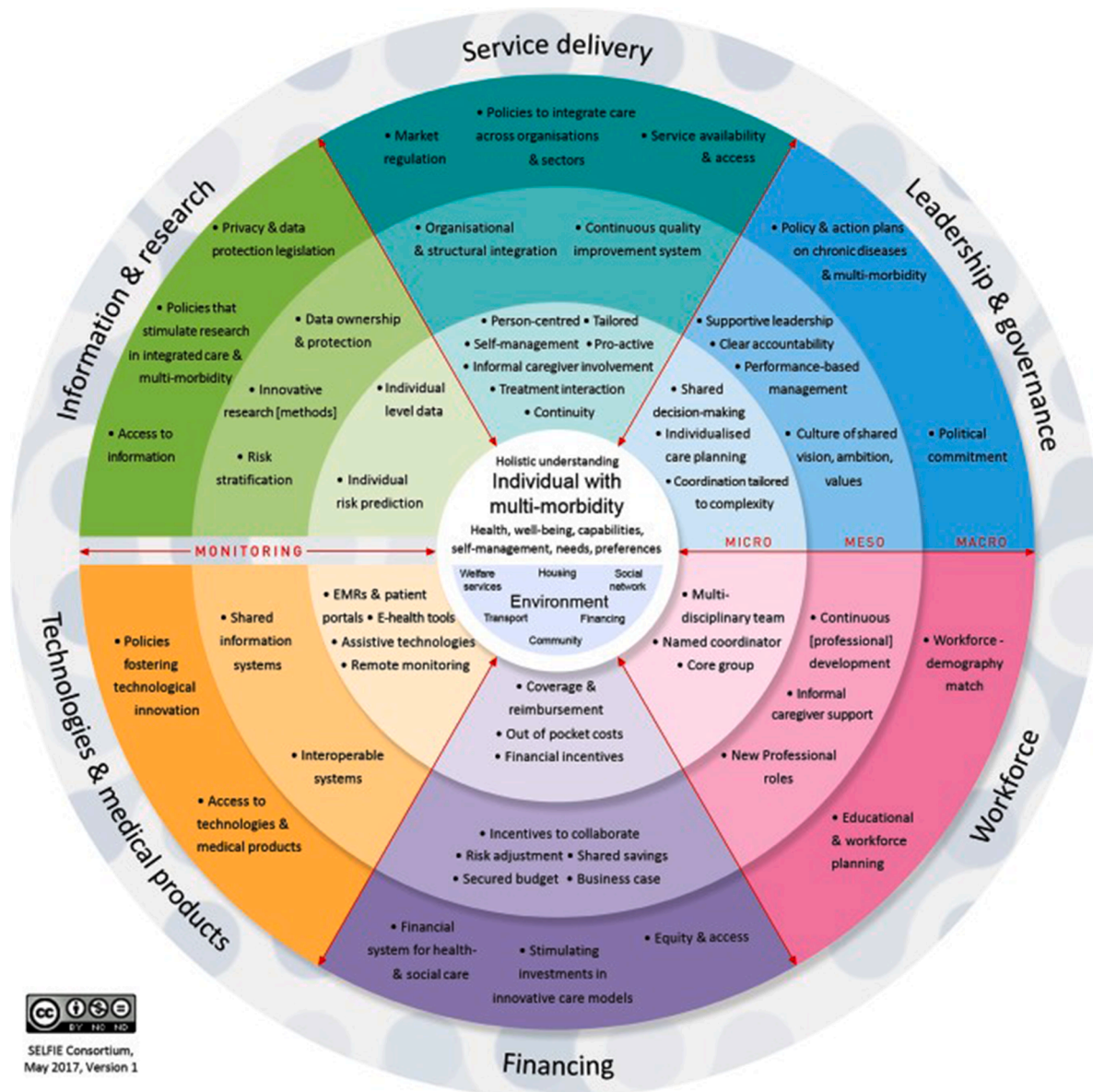


Fig. 1. The SELFIE Framework for Integrated Care for Multi-Morbidity [34].

integrated care practices had developed.

3. Results

3.1. Participant characteristics

Interviews were conducted with 28 participants drawn from the West Midlands and the South- East, 13 were employed as managers with nine performing senior roles associated with primary care. A total of 15 of those interviewed were clinicians with eight involved in respiratory care including consultants and physiotherapists, with two general practitioners (GPs) and one pharmacist working in primary care settings. The characteristics of participants are summarised in Table 1.

3.2. Qualitative results

We analysed the transcripts for data relating to the six components and the associated constructs of the SELFIE framework [34]. Within each component a number of novel themes emerged specifically relating to participants' experience of delivering integrated care. The

components of the SELFIE framework are further defined in Table 2 alongside constructs and emergent themes. These themes are further explored below, alongside illustrative quotes attributed to pseudonymised clinicians and managers. Each quote is identified by the participant code (where the prefix C indicates clinician and M managerial position), the job title, role and/or care setting, and number of years in post.

1. Service delivery: Organisational and structural integration

The current architecture of the NHS is composed of a number of pre-defined care settings that have traditionally operated independently of the other [10]. In relation to this our participants described the organisational and structural integration of care, recognising issues with patient-centred care, poorly defined lines of communication between settings, and noting the benefits of co-locating certain elements of their service.

Patient-centred care

The shift of the care paradigm toward more patient-centred care, i.e. taking into account the patient's desire for information and for sharing decision making [51] has been a widely sought goal of NHSE for nearly two decades yet evidence of its successful adoption remains scarce [52,

Table 1
Participant Demographics.

Management staff n= 13 (46%)*					
<i>Information</i>	<i>Medical director</i>	<i>Senior manager</i>	<i>Senior administrator</i>		
<i>Technology lead</i>					
1 (4)	5 (17)	6 (21)	1 (4)		
Management setting					
<i>Primary care (inc. urgent and emergency care)</i>	<i>Ambulatory care</i>	<i>Private care</i>	<i>Transformation</i>		
9 (32)	1 (4)	1 (4)	2 (8)		
Years in post					
<i>0–5 years</i>	<i>6–10 years</i>				
12 (43)	1 (4)				
Clinical staff n = 15 (54%)					
Clinical role					
<i>Physiotherapist</i>	<i>Consultant</i>	<i>Nursing staff</i>	<i>GP</i>	<i>Pharmacist</i>	<i>Student</i>
2 (8)	5 (18)	2 (8)	2 (8)	1 (4)	3 (12)
Clinical setting					
<i>Primary care</i>	<i>Secondary care</i>				
3 (12)	12 (42)				
Number of years in current post					
<i>0–5 years</i>	<i>6–10 years</i>	<i>11–15 years</i>	<i>16–20 years</i>	<i>21+ years</i>	
7 (25)	4 (14)	1 (4)	1 (4)	1 (4)	

* All percentages are rounded.

