Digital requirements for new primary care models

A briefing for clinicians and managers

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About this briefing

Primary care is changing in response to demographic changes, more complex patients and a range of policy and financial pressures. This briefing sets out some emerging trends in primary care and describes how technology can be employed to support them. We provide case study examples of six primary care organisations using technology to underpin new ways of working and discuss a possible future in which general practice operates at scale; where there are permeable boundaries between organisations and sectors; and where the primary care team encompasses a diverse range of professionals. Finally, we highlight the local and national barriers to realising this vision, and discuss how they can be overcome.

Acknowledgements

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Key points

Primary care is changing. New approaches to care delivery and organisational design are emerging in response to demographic changes, more complex patients and a range of policy and financial pressures. Technology is playing a central role in supporting the development of these new models, facilitating collaboration and integration across multiple care providers and settings; improving communication between patients and professionals; increasing efficiency and empowering patients to manage their health and wellbeing more effectively.

All of this technology is available now, but very few primary care providers are using it – and no single organisation is using all of it. However, some organisations have employed technology to support new ways of working, with positive results.

Taken together, these trends in primary care, enabling technologies, and pioneering organisations paint a possible picture of what the future of primary care could look like:

- **Primary care practices will be part of scaled-up organisations** taking responsibility for local populations.

- **There will be permeable boundaries between primary, secondary and community care** supported by shared electronic health records and data, professional-to-professional telehealth and improvements in back-end technology such as e-rostering and finance systems.

- **The professional make-up of primary care teams will be more diverse. GPs will act as a consultant and expert** for the rest of the team, with ready access to the expertise of secondary care colleagues.

- **Patient access will be improved, supported by remote consultations**, mobile working, sign-posting to other services and alternatives to GPs within the primary care team.

- Primary care will take a **population-based and more proactive approach, as well as providing increased continuity** for patients with complex needs using shared data and electronic health records.

- **Patients will be more empowered**, supported by patient portals, peer support services and improved access to information and resources.

- There will be **improvements in quality of care** supported by computerised clinical decision support systems (CDSSs) and an increased emphasis on ongoing professional development and education supported by virtual communities of practice and online knowledge-sharing platforms.

Despite this potential, there are local and national challenges facing primary care organisations in realising this future. **Local challenges include the following:**

- **Patients and professionals can be resistant to change**. Ensuring clinical and patient buy-in is therefore essential.

- **Gaps in IT capability or IT infrastructure can hinder transformational progress**. Organisations must therefore invest in technological solutions.

- **Ensuring engagement from CCGs** is a particular issue when individual practices are keen to procure digital solutions from commercial providers. Demonstrating the benefit of the technology; identifying existing demand by demonstrating provider or patient interest; and engaging CCGs on strategic-level programme boards can all help with this.

- **Transformational change requires significant staff time** for change management, training and embedding new processes. Organisations must invest resources to free up time for clinicians to focus on strategic objectives and develop plans to ensure staff engagement and commitment.

National challenges include the following:

- **Information governance is a key concern for data sharing across organisations and between providers and patients**. There is a tension between the Health and Social Care Act 2012, which sets the expectation that personal confidential data will be managed centrally in order to protect confidentiality, and the Data Protection Act 1998, which stresses that patients must be informed about how their data will be used.

- At present, **different clinical software systems within general practice do not work together**, and this is compounded by the multitude of systems in use in secondary and community care. A national response is required to ensure this is addressed.

- **Organisations implementing new solutions face a reliance on limited funds** – such as those awarded through the Prime Minister's Challenge Fund. This affects the sustainability of new models and the scaling up of pilot projects.

Given the way in which primary care is evolving, we suggest that three technologies should be prioritised, locally and nationally:

- Shared **electronic health records** (supported by sound interoperability and information governance mechanisms) to facilitate coordinated care

- **Telehealth solutions** to improve patient access to services and professional access to specialist expertise

- **Patient tools** and resources such as portals, which facilitate booking appointments online and access to records, information and advice.

1. Introduction

Primary care[1] is changing. New approaches to care delivery and organisational design are emerging in response to demographic changes, more complex patients and a range of policy and financial pressures, making the traditional model of general practice increasingly outdated.

Technology is playing a central role in supporting the development of new models, facilitating collaboration and integration across multiple care providers and settings; improving communication between patients and professionals; improving efficiency and empowering patients to manage their health and wellness more effectively. Yet there is potential for primary care to make much greater use of existing technology. There is also scope for further technology innovation.

The Nuffield Trust was commissioned by NHS England in summer 2015 to undertake a review of the primary care landscape and to consider what emerging trends mean for the digital requirements of the sector.

This briefing sets out the headline findings of that review[2], and highlights good practice for primary care clinicians and managers looking to improve their use of technology.

We reviewed the academic and grey literature, undertook six case studies and held two stakeholder workshops – the first with end-users of technology and technology suppliers and the second primarily with policy makers.[3]

We explore what is driving change in primary care, the major trends emerging in the sector and the technology underpinning these developments. We then use case study examples to illustrate how innovative models are being facilitated (and, in some cases, driven) by new technologies. Finally, we reflect upon the obstacles and enablers to realising this future at a local and national level, and suggest a range of actions to drive change forward, including the prioritisation of electronic health records, telehealth and patient portals.

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1   Primary care is defined as services that are managed by general practice or that have general practice at their heart (see NHS England, 2015a).

2   Access the full report here: www.nuffieldtrust.org.uk/documents/future-primary-care-new-models-and-digital-requirements

3   For more information on methods, read the full report: www.nuffieldtrust.org.uk/documents/future-primary-care-new-models-and-digital-requirements

2. Drivers of change, emerging trends in primary care and enabling digital technology

Drivers of change

The complexity of illness is changing the nature of primary care. The Department of Health estimates that, by 2018, there will be 2.9 million people with multiple long-term conditions (from 1.8 million in 2012), and their health and care will require £5 billion additional expenditure (Department of Health, 2012). There has been a 13% estimated rise in the number of consultations in general practice between 2008 and 2013 (HSCIC, 2009), and the rise in numbers of complex patients has meant that the number of test results dealt with by practices tripled between 2003 and 2013 (Primary Care Workforce Commission, 2015). GPs also report increasingly being passed follow-up responsibilities from specialists, and increasing roles in care navigation and coordination of care (Clay and Stern, 2015). Politicians have also expressed a desire for extended hours and seven-day access. These pressures have recently intensified: the numbers of GPs per 100,000 fell between 2006 and 2013, 8% of training places were unfilled in 2013/14 and more than 60% of GPs over 50 report that they are likely to leave direct patient care in the next five years (HSCIC, 2014; Gibson and others, 2015; Primary Care Workforce Commission, 2015). Funding for primary care has also seen a real-terms decrease since 2009/10 (Dayan and others, 2014), and currently only accounts for 8.5% of the health budget (Roland and Everington, 2016). As such, general practice finds itself in a particularly difficult situation: it is under pressure to deliver immediate acute access and extensive support for people with complex needs to a high standard – all for less money and with fewer staff.