53]. A senior manager at one Clinical Commissioning Group (CCG, the body responsible for commissioning services to meet the needs of their patients and local population [54]) felt that person-centred care remained key to the integration of care, suggesting that this might be better managed if responsibility was assumed by a single care provider.

“What we need to do is look at the patient, view them holistically, ‘Which are the area of interventions that this patient needs?’ and ‘Which key worker will be responsible for their care?’ ” M10 (participant code), Senior Manager - CCG, 18 months (in post)

In the opinion of a senior information technology (IT) manager who worked in urgent and emergency care, GPs were best placed to coordinate this holistic care due to their position in the health service that grants them an overview of all diagnoses and treatments related to a single patient.

“They [GPs] are probably the one clinician who has the best most comprehensive view of all the things that might be wrong with you. As soon as you move away from the system that they are using, the

visibility of everything, that whole holistic view of you as a patient starts to fall apart...” M12, IT Lead – Urgent and Emergency Care, 1 Year

Communication between settings

There are continuing challenges within the NHS associated with the accuracy and timeliness of communication between secondary and primary care [55]. As a secondary care consultant recognised, there remains the need to provide GPs with prompt specialist advice.

“GPs often wish they could just touch base with a specialist or someone in a hospital to say, ‘This is the situation, can we have a chat? I don’t want an admission necessarily, I would just like you to provide some advice.’ ” C21, Consultant – Acute Medicine, 2 years

However, one participant observed that the networks and lines of communication that previously existed between primary and secondary care settings are actually being eroded.

“We have lost a lot of that informal networking and pathway development between primary and secondary care, which I think is a great shame” M06, Medical Director - Urgent and Emergency Care, 4 years

Co-location of services

Currently clinics which review patients with chronic conditions are typically conducted for a single disease or condition often within a secondary care facility [56]. A senior director of a care devolution programme (responsible for moving finance and decision making from central government to local health organisations and authorities [57]) felt that locating clinics for patients with complex care needs within primary care facilities would enhance integration with community services.

“The model of doing those sorts of ‘routine’ kind of chronic disease management in the community would be really important, so doing that in primary care would be great, because actually that’s the best place to do it, because that’s where you are able to join up with local services” M05, Medical Director – Care Devolution Programme, 2 years

2. Leadership & governance: Supportive leadership

The traditional focus of senior managers in NHSE is fulfilling the responsibilities specific to the treatment of patients within their own care setting [10]. Participants described the importance of shared responsibility and collaborative leadership across settings if care is to be truly integrated across organisations.

Collaborative leadership

Table 2
Summary of SELFIE informed analytical framework and emerging themes [34].

SELFIE components	Definition	Related construct (<i>Level of influence</i>)	Emerging themes
1.0 Service delivery	The provision of equitable and timely access to safe and appropriate care.	Organisational and structural integration (<i>Meso-</i>)	Patient centred care; Communication between settings; Co-location of services
2.0 Leadership and governance	The strategic policy frameworks and organisational oversight that shape the delivery of care. Includes regulation, system design, and accountability.	Supportive leadership (<i>Meso-</i>)	Collaborative leaders
3.0 Workforce	The knowledge, skills, motivation and deployment of the people responsible for organizing and delivering health services.	Educational and workforce planning (<i>Macro-</i>)	Strategies to improve high-level collaboration
4.0 Financing	The allocation of money to cover the health needs of the people both individually and collectively, includes both core funding and service incentives.	Financial incentives (<i>Micro-</i>)	Target driven healthcare
5.0 Technologies and Medical products	The range of technologies and medical products that can enable all aspects of patient management including accurate diagnosis, and remote monitoring.	Equity and access (<i>Macro-</i>)	Appropriate resource
6.0 Information and Research	Health information generates and manages data and facilitates analysis and synthesis that underpins evidence-based medicine.	Interoperable systems (<i>Meso-</i>)	Sharing patient data; Procurement
		Access to information (<i>Macro-</i>)	General Data Protection Regulation

Participants described “a legacy of primary care versus secondary care” (M08, Senior manager, Urgent and Emergency Care, 13 months), which appeared to stem at least in part from a lack of understanding of other settings. As one participant described:

“The acute sector are just not understanding of what we do in primary care” M06, Medical Director - Urgent and Emergency Care, 4 years

This feeling that there was a lack of understanding of how each setting operated at a senior level was also echoed by a senior manager in the ambulance service.

“The barrier to a lot of pathways working and a lot of pathways to even referrals and things like that is lack of understanding of each other’s bit of the system” M01, Medical Director – Ambulance Service, 2.5 years

A senior manager at a CCG felt the most effective way of facilitating a more cohesive approach was to create a system whereby there was mutual accountability between settings.

“Accountable care systems and accountable care partnerships of some description - the system as it is evolving and created doesn’t move patients between different organisations” M04, Senior Manager – CCG, 6 years

3. Workforce: Educational and workforce planning

Currently the education and training of both management and clinical staff as they become more senior is specific to the care setting and specialism they work in, leaving them less well equipped to adopt more integrated ways of working [58].

Strategies to improve high-level collaboration

Participants felt that a structured attempt to increase awareness of the content of the day-to-day work of colleagues in other settings was required. As a senior lead on a local medical committee (the body charged with representing the needs of their local GPs) described:

“Unless you actually shadow, do that job for a period of time, it’s really hard to actually say, ‘Yes, I know what they do!’” M11, Senior Lead – Local Medical Committee, 5 years

Another senior manager suggested that the act of co-conducting clinics as described above would also facilitate understanding of the role of colleagues from other settings and help build collaborative relationships.

“Even if no one turns up to your clinics or one patient turns up to your clinic in the GP practice, [the consultants] are spending that time building a relationship with those GPs” M05, Medical Director – Healthcare Devolution Programme, 2 years

4. Financing

The public accountability that results from tax-funding means the NHS has become more heavily regulated [59] with the establishment of a number of performance assessment frameworks and a reliance on financial incentives [60].

4.1 Financial incentives

Participants described how current payment systems actively worked against delivering integrated care by focussing on the treatment and management of patients solely within their immediate setting.

Target driven healthcare

At present the NHS pays a tariff to a secondary care facility dependent upon the patients they have processed [61]. An experienced consultant felt this singular approach was not designed to reward care that keeps people healthier.

“The way tariffs work, neither a GP, nor a hospital doctor, or their acute Trust will specifically benefit from keeping people well in the community” C17, Consultant – Respiratory, 10 years

In primary care the quality outcomes framework (QOF) is a points-

based system that rewards general practices for meeting pre-defined targets for the care and management of the patients registered to their practice [60]. However, using the example of COPD, a respiratory consultant suggested the definition of these targets should be decided in conjunction with specialists in secondary care to provide a more holistic reflection of the needs of that patient.

“There should be more secondary care input into what those QOF points are for, what they are given for and for instance, what constitutes an annual review for asthma or COPD, because there are more things that could be done there” C20, Consultant - Respiratory and General Medicine, 15 yrs

4.2 Equity and access

Participants described how improving access to integrated care by moving services into primary care settings or otherwise increasing the length and scope of GP consultations requires appropriate resource.

Appropriate resource

Extending the assessment of patients would require a review of all conditions and medications [62]. This necessitates extending the length of consultations which is problematic in the already pressured environment of general practice where average consultation times are reducing. As one GP describes:

“The time I’m given, ten minutes, it’s incredibly challenging because they will often come about something else, to be able to really look at the whole patient and everything and all the disease and all the different diseases together, if they are on about 15 meds, I would say it takes 20 minutes and...so we don’t!” C18, General Practitioner, 15 years

Similarly, regards the suggestion that some services would be better provided in the community then additional resources must be made available to cope with the increasing demand. As one GP described:

“It is much more appropriate that it be done in the community, absolutely, I don’t want a patient waiting in hospital for things to be done, but have all the resources moved into the community from the acute? No.” C18, General Practitioner – Primary Care, 15 years.

5. Technologies and medical products: Interoperable systems

The expanding range and functionality of technology-enabled health care systems and have created an opportunity for clinicians to access health information from a variety of sources including the electronic health record and patient’s self-reported data [63].

Sharing patient data

For any integrated health service to function then it’s important that clinicians from multiple settings can access the collated medical records of the patient they are treating. As one senior manager described:

“We are less able to deal with something, because you are not equipped with the background information that you need.” M08, Senior Manager – Urgent and Emergency Care, 13 months

The key barrier to the timely access of sharing the patient record across settings and organisations within the NHS is a lack of ‘interoperability’, defined as the unambiguous sharing of data between computer systems [64].

“There isn’t really any widespread interoperability available that allows one system to get that full view” M12, IT Lead – Urgent and Emergency Care, 1 yr

In particular, it was felt that being able to share the clinical management system of GP surgeries with other clinical settings was key to any care provider gaining oversight of a particular patient.

“The most important and valuable area to focus on is access to the GP information, because they hold this kind of master record, and unlocking that is going to be key to enabling other care settings to

have that same fidelity of any information” M12, IT Lead – Urgent and Emergency Care, 1 yr

Procurement

As yet there is not a centralised or unified selection of interoperable software systems recommended by NHS Supply Chain [65]. Instead, a number of options from a list of approved suppliers are provided from which commissioners and senior managers can make independent decisions based on their local needs and priorities.

“Providers shouldn’t be allowed to go off and procure their own system with no thought for interoperability and how it’s going to work somewhere else” M07, Senior Manager – Transformation, 6 months

6. Information and research: Access to information

The ability to collect and collate reliable information on treatment and patient outcomes is the foundation of evidence-based medicine and service improvement [66]. However there are potential issues in accessing and analysing the data held across systems due to regulations designed to protect an individual’s data [67].

General Data Protection Regulation (GDPR)

The GDPR has rightly protected the unwarranted use of identifiable patient data [68]. However, these data protection measures add a layer of complexity for academics and senior staff that would otherwise use this data in an aggregated and anonymised form to monitor and improve integrated care systems and pathways. These restrictions led one senior manager to describe information governance as “a massive barrier” to learning from patient data (M12, IT Lead – Urgent and Emergency Care, 1 yr). Ultimately it was feared that GDPR’s limitation on sharing information will impact on evidence-based integrated care.

“[GDPR] is really problematic for the sharing of information across the system, which will undoubtedly impact on care” M11, Senior Lead – Local Medical Committee, 5 years

4. Discussion

4.1. General findings

Care that is integrated across settings and disciplines is rapidly becoming the ideal of modern health service delivery [1–4]. Our work describes the challenges faced by a range of senior managers and clinicians trying to manage and deliver integrated care within the context of a tax-funded national health service and its embedded and anachronistic organisational structures. The SELFIE framework proved an apposite and valuable tool in understanding integrated care delivery, with the specific themes that emerged in our data overlapping with and reflecting the pre-existing elements of the framework. We have been able to establish some key lessons within each of its six components that can inform policy design, implementation, and evaluation, in NHSE and beyond. In *Service Delivery* we have determined that the lines of communication between settings must be improved and supported and can be reinforced by the co-location of services mutually organised and staffed by care providers from primary and secondary care. In relation to *Leadership and Governance* we identified the need for more collaborative leadership across organisations and settings. Within the *Workforce* component the need for strategies to foster understanding and the roles and challenges faced by colleagues was recognised. With regards *Financing*, it appears that financial incentives need to better reflect the shared responsibility required for integrated care across settings; In relation to *Technologies and Medical Products*, a more strategic approach is required in the procurement of software systems to enable the sharing of clinical data; finally, related to *Information and Research* the importance of finding ways in which evolving health care services can learn from the data they generate was acknowledged, requiring careful consideration of how to accommodate data protection legislation.