Alongside these challenges, a complex policy environment has been playing its part in shaping the primary care landscape. GPs are not only providers of care, but also commissioners of services for their local populations. As providers, GPs are also being encouraged to work together to form large-scale organisations and consider new organisational and contractual models (Addicott, 2014; NHS England, 2015b). Central to all policy plans is the vision of general practice operating on a large scale, better connected with other services and providing a greater range of extended services than the traditional model.

Technology has been positioned as essential to updating the NHS. Full patient access to medical records, easy-access channels, and interoperability strategy and common data standards have been prioritised in the government's technology strategy.[4]

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4   See National Information Board workstream roadmaps; available at: www.gov.uk/government/publications/national-information-boards-workstream-roadmaps (last accessed 1 April 2016).

Emerging trends in primary care and the digital technology that enables it

We reviewed the academic and grey literature to identify:

- emerging trends in primary care

- the supporting technologies that will enable trends to continue.

The full results of these searches are reported elsewhere.

We found four fundamental/central trends:

1. **Integration and extended service scope:** There is a changing and growing demand in patients with acute needs, and those with complex comorbidities particularly require primary, community and secondary care services to work closely together. Local collaborations are arising that vertically and horizontally integrate services across provider settings to overcome fragmentation in the system and deliver person-centred care. Resource constraints are also driving the extended scope of general practice organisations, which move certain services and tasks out of secondary care and into cheaper primary care alternatives.

   The technology enablers of this trend are as follows:

   - **Shared electronic health records** provide patients' clinical information to all professionals along the patient pathway, supporting informational continuity and improving handovers. They also facilitate mobile access to clinical information for community teams, improving decision-making at the point of care.

   - **Professional-to-professional telehealth** in the form of real-time phone, video or web consultation is likely to improve integration across diverse teams and lead to more effective, joined-up care. It will enable GPs to seek specialist opinion during or shortly following a patient consultation – allowing a patient to benefit from a specialist consultation while maintaining an ongoing relationship with their GP. Similarly, store and forward technologies such as email will enable GPs to send test results or images to specialists, receiving specialist input on a case while maintaining ongoing management.

   - **Point-of-care testing** to enable efficient screening and diagnoses that would have historically required a hospital library.

2. **More proactive care and continuity for complexity:** Driven by the changing nature of patient illness and expectations around relational continuity with professionals, primary care providers are increasingly focusing on proactive care for their registered patient list. This is accompanied by targeted services and enhanced relational and informational continuity for patients with complex needs.

   The technology enablers of this trend are as follows:

   - Patient data held in **electronic health records** can be used to identify people at risk, enabling proactive group screening and early intervention using predictive analytics.

- **Remote monitoring devices** (for example, enabling ongoing monitoring of diabetes patients) can identify early signs of deterioration and enable proactive and preventative care.

3. **Increased access to care:** There is a strong policy focus on delivering 24/7 care in both general practice and community settings, which is leading to new ways of triaging patients (for example via online portals or decision trees) and communicating with patients (for example via email, video, telephone or web platforms).

The technology enablers of this trend are as follows:

- **Patient-to-professional telehealth** in the form of remote consultations via telephone, video and email offer opportunities for GPs to see more patients quickly – remote consultations are usually quicker than face-to-face visits.

- **Patient portals** (WebGP, for example) provide patients access to their records as well as information, advice and opportunities to self-triage – empowering patients to manage their own condition or access more appropriate services. Some patient portals also offer opportunities to book GP appointments online, thereby improving ease of access.

- **Remote monitoring devices** (see 'More proactive care and continuity for complexity' above).

4. **More consistent clinical decision-making:** There is long-standing variation in the quality of care provided within general practice. Decision-support tools are becoming increasingly important in reducing that variation. Relationships between primary care and hospital specialists to ensure GPs have improved access to specialist opinion will also play an important role.

The technology enablers of this trend are as follows:

- **Clinical decision support systems** are often embedded in electronic health records and provide clinicians with information to aid with diagnostic and treatment decisions. Simplistic systems may only provide national guidelines for single conditions, but more advanced systems provide tailored information (e.g. potential drug interactions) and allow multiple professionals to respond to tasks as they arise along the care pathway. This type of approach is used in advanced health care systems in the United States, such as Intermountain Healthcare.

- **Professional-to-professional telehealth** (see 'Integration and extended service scope' above).

The first four influential trends are facilitated by four supporting trends, including:

5. **Administrative efficiencies through scaled-up organisations:** Nearly all of the drivers for change in primary care suggest the need to operate at scale to benefit from shared resources, back-office efficiencies and greater flexibility. This is essential to deliver the care required for an ageing, multi-morbid population with limited resources. Scaled-up organisations with strong governance mechanisms also strengthen the capacity to develop the workforce and improve the quality of care delivered.

The technology enablers of this trend are as follows:

- **Shared human resource, finance and performance management systems** are particularly helpful for networks of providers and can reduce licencing and operating costs.

- **E-rostering** enables effective task management, allocation and handover, all of which are particularly useful when working across multiple sites or with mobile teams.

- **Call centres and online booking systems** will be important in effectively managing demand across scaled-up organisations and allowing patients access to alternative locations for more timely care.

6. **More diverse skill mix:** Driven by decreased numbers of GPs and increasing patient complexity, the skill mix within the primary care team is becoming more diverse in several ways. These include extended roles for nurses and support staff; input from a range of allied health professionals; the introduction of physician associates; and more dedicated sessional input from consultants.

The technology enablers of this trend are as follows:

- **Online care navigation tools** can ask patients or professionals a range of questions to determine the most appropriate service.

- Navigation tools are often linked to **large service directories** that enable patients to self-triage to local services.

- **Patient portals** will be useful for signposting patients to useful resources/services enabling self-triage (see 'Increased access to care' above).

The technology enablers for 'integration and extended service scope' and 'more consistent clinical decision-making' are also likely to be relevant to multi-disciplinary primary care teams, as are the enablers for 'improved education and training', which will be necessary to underpin the roll-out of new roles.

7. **Improved education and training:** Driven by a desire to decrease variation in quality, and more generally to improve the standard of care, there is an increased focus on sharing intelligence and skills across sites and between professions.

The technology enablers of this trend are as follows:

- **Webex and video conferencing technology** enable GPs to take part in group learning from remote locations.

- **Social media** is facilitating informal knowledge-sharing among professionals and the establishment of virtual communities of practice.

- **Mobile devices** allow rapid access to information (for example on medical conditions or medication doses), easier access to resources (for example textbooks, lectures, medical journals and apps), and enable quicker, more effective communication with colleagues including the exchange of clinical data or images related to patients.

- **Tools for simulation learning** have proved useful in secondary care settings.

8. **More patient empowerment:** Patients are playing increasingly major roles in managing their own care, and there is a move to engage patients along the entire pathway – starting with prevention (Foot, 2014). There is an assumption that engaging patients in their care will save money and reduce demand, although there is mixed evidence to support this (Purdey and Huntley, 2012).