4.2. Specific findings

4.2.1. Organisational and structural integration

Presently in NHSE, primary and secondary care typically operate independently of the other [69] meaning patients are often passed between the two with little shared responsibility or accountability [7,70]. This was described, by one participant, as the “legacy of primary vs secondary care” and a re-orientation towards a more collaborative approach between GPs and specialists was recommended by many we spoke to. This is expected to form part of the new integrated systems of care and there are a number of ways in might be achieved [71]. An additional role for the GP as a coordinator of care was suggested by some of our participants. The current workload of GPs would appear to preclude them assuming this additional responsibility. However the more realistic move to train additional staff in the role of “care navigator” to support patients negotiating a range of clinical needs is underway [72]. Another element that might encourage closer collaboration across settings is the improved communication between colleagues in primary and secondary care [73–75]. However, this is more fundamental than providing the technical means of communication with reason to believe that a cultural shift is necessary as initiatives such as Consultant Connect (which expedites GPs’ ability to ‘phone a consultant for advice’) remained under-utilised [76] until the COVID-19 pandemic [77]. Our participants also suggested reconfiguring outpatient clinics so they might involve both primary and secondary care clinicians working together in shared clinics to enable a multi-disciplinary review of all co-morbidities and associated medications [78]. There have been recent initiatives in the UK that have attempted this, such as ImpACT (Improving Adult Respiratory Care Together) but again it took the pandemic to increase its’ utilisation [79].

4.2.2. Leadership and governance

Participants described how fragmentation between services is embedded within a health service structure that has so far failed to respond to the increased complexity of patients and treatments [80]. As a result healthcare professionals need to be encouraged to think beyond their “silo” [53,81,82] and a philosophy that embraces change and a collaborative approach to leadership is needed [83–87]. Where these attributes have previously been exhibited by senior staff multidisciplinary cooperation has improved [44,85,88] and the tension that can result when differing skills and ways of working converge has been diluted [89]. However, finding and training individuals capable of this collaborative leadership can be problematic as those candidates that exhibit a more open approach to management can feel formal protocols obstruct constructive change, therefore a more concerted effort is required to find or inspire the appropriate personalities to undertake progressive leadership roles [90].

4.2.3. Workforce

The NHS is facing a recruitment crisis across all sectors with recognised shortfalls in the number of GPs in primary care [91] and nurses in secondary care [92]. As a result, amongst NHSE plans for greater integration of care are a number of initiatives that target both recruitment [93] and developing the existing workforce to better work together across disciplines [92,94–96]. One way to foster understanding and collaboration as suggested by one of our participants, is by employing observational training techniques such as shadowing where individuals spend time closely observing the daily work activities of a colleague [97, 98]. These have helped students build competencies in inter-professional collaborative practice [86,87,99,100], promoted understanding and respect for healthcare professionals from other sectors [87], and previously proven effective in educating healthcare leaders in the NHS [101,102].

4.2.4. Financing

The chronic underfunding of the NHS of recent years looks set to

continue amidst the additional financial stress of the COVID pandemic [103] with the previous model configured to create a competitive market internal to the NHS wasting millions on competitive tendering [28,104–106]. As noted by the GPs we spoke to, the introduction of integrated models of care requires additional funding targeted to foster and support collaborative working [107,108]. There have been ‘pilots’ at a number of sites across the UK where various models of more integrated care have received appropriate funding, though the evidence of benefits to patients has proven hard to quantify and the unceasing pressure on GPs meant they continued to prioritise speed over thoroughness [109,110]. Participants also described the need to rethink single-condition, target driven incentives such as QOF [60] or the tariff system used in secondary care [61] and move toward a system that rewarded a more holistic approach [111].

4.2.5. Technologies and medical products

Many participants described how the lack of clinician accessibility to relevant patient data remains a significant barrier to more integrated care, reflecting long-standing issues with interoperability in the distributed data management systems of the NHS [112,113]. There is evidence from the UK and elsewhere that executed effectively, sharing data across systems not only underpins the quality and safety of care [64,114] but also reduces workload for health care providers [115], treatment delays [116], and overall costs to the healthcare system [117]. If integrated care is to be successful in NHSE there must be more concerted efforts to procure software systems semantically consistent with one another [118,119].

4.2.6. Information and research

If any model of healthcare is to continually improve then aggregating and analysing the data it produces is required, both to contribute to the evidence base for clinical care, and evaluate the development of progressive health system policy [120]. Despite this, applying for the necessary ethical permissions to use the multiple data sets produced across various settings remains a lengthy administrative process for academic involvement [120]. In this regard participants recognised that data protection needs to be upheld, but not obstruct care delivery [121] and to this end the NHS has produced a Code of Conduct for Data-Driven Health and Care Technology designed to support the secure processing of personal data in complex healthcare settings which will prove a valuable asset in developing and improving the nascent systems [67].

4.3. Strengths and limitations

Although primarily exploring current models of delivering care to patients with multimorbidity the data has proven a rich source of evidence for understanding the integration of care. The post-hoc content analysis led to data being allocated to every component whilst allowing for themes to emerge that chimed with existing elements. In doing so it demonstrated the value of using the SELFIE framework to provide relevant and structured insight into the reality of delivering integrated care (see Fig. 1) [34]. The rigour of the study was upheld by employing a number of recommended strategies; clear and accurate records of the progress of the work were shared across the team [122], we were open about the experience and prior knowledge of the interviewer [123] and have used rich and verbatim descriptions of participants comments [124]. In addition, the analysis was supported by a second researcher working independently [122] and our findings were triangulated using secondary data [125]. Although participants were drawn from a range of senior management and clinical roles working within primary, secondary and ambulatory settings consultants from other specialities beyond respiratory care may offer different perspectives, and we did not attempt to speak to representatives from the social care sector which is also due to form part of the new integrated health care system in the NHSE. We have not described the regional location of our participants so as to retain their anonymity and logistical restrictions meant there was no

participant input into the corrections of the transcriptions.

5. Conclusions

As integrated care systems become reality in the UK this work has provided a timely insight into the challenges faced by policymakers, commissioners and other senior staff when attempting to deliver integrated care. There is undoubted room for a broader evidence-base to inform integrated care design, and future research should utilise long-term mixed-methods evaluations that not only incorporate staff and organisational perspectives but also the experiences and outcomes of patients. In the meantime, our work has shown that there are opportunities to learn from existing experiences to inform the provision of appropriate and practical support required of collaboration at all levels of service delivery.