The technology enablers of this trend are as follows:

- **Wearable devices** (e.g. Fitbits) and smartphone apps enable patients to manage their health and wellbeing. Apps are available for a range of things, including support for smoking cessation, exercise and healthy eating and managing long-term conditions. Wearable devices also encourage active lifestyles.

- **Online peer support networks** (e.g. Patients Like Me), which offer resources, advice and support for those living with illness, have the potential to enable patients to care for themselves more effectively and improve their quality of life.

- **Remote monitoring** can be used to empower patients to adjust their medication dose based on their readings, or send readings directly to a health care professional, who makes a decision on the required course of action (see 'More proactive care and continuity for complexity' above).

- **Patient portals** are likely to play an important role in patient empowerment (see 'Increased access' above).

All of this technology is available now, but very few primary care providers are using it. And no organisation is using all of this technology. In the next chapter, we explore organisations that are using technology to support new ways of working, including the challenges they have had to overcome to get there.

3. The future today: findings from six case studies

We developed six case studies to understand how emerging trends are playing out in practice, and how technology is being employed to support them. Table 3.1 sets out the main trend explored in each case; however, it should be noted that each case study covered more than one trend.

Table 3.1: Case study selection and illustrated trend		
Case study	Trend illustrated	Supporting technology
Modality	Increased access	Centralised booking and remote appointments
AT Medics	Improved education and training	Webex technology
West Wakefield	More diverse skill mix	Online care navigators
Better Together	Administrative efficiencies through scaled-up organisations	Online workforce profiling, shared records and mobile working
VitruCare	More patient empowerment (and co-creation of health care)	Online care management tool
South Somerset Symphony	Integration and extended service scope	Shared records and a patient portal

The case studies draw on interviews with one organisational leader per site and additional material supplied by the organisations to the project team.

Modality Partnership (formerly Vitality): Improving access to care through centralised booking and remote appointments

Context

Modality is a super-partnership that has been created through formal partnership mergers with local GPs in Birmingham and Sandwell. It was known as Vitality Partnership until September 2015. Since its origins in 2009, Modality has aimed to deliver general practice, specialist and community services 24/7 in an integrated way, similar to the integrated care organisation model in the United States.

Modality currently provides care for 75,000 patients, across 15 practices and one hub, but aims to grow its list size to over 100,000 in order to achieve a greater degree of scale. Growth and business development are being led by an executive team, a senior management team, and the 30 business owners (i.e. GP partners).

Drivers for change

When the senior management team undertook a workforce planning exercise in 2012, they realised that:

- GPs are the most expensive resource in general practice settings, and the most in-demand – this would need to change in order to create a sustainable business model

- Less than 1% of the practices' interactions with patients were conducted using the internet, which did not match other sectors in the public services industry.

As a result, various technologies were implemented in September 2014.

Technology in use

The following technologies are being used to improve access:

- A single IT system and shared records for all member practices

- A hub that triages patient access based on urgency. It is staffed by former NHS 111 receptionists, who either signpost patients to online self-care resources (including videos) or organise a contact with a nurse practitioner or a GP, ideally within the hour. The hub can be reached by telephone, using an online app or through the website

- Remote consultations via telephone or Skype

- Proactive and personalised online and in-person care for people with chronic health conditions through better use of EMIS-linked care management plans.

Modality also has ambitious plans to engage patients with chronic needs in self-management by providing mobile access to their electronic medical records, an online care planning tool, a personal health record, telehealth and instant messaging with clinicians. Health professionals will also be able to communicate using the instant-messaging functions via the app and website.

Impact

On average, there are 700 calls per day to the remote hub (this figure can rise to 1,300 on peak days) and calls are answered within an average of 40 seconds. This is a significant reduction from the previous average wait time of 6.5 minutes.

Within one month of implementation of the hub, fewer people were presenting at practices, and now around 65% of all health concerns are dealt with remotely. Average remote consultation times have been reduced to five minutes. This has completely transformed in-day services. Activity has increased by 10%, enabling the organisation to meet previously unmet needs within existing resources.

There has also been a 72% reduction in 'Do Not Attends' (DNAs) in practice. This equates to an annualised cost saving of approximately £210,000 across the whole business.

Lastly, 70% of patients say that the new access system is better than before.

Modality hopes that more online access channels will alleviate workforce challenges, allowing the largely part-time GP workforce to flexibly offer consultations from home or at other practice sites.

Key enablers

Scale: An organisational development programme led by external management consultants led to coordinated, at-scale working across the entire organisation. A senior management team was introduced to develop a strategic plan and hold accountability across a range of functions.

Clinical leadership: Business managers argue that the success of implementing proactive and personalised online and in-person care for people with chronic health conditions was down to clinical leadership knowing which conditions to target for online services. Senior clinician engagement from the outset was also important, as was training junior staff.

Funding: Modality needed £5 million to develop digital solutions, which was not available in-house or through the NHS at the time. It initially looked to the private equity market to find an investor in 2013, and met with a local like-minded technology company, Digital Life Sciences. When Prime Minister's Challenge Fund (PMCF) monies became available, Modality bid for £5 million, but only received £1 million. This did not provide enough funding to fully develop the app, or roll out services beyond the five largest practices, which left Modality looking for other funding options.

Funding from the Vanguard programme will see Modality become a multi-specialty community provider (MCP) with responsibility for a capitated budget around a growing patient list. The funding will be used to maintain 8am–8pm Monday to Friday opening hours at a single hub, repatriate out-of-hours services, contract in community providers, and expand the digital capabilities that the PMCF funds fell short of.

Key barriers

Lack of funding: While Modality has received several rounds of funding, it does not feel it is sufficient to fulfil its digital ambitions. For example, it would like to make better use of social media to advertise online access, but lacks the marketing budget to do so.

Commissioning obstacles: There is a general sense among senior leaders that local commissioners were not ready to move at the same pace as Modality and did not have the funds to support them. This has resulted in Modality driving its own innovation in care and technology.

In the future, Modality predicts that there will be interoperability issues when trying to bring together primary care, mental health and community care.

Other points of note

Weekend access to the remote and physical hubs were trialled in January 2015, but very quickly reverted back to 8am–8pm, five days per week when demand was too low.

Modality at a glance	
Technology employed to improve access	• Telephone and video consultations • Resources for self-care • Centralised telephone triage (with online functionality in development)
Enablers	• Scale • Clinical leadership • Funding
Barriers	• Lack of funding • Commissioning obstacles

AT Medics: Using Webex technology to support remote education and training

Context

Established in 2003, AT Medics is a limited company operating 24 practices across south, east and west London. It also operates a walk-in centre, a minor injuries unit and two urgent care centres. Its practices span 12 clinical commissioning groups (CCGs) and serve over 130,000 patients. The majority of AT Medics' practices are in areas of high deprivation.

The organisation was established, and is run, by six directors who each take responsibility for the performance and management of a number of practices. Senior managers undertake the day-to-day management of groups of practices, although the directors are very visible. The leadership has remained unchanged over the intervening 12 years, although they appointed a new chief executive in September 2015.

Drivers for change

Since its inception, AT Medics has been committed to teaching. Several of the directors had prior experience of teaching and were determined to embed learning and education in the organisation from an early stage. As the organisation has developed, its training and education offer has grown.

Originally, AT Medics' directors were delivering their suite of training packages in person, travelling between practices to deliver the same session multiple times. This was time-consuming and resource-intensive. Since 2012, they have begun to use technology to deliver the majority of their training and education virtually and this has transformed not just how they deliver sessions but also the type and extent of courses they can offer.

Technology in use

Although some training is still delivered in person (e.g. weekly practice-based clinical

meetings), the majority of programmes are now delivered virtually using a range of different software. The main technology being deployed to deliver the training programme is Webex. How and when staff undertake training is largely left to each practice to decide, but some training is run across all practices.

Examples of training delivered virtually include the following:

- **Consultant-led webinars using Webex technology** are offered every two weeks to all 12 postgraduate training sites on topics that staff nominate. The sessions last 30–40 minutes and include case-based discussions.

- **Out-of-hospital care training** is currently being rolled out in their West London practices. AT Medics requires all doctors and nurses to undertake training in delivering community-based care (such as ECG interpretation and enhanced diabetes management). This is delivered via a pre-recorded video.

- **Interactive junior doctor sessions:** in addition to their weekly tutorials, junior doctors receive monthly web-based masterclasses run by the directors. They include a range of skills, including leadership, quality improvement, integrated care and finance and business management – subjects that are not usually taught to GP trainees.

- **Triage training for receptionists:** A video, involving role play, is being developed to train receptionists in the organisation's triage protocols in order to direct patients to the most appropriate source of care.

In addition to formal sessions, senior staff often use the available technology to offer one-off workshops. For example, following a Care Quality Commission (CQC) visit to a practice, the practice manager organised a Webex meeting with other practice managers to share their experiences and learning.

AT Medics has various plans to develop and extend its training offer through technology. The organisation is exploring the use of Moodle (an open source learning platform) and would like to develop an online resource library.

Impact

AT Medics does not formally measure the impact of its training programmes, although it does maintain that its commitment to education is reflected in performance against measures such as retention rates of clinical and administrative staff, clinical outcomes and patient satisfaction scores. They report that they are not struggling to recruit – something that other GP providers are finding particularly challenging. An advantage of developing staff in-house is that many have been trained in the systems and are familiar with the culture of the organisation. The organisation has achieved an 'Investors in People' award.

By using technology, AT Medics is able to extend its training offer across more people than would be possible through traditional methods. Its roll-out of out-of-hospital services in West London has enabled the organisation to offer an extended range of services and, because all staff undertake this training, there is no reliance on a single individual or small group of individuals running the service.

Commitment to training administrative staff has created good career progression opportunities. There are numerous examples of staff joining as receptionists and

moving up through the organisation to become senior managers. There are also examples of staff starting out in an administrative role and being trained to become health care assistants.

Key enablers

Lean management structure: The organisation's relatively lean management structure means that it is nimble in its decision-making and in piloting new approaches. Delivering training over the internet is necessarily different to in-person teaching. AT Medics has taken a systematic approach to developing its programmes, drawing on evidence and literature about appropriate methods, piloting and adapting as the approach evolves.

Strong and stable leadership: Directors are very visible across all levels of the organisation and staff are able to directly contact them with their ideas or concerns. The leadership has remained unchanged for 12 years.

New technology: Webex technology provided the organisation with a new option for training. AT Medics adopted the technology around three years ago, choosing it over other options because of its N3 network[5] capabilities to enable data sharing (e.g. patient records during clinical training sessions). This approach has enabled the organisation to efficiently deliver the same training sessions across multiple sites and to engender a feeling of connectedness between practices.

Key barriers

Lack of interoperability: AT Medics has taken over practices across a wide geography and it has historically used a range of operating systems. Because of contractual arrangements with providers, it has not always been possible or sensible to move all new practices onto a single system. Despite being a relatively large GP organisation, AT Medics feels it lacks negotiating power with large operating system providers.

Commissioning obstacles: Working across multiple CCGs has presented particular challenges. AT Medics is keen to set up a telephony hub to carry out clinical triage at scale. The vision is for doctors and nurses delivering episodic care across practices by phone, email and Skype in order ensure flexible, agile health care that matches resources with need. However, having failed to secure PMCF support, AT Medics has encountered reluctance from CCGs to allow data to be shared across boundaries. As AT Medics' practices are dispersed across 12 CCGs, this is a major impediment to establishing such a service.

Unstable funding flows: In order to illustrate this point, AT Medics gave an example of the use of text messaging. Government funding was provided to establish the service but then subsequently withdrawn, which has resulted in those costs being shifted to the providers.

Other points of note

As well as continuing to develop its online training and education offer, AT Medics is committed to developing a range of other technology-based solutions. It has already developed a patient-facing application called 'Message my GP' and has developed online self-help pathways. It offers Skype consultations in some practices and is

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5   N3 is the private wide-area network for the UK NHS in England and Scotland.

exploring with a partner company the potential of a live chat function with doctors.

In addition, to assist development of its quality monitoring, AT Medics is working with the University of Surrey to develop a performance dashboard. This will make clinical and financial metrics readily available to enable quick decision-making. Currently, monitoring of such metrics is done manually and is laborious. Directors at AT Medics believe that such a development with assist in any future expansion since it will be able to monitor all practices remotely.

AT Medics at a glance	
Technology employed to improve education and training	• Webex technology
Enablers	• Lean management structure • New technology • Strong and stable leadership
Barriers	• Lack of interoperability • Commissioning obstacles • Unstable funding flows

West Wakefield: Using online care navigators to support skill mix change

Context

West Wakefield Health and Wellbeing Limited is a GP federation consisting of six GP practices that have been working together as a commissioning network. The practices work collaboratively through joint initiatives and a shared purpose to deliver care for approximately 65,000 people. The programme is led by Dr Chris Jones, a partner at one of the participating practices, and is supported by local stakeholders such as NHS Wakefield Clinical Commissioning Group, Wakefield Council, Healthwatch Wakefield and other local health and care providers.

As part of the Vanguard programme, West Wakefield Health and Wellbeing intends to join two other commissioning networks to become a multi-specialty community provider responsible for 152,000 people. Work under the Vanguard programme started in October 2015 with the delivery of the awarded funding, and is not included here.

Drivers for change

The population in Wakefield is ageing, mirroring the national picture. By 2031, the proportion of the population that is over 65 in Wakefield is expected to grow by 50%. In addition, Wakefield's population has particular problems with life-limiting long-term conditions such as chronic obstructive pulmonary disease (COPD), a high prevalence of mental health problems and a significant problem with obesity. In response to these issues and financial pressures, West Wakefield Health and Wellbeing set out to improve access to primary care; improve coordination and integration with other services; and increase technology use and support for self-management.