Whether following care pathways that traverse settings and expertise or delivered as part of fundamentally new networks or partnerships there is a need for future policies to recognise and address the fragility and inconsistencies exposed by current ad hoc modes of integration. They can begin by facilitating greater understanding of the experiences and priorities that exist between settings, improving communication and supporting shared leadership. There also appears a clear role for refocussing financial incentives to reward shared responsibility at all levels of service delivery from commissioning services to the management of individual patients.

Ethical approval

Ethical approval was granted by the University of Birmingham’s Science Technology Engineering and Medicine Research Ethics Committee (ERNE_16–0004) for the recruitment of staff members. Potential participants were contacted via email which included the information sheet. They then had the opportunity to ask further questions directly of the study team. The consent form would then be signed prior to the interview.

Consent for publication

Not applicable.

Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available due as the consent did not include the dissemination of the data for use beyond this study.

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Declaration of Competing Interest

The authors declare that they have no competing interests.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.healthpol.2022.05.010.

References

- [1] Organisation WH. WHO (2020b), People-Centred and Integrated Health Services: an Overview of the Evidence, 2020.
- [2] Organisation WH. People-Centred and Integrated Health Services: an Overview of the Evidence, 2020.
- [3] Ling T, Brereton L, Conklin A, Newbould J, Roland M. Barriers and facilitators to integrating care: experiences from the English Integrated Care Pilots. *Int J Integr Care* 2012;12.
- [4] Schrijvers G, Goodwin N. Looking back whilst moving forward: observations on the science and application of integrated care over the past 10 years and predictions for what the next 10 years may hold. *Int J Integr Care* 2010;10.
- [5] Care NCFI, Support. Integrated care and support: our shared commitment. National Collaboration for Integrated Care and Support London; 2013.
- [6] Physicians RCo. editor putting the pieces together: removing the barriers to excellent patient care. RCP London; 2015.
- [7] Mathers N, Patel V, Thomas M. General practice and the integration of care: an rcgp policy report. London: Royal College of General Practitioners; 2012.
- [8] Kozłowska O, Lumb A, Tan GD, Rea R. Barriers and facilitators to integrating primary and specialist healthcare in the United Kingdom: a narrative literature review. *Future healthcare journal* 2018;5(1):64.
- [9] NHS England. General Practice Forward View. 2016.
- [10] Hughes LD, McMurdo ME, Guthrie B. Guidelines for people not for diseases: the challenges of applying UK clinical guidelines to people with multimorbidity. *Age Ageing* 2013;42(1):62–9.
- [11] Mares J. Resistance of health personnel to changes in healthcare. *Kontakt* 2018; 20(3):e262–ee72.
- [12] Sanderson M., Allen P., Osipovic D., Boiko O., Lorne C. The Developing Architecture of System Management: integrated Care Systems and Sustainability and Transformation Partnerships. PRUComm Report. 2021.
- [13] Goodwin N, Dixon A, Anderson G, Wodchis W. Providing integrated care for older people with complex needs: lessons from seven international case studies. King's Fund London; 2014.
- [14] Davis SF, Hinde S, Ariss S. Complex programme evaluation of a 'new care model' vanguard: a shared commitment to quality improvement in an integrated health and care context. *BMJ Open* 2020;10(3):e029174.
- [15] Bhattacharyya O, Shaw J, Sinha S, Gordon D, Shahid S, Wodchis WP, et al. Innovative Integrated Health And Social Care Programs in Eleven High-Income Countries: study reports on thirty health and social care programs in eleven high-income countries that delivered care in innovative ways. *Health Aff* 2020;39(4): 689–96.
- [16] Heide I, Snoeijls S, Boerma W, Schellevis F, Rijken P. How to strengthen patient-centredness in caring for people with multimorbidity in Europe? Policy Brief 22. Health systems and policy analysis 2017.
- [17] Rutten-van Molken M, Leijten F, Hoedemakers M, Tsiachristas A, Verbeek N, Karimi M, et al. Strengthening the evidence-base of integrated care for people with multi-morbidity in Europe using Multi-Criteria Decision Analysis (MCDA). *BMC Health Serv Res* 2018;18(1):1–18.
- [18] Arora A, Wright A, Cheng M, Khwaja Z, Seah M. Innovation Pathways in the NHS: an Introductory Review. *Ther Innov Regul Sci* 2021:1–14.
- [19] Wilson P, Billings J, MacInnes J, Mikelyte R, Welch E, Checkland K. Investigating the nature and quality of locally commissioned evaluations of the NHS Vanguard programme: an evidence synthesis. *Health Research Policy and Systems* 2021;19(1):63.
- [20] Maniopoulos G, Hunter DJ, Erskine J, Hudson B. Lessons learnt from the implementation of new care models in the NHS: a qualitative study of the North East Vanguards programme. *BMJ Open* 2019;9(11):e032107.
- [21] Gullery C, Hamilton G. Towards integrated person-centred healthcare—the Canterbury journey. *Future Hospital Journal* 2015;2(2):111.
- [22] Czapionka T, Kraus M, Reiss M, Baltaxe E, Roca J, Ruths S, et al. The patient at the centre: evidence from 17 European integrated care programmes for persons with complex needs. *BMC Health Serv Res* 2020;20(1):1–14.
- [23] Cowling TE, Cecil EV, Soljak MA, Lee JT, Millett C, Majeed A, et al. Access to primary care and visits to emergency departments in England: a cross-sectional, population-based study. *PLoS One* 2013;8(6):e66699.
- [24] Osborn R, Moulds D, Schneider EC, Doty MM, Squires D, Sarnak DO. Primary care physicians in ten countries report challenges caring for patients with complex health needs. *Health Aff* 2015;34(12):2104–12.
- [25] Salisbury C, Johnson L, Purdy S, Valderas JM, Montgomery AA. Epidemiology and impact of multimorbidity in primary care: a retrospective cohort study. *Br J Gen Pract* 2011;61(582):e12–21.
- [26] Barnett K, Mercer SW, Norbury M, Watt G, Wyke S, Guthrie B. Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. *Lancet North Am Ed* 2012;380(9836):37–43.