Technology in use

Improving access to primary care has been approached in a number of ways. Patients have the option of seeing an alternative to a GP through the 'Physio First' and 'Pharmacy First' schemes, supported by care navigators operating in each surgery and digital navigation resources available online. A care navigation app provides a logical decision tree, helping patients find the most appropriate care. It signposts patients to information and resources as well as alternative services such as physiotherapy, pharmacy and mental health, before eventually offering a GP appointment if appropriate. The service also offers extended opening hours (delivered through a central hub) and is developing video consultations using Skype for Business and an e-messaging service through SystmOne.

There are also a number of initiatives in place to support self-care. The programme has developed a large service directory that draws from multiple databases as well as social media such as Facebook and Meetup to inform patients of all services available in the local area. Leaders hope that signposting to alternative services will reduce demand for GP appointments. Similarly, the West Wakefield Health and Wellbeing website hosts a library of apps to support prevention and self-care – such as support for exercise, healthy eating and smoking cessation. The apps in the library are available through NHS Choices.

The programme has also taken an innovative approach to prevention: The 'Schools App Challenge' is a competition launched by West Wakefield Health and Wellbeing for schoolchildren to design an app to promote health and wellbeing. The rationale is that new ways of engaging young people in the health agenda are needed to prevent the development of unhealthy lifestyle habits that can last a lifetime.

These initiatives are taking place across all six participating GP practices, supported by shared electronic health records through SystmOne's shared admin capability. This has been facilitated by an information sharing agreement across the sites. Each practice has the chance to opt staff members in and out – determining whether members of staff have access to data. There are also plans to share records between the GP practices, local care homes, community teams and other health providers, although this is not happening at present.

Other initiatives within the programme that do not concern digital technology include social prescribing and a mobile health and wellbeing clinic called 'HealthPod' that enters the community to target hard-to-reach populations.

Impact

Directing patients to alternative services through the 'Physio First' and 'Pharmacy First' schemes has yielded positive results. Patient referrals have increased, and between December 2014 and May 2015, 1,124 appointments with the physiotherapist were attended (a monthly average of around 190 appointments compared with the baseline of 132 appointments that were attended). Care navigators are estimated to have helped save approximately 66 GP hours per month, and the digital care navigator is also likely to have contributed to this increase. Navigation to third-sector providers has increased and use of the app library and service directory has been growing. However, the uptake of video and e-mail consultations has been limited. Clinicians have had difficulty integrating video consultations into their daily work and the group is still trying to identify the most appropriate place for this technology.

Other successes include increased out-of-hours care – saving approximately 219 hours of surgery face-to-face time and approximately 79 hours of telephone consultations.

The pilot has not led to a reduction in A&E attendances or improvements in patient satisfaction. In addition, a staff survey showed a reduction in staff satisfaction after implementing the programme – although the sample size was small.

Key enablers

Funding: The organisation was given £1.4 million from the PMCF and reported a spend of almost £800,000 up to the end of March 2015. Of this, the pilot has spent almost £140,000 to support extended access services, with a further £430,000 on enabling activities such as IT, project management and training. Of these enabling activities, programme management costs £360,000.

Good governance and leadership mechanisms: A strategic-level programme board, a patient panel and a project delivery team have helped to ensure staff buy-in and the smooth running of the programme. Ensuring the right leaders are in place is essential for driving the work forward. Leaders also noted that providing coaching and mentoring for the team can aid staff buy-in.

Engaging key stakeholders: Good communication (as well as the strategic-level programme board) has ensured collaboration and cooperation with local stakeholders – including communication between the senior clinical team and the CCG. Leaders found this to be crucial to the pilot's success, although it requires a considerable time investment.

Flexibility regarding the use of resources: The pilot used resources to free up time for clinical leaders to focus on strategic objectives rather than clinical care. The organisation also maintained a realistic ambition for the initiative in light of limited resources and dependence on high levels of staff commitment.

Key barriers

Resources required: A pilot evaluation found that significant additional time was required by practice staff and the initiative relied on dedication from both managers and practitioners. Local evaluation requirements were also found to be extensive, and employees underestimated the time involved to carry out systematic, reliable and in-depth evaluation activities. The programme intends to employ an analyst to address this challenge in the future. The evaluation also uncovered concerns about sustainability, particularly in relation to ongoing clinical capacity for extended opening hours.

Limited video consultation uptake: A testing session with doctors and patients was very successful, but in practice actual use of video technology has been poor. West Wakefield Health and Wellbeing is exploring options for overcoming cultural barriers and finding the correct niche application for video consultation, given that it appears to be too early for it to be used more widely. One organisational leader expects greater use of this technology between professionals to improve acceptance, which will ease its transition to more routine use in patient care.

Lack of interoperability: Interoperability is a particular problem for the Vanguard initiative. A leader identified the need for multiple users to have full access (as opposed to read-only access) to multiple systems. At present, it is very difficult to share information across different systems, although the leader noted that much of this can

be achieved by changing working practices and culture to create a proactive, patient-centric model of care.

Other points of note

West Wakefield Health and Wellbeing has just been awarded Vanguard status and has received funding to become a multi-specialty community provider. The Vanguard programme will build on work already undertaken through the PMCF, in partnership with two other commissioning networks. Central to the Vanguard bid is integration with a central hub – a base for community services staff, community consultants such as cardiologists as well as social workers, mental health workers, therapy teams and others. Records will be shared between these staff and with the GP practices. Professional-to-professional telehealth will enable two-way communication between and across the community teams and GPs. An information centre will also be housed at the hub that will display real-time data including A&E admissions and clinical data from monitoring equipment in homes, in order to facilitate a shift to more proactive care.

Other initiatives planned under the Vanguard programme include a citizen-held patient record and an online chat function for patients to connect with people navigating the care system (as another easy point of access).

West Wakefield at a glance	
Technology employed to support skill mix change	• Digital care navigators
Enablers	• Funding • Good governance and leadership mechanism • Engaging key stakeholders • Flexibility
Barriers	• Resource requirements • Limited video consultation uptake • Lack of interoperability

Better Together – Mid-Nottinghamshire Integrated Care Transformation Programme: Realising efficiencies through online workforce profiling, shared records and mobile working

Context

Better Together is an Integrated Care Transformation Programme created to develop a joined-up way of working for health and social care in Mansfield, Ashfield, Newark and Sherwood. It is a collaboration between Mansfield and Ashfield CCG; Newark and Sherwood CCG; Nottinghamshire County Council; and all NHS health providers and voluntary sector partners in the districts.

The programme started in 2013 and has since implemented projects in three main care areas: urgent and proactive care; elective care; and women and children's services. At its inception, it set some specific goals for using technology to improve workforce management efficiencies (Better Together, 2013), namely:

- Allocating tasks via email or system generated notifications to community staff and social care workers

- Identifying health care providers that are geographically closest to a patient. The system will be used to manage and track travel expenses incurred from visiting patients

- Using portal technologies to assess the type of patient care required and to create an initial care plan

- Using workforce planning and finance systems for demand data.

Drivers for change

The programme's plans for change were driven by financial and sustainability concerns (Better Together, 2013). Financial mapping revealed a significant gap (of around £70–£140 million) if services continued to be provided in the same way in the next few years. At the same time, the changing population health profile and pressure on hospital services underlined the need for new models to support care in the community.

Technology in use

An overarching priority for the Better Together programme is using technology to the best possible effect. Working with Health Education East Midlands, Better Together has developed a dynamic systems modelling tool that looks at workforce supply alongside future demand. This is intended to help the organisation plan its workforce for the future, with a particular focus on providing care for patients in the community.

A number of the programme's technological innovations have been developed to improve interoperability and coordinated care. First, Better Together is working with SystmOne software developers TPP to improve SystmOne's capacity to share information across practice and community settings within the programme (e.g. automatic pushing of tasks and electronic messages across the system).

Second, the Medical Interoperability Gateway (MIG), which was implemented in 2015, allows emergency and out-of-hours providers within the locality to securely view GP records, which they cannot access via SystmOne.

Third, the programme plans to implement a system to enable smooth task handovers across multiple providers. The system will also allow providers to alert others of the completion of the task or to reassign the task back to other providers if necessary.

Finally, any new applications (such as MIG) are embedded in existing systems, which means that the treating clinicians only have to enter or review the information once, rather than multiple times across different systems.

Other technology being used which does not specifically relate to efficiencies in workforce management includes telehealth and mobile working (e.g. community teams using a range of mobile devices 'in the field').

Impact

Performance against system-wide objectives is monitored by the programme on a monthly basis, based on key performance indicators such as secondary care referrals, primary care referrals to secondary care, A&E attendances and the number of acute bed days. There has been a decreasing trend since the original pre-programme diagnosis across all of these indicators.

There is also some evidence that admissions of high-risk patients have decreased because they are being maintained at home through a range of out-of-hospital interventions.

Key enablers

Funding: In 2015, the Better Together programme received £3.98 million from NHS England's New Models of Care programme. This funding aimed to stimulate the programme's goals as an integrated primary and acute care system (PACS) Vanguard, accelerating service integration for improved out-of-hospital care (Better Together, 2015).

Systems for coordinated working: The organisations involved in the programme have already undertaken a 're-commissioning' programme for establishing a single-contract accountable provider alliance, in order to encourage providers to work together.

The programme is also exploring how to develop a new way of working through a partnership or alliance of providers and commissioners. A Commissioning Delivery Unit has been set up, which is working to discover ways of buying services in a more joined-up way.

Key barriers

Culture change: This model requires an entirely new way of working across professional boundaries and settings. Ensuring staff engagement from the outset alongside appropriate capacity for change is essential.

Information sharing: Information access agreements between organisations has to be obtained to ensure the appropriate handling and governance of sensitive information across organisational boundaries.

Other points of note

Funding from the Vanguard programme is being used to accelerate change within the programme. Some parts of the programme have been implemented, while others are still in development.

The Better Together Vanguard is strongly predicated on horizontal integration across health and social care services. In the future, GPs will have to work differently and resources will have to be reallocated to the best performing areas.

Better Together at a glance	
Technology employed to support efficiencies and workforce management	• Workforce tools (e.g. for profiling of current workforce supply and future demand) • Shared electronic health records (via Medical Interoperability Gateway) • Mobile working (e.g. community teams using iPads in the field)
Enablers	• Funding • Systems for coordinated working
Barriers	• Culture change • Information sharing

VitruCare: Patient empowerment and remote monitoring through an online care management tool

Context

VitruCare is an online care planning and digital services delivery platform for patients. It is prescribed by a GP and can be used on any device with an internet connection. With the continued support of the GP, patients can make decisions using data from their electronic health record to change their lifestyle and improve their overall health.

VitruCare connects patients to their health care team, who closely monitor patients' progress and intervene proactively with support and mentorship when required. It is currently operating in about 30 practices, covering a patient population of around 350,000 across the country.

Drivers for change

The VitruCare service was originally driven by a review of how services were provided to patients with diabetes in the Yorkshire and Humber region. It was first piloted in a general practice in Bradford and was subsequently implemented in other general practices in the region.

A pilot of the approach was initially carried out using paper care plans. The development of the digital platform was driven by the recognition that the 'traditional' way of working was not delivering the necessary clinical outcomes for patients and that it was an unsustainable approach to service delivery. At the same time, patient engagement presented a high-potential alternative for the future of health care interaction.

Technology in use

VitruCare is a tailored online care management tool. It was initially developed with a view to improving care for patients with long-term health conditions, by supporting them in self-managing their condition (Dynamic Health Systems, 2015).

Development of VitruCare commenced in 2010 as an initiative for exploring patient activation and engagement through care planning or (in other words) the 'co-creation of health care'. The key aims were supporting doctors to work more efficiently by enabling new ways of working with patients, and empowering patients to be more autonomous in managing their health and care (thereby releasing capacity for meeting additional demand).

Patients log in to VitruCare from home to enter their readings (e.g. weight, if weight loss is a goal). The system is integrated with Bluetooth-enabled devices such as weighing scales and blood pressure measurement tools, which provide easy ways for patients to enter their data directly. These data are accessible by their GP when he or she logs in to the system. The GP then decides which data to add to the clinical system records. The GP is also able to directly access his or her patients' action plans, assess their goals and monitor progress against these. At the same time, the GP can gather practice-wide data and create commissioning intelligence relating to the quality outcomes framework (QOF), which are recorded during the development of the patient's self-care plan.

Patients can send secure messages through VitruCare to their clinicians and link with other patients using a social media tool. In the future, the service will also make telemedicine consultations available and ensure integration with other clinical systems. VitruCare will also be linked with SystmOne through a partnership with the IT company TPP, allowing the patient to use clinical data directly from the electronic health record.

VitruCare also enables patients to link with other types of care support. Each patient has an 'extended care team' made up of professionals from various organisations, which the patient selects. The patient then 'directs' the extended care team via secure messaging – directly raising tasks or providing a quick daily report on symptoms, pain, etc. A workflow mechanism ensures each task is followed up (Dynamic Health Systems, 2015).

The transformative potential of the service is in the way patients interact with their carers, as well as the opportunity for professionals to manage their work with patients more effectively. By monitoring a patient's VitruCare profile, primary or secondary care professionals are able to see the patient is controlled in their long-term condition goals, send them a message to inform them of this and avoid an unnecessary consultation.

Impact

Initial data on health service usage one year before and after care planning showed a reduction in health care contacts, on outpatient visits, on A&E attendances and on acute admissions after care planning (Ali and others, 2011).

A pilot study of 19 patients found VitruCare reduced the total number of health care contacts from 529 to 246 over a 12-month period. As a result, associated costs were reduced from £47,346 to £17,860 (Ali and others, 2011).

A second, more recent analysis with a larger sample size showed health care contacts declined by 53%, with 71% fewer A&E attendances and 83% fewer acute admissions after patients adopted care planning. Total costs were also reduced from £97,534 to £42,752, in comparison to the year before care planning was introduced (Ali and others, 2011). These results can be attributed to patients working with their GP on

solving problems as they arise; GP awareness of what happens between visits; and GP support for patients being in control of their care.