- [27] Coventry PA, Fisher L, Kenning C, Bee P, Bower P. Capacity, responsibility, and motivation: a critical qualitative evaluation of patient and practitioner views about barriers to self-management in people with multimorbidity. *BMC Health Serv Res* 2014;14(1):1–12.
- [28] Damarell RA, Morgan DD, Tieman JJ. General practitioner strategies for managing patients with multimorbidity: a systematic review and thematic synthesis of qualitative research. *BMC Fam Pract* 2020;21(1):131.
- [29] du Vaure CB, Ravaud P, Baron G, Barnes C, Gilberg S, Boutron I. Potential workload in applying clinical practice guidelines for patients with chronic conditions and multimorbidity: a systematic analysis. *BMJ Open* 2016;6(3): e010119.
- [30] Zhang MW, Ho RC, Cheung MW, Fu E, Mak A. Prevalence of depressive symptoms in patients with chronic obstructive pulmonary disease: a systematic review, meta-analysis and meta-regression. *Hum Hosp Psychiatry* 2011;33(3):217–23.
- [31] Chen W, Thomas J, Sadatsafavi M, FitzGerald JM. Risk of cardiovascular comorbidity in patients with chronic obstructive pulmonary diseases: a systematic review and meta-analysis. *The Lancet Respiratory medicine* 2015;3(8):631–9.
- [32] Litchfield I, Turner A, Backman R, Bosco Ferreira Filho J, Lee M. Automated conflict resolution between multiple clinical pathways: a technology report. *J Innov Health Inform* 2018;25(3):142–8.
- [33] Weber P, Filho JBF, Bordbar B, Lee M, Litchfield I, Backman R. Automated conflict detection between medical care pathways. *Journal of Software: Evolution and Process* 2018;30(7):e1898.
- [34] Leijten FR, Struckmann V, van Ginneken E, Czapionka T, Kraus M, Reiss M, et al. The SELFIE framework for integrated care for multi-morbidity: development and description. *Health Policy (New York)* 2018;122(1):12–22.
- [35] Organization WH. Innovative care for chronic conditions: building blocks for actions: global report. World Health Organization; 2002.
- [36] Struckmann V, Leijten FR, van Ginneken E, Kraus M, Reiss M, Spranger A, et al. Relevant models and elements of integrated care for multi-morbidity: results of a scoping review. *Health Policy (New York)* 2018;122(1):23–35.
- [37] Palmer K, Marengoni A, Forjaz MJ, Jureviciene E, Laatikainen T, Mammarella F, et al. Multimorbidity care model: recommendations from the consensus meeting of the joint action on chronic diseases and promoting healthy ageing across the life cycle (JA-CHRODIS). *Health Policy (New York)* 2018;122(1):4–11.
- [38] Salisbury C, Man M-S, Bower P, Guthrie B, Chaplin K, Gaunt DM, et al. Management of multimorbidity using a patient-centred care model: a pragmatic cluster-randomised trial of the 3D approach. *Lancet North Am Ed* 2018;392(10141):41–50.
- [39] Wodchis WP, Shaw J, Sinha S, Bhattacharyya O, Shahid S, Anderson G. Innovative Policy Supports For Integrated Health And Social Care Programs In High-Income Countries: an evaluation of innovative policy supports to provide integrated health and social care to high-needs and high-cost populations in high-income countries. *Health Aff* 2020;39(4):697–703.
- [40] Peterson K, Anderson J, Bourne D, Charns MP, Gorin SS, Hynes DM, et al. Health Care Coordination Theoretical Frameworks: a Systematic Scoping Review to Increase Their Understanding and Use in Practice. *J Gen Intern Med* 2019;34(1): 90–8.
- [41] Sandhu S, Sharma A, Cholera R, Bettger JP. Integrated Health and Social Care in the United States: a Decade of Policy Progress. *Int J Integr Care* 2021;21(4):9–.
- [42] Bell C, Appel CW, Frölich A, Prior A, Vedsted P. Improving Health Care for Patients with Multimorbidity: a Mixed-Methods Study to Explore the Feasibility and Process of Aligning Scheduled Outpatient Appointments through Collaboration between Medical Specialties. *Int J Integr Care* 2022;22(1).
- [43] Tsiachristas A, van Ginneken E, Rijken M. Tackling the challenge of multimorbidity: actions for health policy and research. *Health Policy (New York)* 2018; 122(1):1–3.
- [44] Organization WH. Framework for action on interprofessional education & collaborative practice. Geneva: WHO; 2010 [Internet]. 2010 [cited Jun/Jul 1, 2018]. 2010.
- [45] Sedgwick P. Snowball sampling. *BMJ* 2013;347.
- [46] Guest G, Bunce A, Johnson L. How many interviews are enough? An experiment with data saturation and variability. *Field methods* 2006;18(1):59–82.
- [47] Smulowitz S. Constant comparison. *The International Encyclopedia of Communication Research Methods* 2017:1–2.
- [48] Young WB, Ryu H. Secondary Data for Policy Studies: benefits and Challenges. *Policy, Politics, & Nursing Practice* 2000;1(4):302–7.
- [49] Elo S, Kyngäs H. The qualitative content analysis process. *J Adv Nurs* 2008;62(1): 107–15.
- [50] Bingham A.J., Witkowsky P. Deductive and inductive approaches to qualitative data analysis. *Analyzing and interpreting qualitative data: after the interview.* 2021:133–46.
- [51] Stewart M. Towards a global definition of patient centred care. *BMJ (Clinical research ed)* 2001;322(7284):444–5.
- [52] Santana M-J, Ahmed S, Lorenzetti D, Jolley RJ, Manalili K, Zelinsky S, et al. Measuring patient-centred system performance: a scoping review of patient-centred care quality indicators. *BMJ Open* 2019;9(1):e023596.
- [53] Collins B. Adoption and spread of innovation in the nhs. London: The Kings Fund; 2018.
- [54] England N. A review of the role and costs of clinical commissioning groups. London: National Audit Office; 2018.
- [55] Price A, Majeed A. Improving how secondary care and general practice in England work together: requirements in the NHS Standard Contract. *J R Soc Med* 2018;111(2):42–6.
- [56] Chowdhury T, Nilforooshan R. No more routine outpatient appointments in the NHS: it is time to shift to data-driven appointment. *Int J Qual Health Care* 2021; 33(1):mzaa150.
- [57] Vize R. The big devolution deal—Or no deal? *BMJ* 2018;360:k1217.
- [58] Anderson M, O'Neill C, Clark JM, Street A, Woods M, Johnston-Webber C, et al. Securing a sustainable and fit-for-purpose UK health and care workforce. *Lancet North Am Ed* 2021.
- [59] Klein R. The National Health Service (NHS) at 70: bevan's double-edged legacy. *Cambridge Core: Health Economics, Policy and Law* 2018;14(1):1–10.
- [60] Digital N. Quality and Outcomes Framework (QOF), enhanced services and core contract extraction specifications (business rules) [Available from: <https://digital.nhs.uk/data-and-information/data-collections-and-data-sets/data-collections/quality-and-outcomes-framework-qof>].

- [61] Jenkins P, Maheswaran A. Payments Systems in the NHS. *FFF Clinical Finance Journal* 2020;1(1):25–33.
- [62] Mathers N, Paynton D. Rhetoric and reality in person-centred care: introducing the House of Care framework. *British Journal of General Practice*; 2016:12–3.
- [63] Franklin M, Thorn J. Self-reported and routinely collected electronic healthcare resource-use data for trial-based economic evaluations: the current state of play in England and considerations for the future. *BMC Med Res Methodol* 2019;19(1):1–13.
- [64] Li E, Clarke J, Neves AL, Ashrafian H, Darzi A. Protocol: electronic Health Records, Interoperability and Patient Safety in Health Systems of High-income Countries: a Systematic Review Protocol. *BMJ Open* 2021;11(7).
- [65] Hall D., Lister J., Mercer H. Privatised and unprepared: the NHS supply chain. 2020.
- [66] Scobie S, Castle-Clarke S. What can the NHS learn from learning health systems. Nuffield Trust 2019.
- [67] Savirimuthu J. The GDPR, AI and the NHS Code of Conduct for Data-Driven Health and Care Technology. *Health Data Privacy under the GDPR*: Routledge 2020:133–56.
- [68] European General Data Protection Regulation (GDPR), (2016).
- [69] Banks J, Stone T, Dodd J. Integrating care between an NHS hospital, a community provider and the role of commissioning: the experience of developing an integrated respiratory service. *BMJ Open* 2020;10(12):e040267.
- [70] Wammes JGG, Jeurissen PPT, Verhoef LM, Assendelft WJ, Westert GP, Faber MJ. Is the role as gatekeeper still feasible? A survey among Dutch general practitioners. *Fam Pract* 2014;31(5):538–44.
- [71] Dinsdale E, Hannigan A, O'Connor R, O'Doherty J, Glynn L, Casey M, et al. Communication between primary and secondary care: deficits and danger. *Fam Pract* 2020;37(1):63–8.
- [72] Tierney S, Wong G, Mahtani KR. Current understanding and implementation of 'care navigation' across England: a cross-sectional study of NHS clinical commissioning groups. *Br J Gen Pract* 2019;69(687):e675–e681.
- [73] Cresswell A, Hart M, Suchanek O, Young T, Leaver L, Hibbs S. Mind the gap: improving discharge communication between secondary and primary care. *BMJ Open Quality* 2015;4(1). u207936. w3197.
- [74] Sampson R, Cooper J, Barbour R, Polson R, Wilson P. Patients' perspectives on the medical primary–secondary care interface: systematic review and synthesis of qualitative research. *BMJ Open* 2015;5(10):e008708.
- [75] Agarwal R, Sands DZ, Schneider JD, Smaltz DH. Quantifying the economic impact of communication inefficiencies in US hospitals. *J Healthc Manag* 2010;55(4).
- [76] Williams J, Fairbairn E, McGrath R, Clark A, Healey A, Bakolis I, et al. Development and rapid evaluation of services to support the physical health of people using psychiatric inpatient units during the COVID-19 pandemic: study protocol. *Implementation Science Communications* 2021;2(1):1–9.
- [77] Snooks H, Watkins AJ, Bell F, Brady M, Carson-Stevens A, Duncan E, et al. Call volume, triage outcomes, and protocols during the first wave of the COVID-19 pandemic in the United Kingdom: results of a national survey. *Journal of the American College of Emergency Physicians Open* 2021;2(4):e12492.
- [78] Richter S, Demirer I, Choi K-E, Hartrampf J, Pfaff H, Korbach U. People with multimorbidity in outpatient care: patient-focused and needs-oriented healthcare management (MamBo) – protocol for a multiperspective evaluation study. *BMC Health Serv Res* 2020;20(1):296.
- [79] Patel I. Integrated respiratory care. *Clinics in Integrated Care* 2021;6:100053.
- [80] McCartney M. Margaret McCartney: breaking down the silo walls. *BMJ* 2016:354.
- [81] Salisbury H. Helen Salisbury: climbing out of our silos. *BMJ* 2020;371:m3875.
- [82] King O, Shaw N. '... breaks down silos': allied health clinicians' perceptions of informal interprofessional interactions in the healthcare workplace. *Health Sociology Review* 2021;1–17.
- [83] Fougner M, Hornthvedt T. Students' reflections on shadowing interprofessional teamwork: a Norwegian case study. *J Interprof Care* 2011;25(1):33–8.
- [84] Langendyk V, Hegazi I, Cowin L, Johnson M, Wilson I. Imagining alternative professional identities: reconfiguring professional boundaries between nursing students and medical students. *Acad Med* 2015;90(6):732–7.
- [85] Aufegger L, Alabi M, Darzi A, Bicknell C. Sharing leadership: current attitudes, barriers and needs of clinical and non-clinical managers in UK's integrated care system. *BMJ Leader* 2020. leader-2020-000228.
- [86] Rosen L, Mahon JN, Murdock S, Moran C, Buckley K. Off to the right start: a model for developing collaboration with nurses early in medical school. *Med Sci Educ* 2013;23(3):513–23.
- [87] Shafran DM, Richardson L, Bonta M. A novel interprofessional shadowing initiative for senior medical students. *Med Teach* 2015;37(1):86–9.
- [88] Carson JB, Tesluk PE, Marrone JA. Shared leadership in teams: an investigation of antecedent conditions and performance. *Acad Manag J* 2007;50(5):1217–34.
- [89] Hoff TJ. The social organization of physician-managers in a changing HMO. *Work Occup* 1999;26(3):324–51.
- [90] Mountford J, Webb C. When clinicians lead: the McKinsey Quarterly. *Health Leadersh Rep* 2009;28(5):1–3.
- [91] Health Education England. *The Future of Primary Care*. 2019.
- [92] Improvement N. Evidence from NHS improvement on clinical staff shortages. A workforce analysis Updated. 2016.