These initial results have been replicated across other practices using VitruCare. New results from a cohort of around 150 patients using the tool will soon be published showing improvements in blood pressure, weight and diabetic control, as well as reductions in A&E attendances and acute admissions for patients with long-term conditions.

Key enablers

Patient engagement in design: The design of VitruCare was informed by patients, who made choices about how they would like information to be presented, the kind of information and content that should be available, and the type of communication functionalities (e.g. booking appointments, ordering repeat prescriptions, seeing their medical records, sending secure messages and accessing social media).

Patient interest in the tool: An initial analysis study showed that 69% of surveyed patients (n=50) were willing to use VitruCare for their care planning needs. The need for internet access did not deter the majority of patients, including the elderly.

Collaboration: The digital service was developed jointly with other experts who were trying to implement similar solutions from a technological perspective, thereby linking up the care and the technology components.

At-scale use: Once VitruCare was functional and being used by patients within the pilot practice it was presented to the local CCG. The CCG decided to commission VitruCare for use in 15 practices (covering a population of around 160,000). As soon as practices started using VitruCare, practices in other regions began showing an interest as well.

Key barriers

Commissioning obstacles: Getting VitruCare commissioned in the first instance was difficult due to the innovative nature of the service and the initial lack of evidence of its impact. However, the pilot implementation generated some data on outcomes, which helped make the case for care planning through this service.

Provider scepticism: Like commissioners, some providers were initially sceptical about the tool due to the lack of evidence regarding its effectiveness in the early stages. Professionals were often reluctant to move to a digitally enabled system because of concerns over disruption to their established processes. Developers realised they needed to carry out pre-deployment work to gain professional buy-in, demonstrating patient interest in the approach. Training for digital services was also needed to engage staff.

Technical difficulties: There were initial technical difficulties with the tool due to its complexity. The service has been iteratively developed and has seen several improvements since its outset.

Other points of note

The number of patients using VitruCare in the Bradford area is increasing. Plans for the near future include expanding the service to a patient population of 1.5–1.6 million, and deploying the service in Cumbria.

VitruCare is also seeing a rise in the number of specialist applications, and it may extend to specialist units in the future. It will also include an option for video consultation within the digital services available, and it will allow the automatic upload of data from patient devices on to the online platform.

VitruCare at a glance	
Technology employed to support patient empowerment	• Patient portal (for care planning and management)
Enablers	• Patient engagement in design
	• Patient interest in the tool
	• Collaboration
	• At-scale use
Barriers	• Commissioning obstacles
	• Provider scepticism
	• Technical difficulties

South Somerset Symphony: Integration and coordination of care through shared records and a patient portal

Context

South Somerset Symphony is led by Yeovil District Hospital NHS Foundation Trust and South Somerset Health Care GP Federation. These organisations have come together to deliver an integrated primary and acute care system (PACS), as set out in the Five Year Forward View. The programme aims to create an integrated accountable care organisation in order to develop new integrated models to improve health and wellbeing and patient satisfaction, and to ensure the local health and social care system is sustainable in the longer term.

The programme is a joint venture, which means that partners in the two organisations will become partners in a single organisation, with a shared infrastructure and a single budget. Three integrated care hubs will provide care co-ordination, senior medical input and a single personalised care plan to help patients manage their condition.

Two new models of integrated care are being developed:

- Symphony/Extensivist Complex Care Hubs – providing patient-centred, holistic coordinated care. This hub includes multidisciplinary teams of GP 'extensivists' (who provide senior medical input), key workers (not necessarily clinical, but with good relationship-building skills for organising all necessary care facilities for the patients), and care coordinators (senior nurses whose role is to agree a single care plan for the professional team in the hub as well as others involved with the patient).

- Enhanced Primary Care – providing proactive chronic condition management. New roles will include key workers such as 'health coaches', who will be based in

the practice and will support people with less complex conditions to manage their condition, liaising with social care and the voluntary sector. Through this and other new roles, GPs will be able to focus their time on the patients who need it most, and move to a more proactive approach. Five of the 20 practices in the programme have started implementing this model so far.

Each practice has a fixed number of patients who can be triaged to the hub. The GP selects the patients they think will benefit most from the approach. Patients must also agree to be contacted by the hub (there is a 10% refusal rate). Once they give consent to be part of the service, patients and their carers are supported to develop a co-designed, participative care plan that will guide their treatment. Patients can identify what they want to achieve and the plan brings together arrangements for any care and support already being accessed (Yeovil Hospital Healthcare, 2016). Each patient is attributed a key worker who becomes his or her key contact and who is responsible for the agreement of a single care plan and aspects of care coordination.

Drivers for change

At the inception of the Symphony Project in 2013, organisations were faced with an ageing population, and a growing number of patients with multiple comorbidities. At the same time, there were pressing financial constraints across the NHS (Yeovil District Hospital NHS Foundation Trust, 2014).

An initial economic analysis of patient data spanning primary, community, acute, mental health and social care in the region revealed that multi-morbidity was the greatest driver of costs and that the more co-morbidities a person has, the more likely they are to require care across diverse settings, at higher cost (Kasteridis and others, 2014). The analysis also showed that 4% of the population account for 50% of local health and social care expenditure (Yeovil Hospital Healthcare, 2016).

Based on these conclusions, the project set out to develop models of care more suited to meeting the needs of complex, multi-morbid patients, through integrated health and social care teams and personalised care planning.

Technology in use

Patients enrolled in the integrated care hub have access to the 'Patients Know Best' web platform (Patients Know Best, 2015). The patient can log in and find their care plan and a care escalation plan. Other features of the platform include messaging and Skype services for contacting the integrated care hub team, an online library of approved information about the patient's condition, lab results with alerts, and, increasingly, telehealth. (About 80 patients are now enrolled in the hub, 20 of whom are already using telehealth for monitoring their conditions.)

The hub is in the process of buying the EMIS Patient Access system in order to enable a single view of clinical activity between the hub and practices. The 'Clinical Services' module will allow the hub to have its own database, linked to practices' databases. This link will then allow providers on both ends to see a single patient record as well as who has undertaken particular tasks.

Impact

Preliminary outcomes based on small numbers of patients (58 patients in the hub, for two months) show a reduction in the number of admissions, A&E attendances and length of stay.

Leaders hope that patients will see improvements in the way professionals work together to meet their needs, with less duplication, fewer delays, more proactive care and fewer unnecessary admissions.

Key enablers

Good communication strategy: The Symphony programme has a communication and member practice engagement strategy that involves the Programme Board visiting practices delivering services as part of the Symphony programme, as well as giving presentations to the organisations involved, writing blogs, and sending a regular newsletter (Yeovil Hospital Healthcare, 2016).

Key barriers

Establishing effective working arrangements across the sites: One of the main challenges so far has been working out the relationship between the hub and the practices, as well as the responsibilities for particular aspects of patient care. The organisation has also experienced challenges sharing information across sites and ensuring effective communication between the hub and the practices.