- [93] Hemmings N., Buckingham H., Oung C., Palmer W. Attracting, supporting, and retaining a diverse NHS workforce.
- [94] Akehurst J, Stronge P, Giles K, Ling J. Making a difference: workforce skills and capacity for integrated care. *Journal of Integrated Care* 2021.
- [95] Improvement N. Developing people improving care: one year on. 2018.
- [96] England N. Integrated care systems. NHS. www.england.nhs.uk/integratedcare/integrated-care-systems [Accessed ...]; 2020.
- [97] Houston JF, Morgan JE. Paired learning–improving collaboration between clinicians and managers. *J Health Organ Manag* 2018.
- [98] Rimmer A. NHS England workforce plan fails to tackle staff shortages, say health leaders. *British Medical Journal Publishing Group*; 2020.
- [99] Kusnoor AV, Stelljes LA. Interprofessional learning through shadowing: insights and lessons learned. *Med Teach* 2016;38(12):1278–84.
- [100] Kramers S. Shadowing as a technique for leadership development for healthcare professionals: a qualitative study 2018.
- [101] Lalleman P, Bouma J, Smid G, Rasiah J, Schuurmans M. Peer-to-peer shadowing as a technique for the development of nurse middle managers clinical leadership. *Leadersh Health Serv (Bradford Engl)* 2017;30(4):475–90.
- [102] Nicolini D, Korica M., Ruddle K. Staying in the know: MIT Sloan Management Review; 2015.
- [103] Charlesworth A, Watt T, Gardner T. Returning nhs waiting times to 18 weeks for routine treatment. *The Health Foundation*; 2020.
- [104] Moberly T. Scrap NHS competition rules, BMA says. *BMJ* 2018;361:k2791.
- [105] Sinnott C, Mc Hugh S, Browne J, Bradley C. GPs' perspectives on the management of patients with multimorbidity: systematic review and synthesis of qualitative research. *BMJ Open* 2013;3(9):e003610.
- [106] Cowper A. Leaked government white paper ends England's NHS internal market and returns power to health secretary. *BMJ* 2021:372.
- [107] Stokes J, Shah V, Goldzahl L, Kristensen SR, Sutton M. Does prevention-focused integration lead to the triple aim? An evaluation of two new care models in England. *J Health Serv Res Policy* 2021;26(2):125–32.
- [108] Stokes J, Struckmann V, Kristensen SR, Fuchs S, van Ginneken E, Tsiachristas A, et al. Towards incentivising integration: a typology of payments for integrated care. *Health Policy (New York)* 2018;122(9):963–9.
- [109] Salisbury C, Man M-S, Bower P, Guthrie B, Chaplin K, Gaunt DM, et al. Management of multimorbidity using a patient-centred care model: a pragmatic cluster-randomised trial of the 3D approach. *Lancet North Am Ed* 2018;392(10141):41–50.
- [110] Duncan P, Cabral C, McCahon D, Guthrie B, Ridd MJ. Efficiency versus thoroughness in medication review: a qualitative interview study in UK primary care. *Br J Gen Pract* 2019;69(680):e190–e8.
- [111] Mandavia R, Mehta N, Schilder A, Mossialos E. Effectiveness of UK provider financial incentives on quality of care: a systematic review. *Br J Gen Pract* 2017; 67(664):e800–e815.
- [112] Campion-Awwad O., Hayton A., Smith L., Vuaran M. *The National Programme for IT in the NHS. A case history*. 2014.
- [113] Standardization IOF. *Health informatics-Electronic health record-Definition, scope and context*: na; 2005.
- [114] Ghosh K, Dohan MS, Curl E, Goodwin M, Morrell P, Guidroz P. Information tools for care coordination in patient handover: is an electronic medical record enough to support nurses? *Health Care Manage Rev* 2020.
- [115] Fennelly O, Cunningham C, Grogan L, Cronin H, O'Shea C, Roche M, et al. Successfully implementing a national electronic health record: a rapid umbrella review. *Int J Med Inform* 2020:104281.
- [116] Rothman B, Leonard JC, Vigoda MM. Future of electronic health records: implications for decision support. *Mount Sinai Journal of Medicine: A Journal of Translational and Personalized Medicine* 2012;79(6):757–68.
- [117] Highfill T. Do hospitals with electronic health records have lower costs? A systematic review and meta-analysis. *Int J Healthc Manag* 2020;13(1):65–71.
- [118] Boulding H, Hinrichs-Krapels S. Factors influencing procurement behaviour and decision-making: an exploratory qualitative study in a UK healthcare provider. *BMC Health Serv Res* 2021;21(1):1–11.
- [119] M S, Chacko AM. 2 - Interoperability issues in EHR systems: research directions. In: Lee KC, Roy SS, Samui P, Kumar V, editors. *Data analytics in biomedical engineering and healthcare*. Academic Press; 2021. p. 13–28.
- [120] Enticott J, Johnson A, Teede H. Learning health systems using data to drive healthcare improvement and impact: a systematic review. *BMC Health Serv Res* 2021;21(1):1–16.
- [121] Carvalho M, Bandiera-Paiva P, Marques E, Machado JM. Health Information Systems (HIS) Privacy Restrictions for GDPR: assessing Initial Impacts Perceived by Patients and Healthcare Professionals. *International Journal of Reliable and Quality E-Healthcare (IJRQEH)* 2021;10(2):4–16.
- [122] Sandelowski M. Rigor or rigor mortis: the problem of rigor in qualitative research. *Advances in Nursing Science* 1993;16(2):1–8.
- [123] Morse J., Barrett M., Mayan M. Verification strategies for establishing reliability and validity in qualitative research-ejournals. *library-ualberta. ca*. 2002.
- [124] Slevin E, Sines D. Enhancing the truthfulness, consistency and transferability of a qualitative study: utilising a manifold of approaches. *Nurse Researcher (through 2013)* 1999;7(2):79.
- [125] Kuper A, Lingard L, Levinson W. Critically appraising qualitative research. *BMJ* 2008:337.