Other points of note

The programme is beginning to expand telehealth functionalities through video consultations (Skype) and integration with the Patients Know Best platform. It is also developing back-office information to support patient stratification. Through a partnership, the programme will also develop a set of apps integrated with Patients Know Best, which will allow the patient to feed information directly from the app to the platform.

Vanguard funding (£4.8 million) is currently supporting the Symphony change programme, but savings will have to be made in order to ensure the programme's sustainability in the medium term.

South Somerset Symphony at a glance	
Technology employed to support integration	• Patients Know Best platform/portal between the patient and the hub • Shared records between the practices and the hub
Enablers	• Good communication strategy
Barriers	• Establishing effective working arrangements across the sites

# 4. What does this mean for the future of primary care?

"The paradox of the future health system is that we will have much more primary care, and primary care will be more important than ever, but it will be supplied predominantly by patients and non-physicians, with back up from specialized primary care providers who are master diagnosticians and clinical decision makers, powered by health information and organizational supports"

David Blumenthal, Medical Professionalism in the New Information Age (Rothman and Blumenthal, 2010)

Taken together, the trends in primary care, enabling technologies and examples of pioneer organisations paint a possible picture of what the future of primary care could look like:

- **Primary care practices will be part of scaled-up organisations** taking responsibility for local populations.

- **There will be permeable boundaries between primary, secondary and community care** supported by shared electronic health records and data, professional-to-professional telehealth and improvements in back-end technology such as e-rostering and finance systems.

- **The professional make-up of primary care teams will be more diverse. GPs will act as a consultant and expert** for the rest of the team, with ready access to the expertise of secondary care colleagues.

- **Patient access will be improved, supported by remote consultations**, mobile working, sign-posting to other services and alternatives to GPs within the primary care team.

- Primary care will take a **population-based and more proactive approach, as well as providing increased continuity** for patients with complex needs using shared data and electronic health records.

- **Patients will be more empowered**, supported by patient portals, peer support services and improved access to information and resources.

- There will be **improvements in quality of care** supported by computerised clinical decision support systems (CDSSs) and an increased emphasis on ongoing professional development and education supported by virtual communities of practice and online knowledge-sharing platforms.

Figure 4.1 shows how primary care is changing and the associated enabling technologies.

Figure 4.1: Changes in primary care (inner circle) and enabling technologies (outer circle)
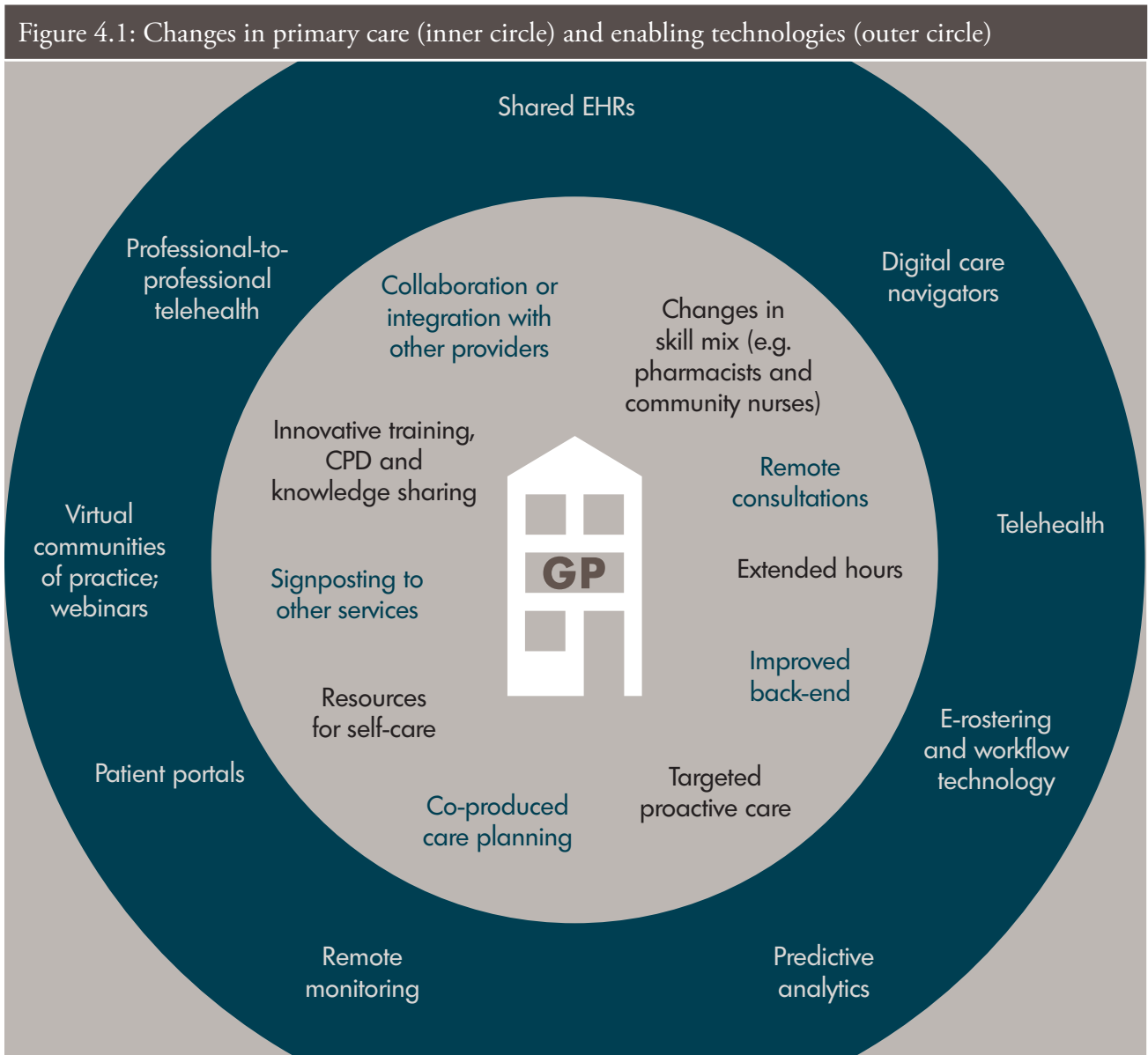
The way in which primary care interacts with the rest of the health care system constitutes one of the biggest changes to service delivery. Increasingly, tasks and responsibilities are shifting from secondary care to primary care. A recent report set out the difficulties at the primary and secondary care interface (Clay and Stern, 2015). These difficulties include a lack of sufficient communication between the two sectors; complexities in GPs booking appointments for patients in secondary care and ensuing problems when patients do not attend; and issues around discharge letters including unclear information and inappropriate referral of burdensome follow-up care (Clay and Stern, 2015). Much of this could be addressed through shared IT systems and access to data along an entire care pathway supported through sound policies on interoperability and information governance. Joint care planning, budgets and commissioning would also enhance integration, as would multi-disciplinary teams that work across sector boundaries. Figure 4.2 sets out factors to enable integration and collaboration across the system.

Figure 4.2: Supporting integration and collaboration across the health care system
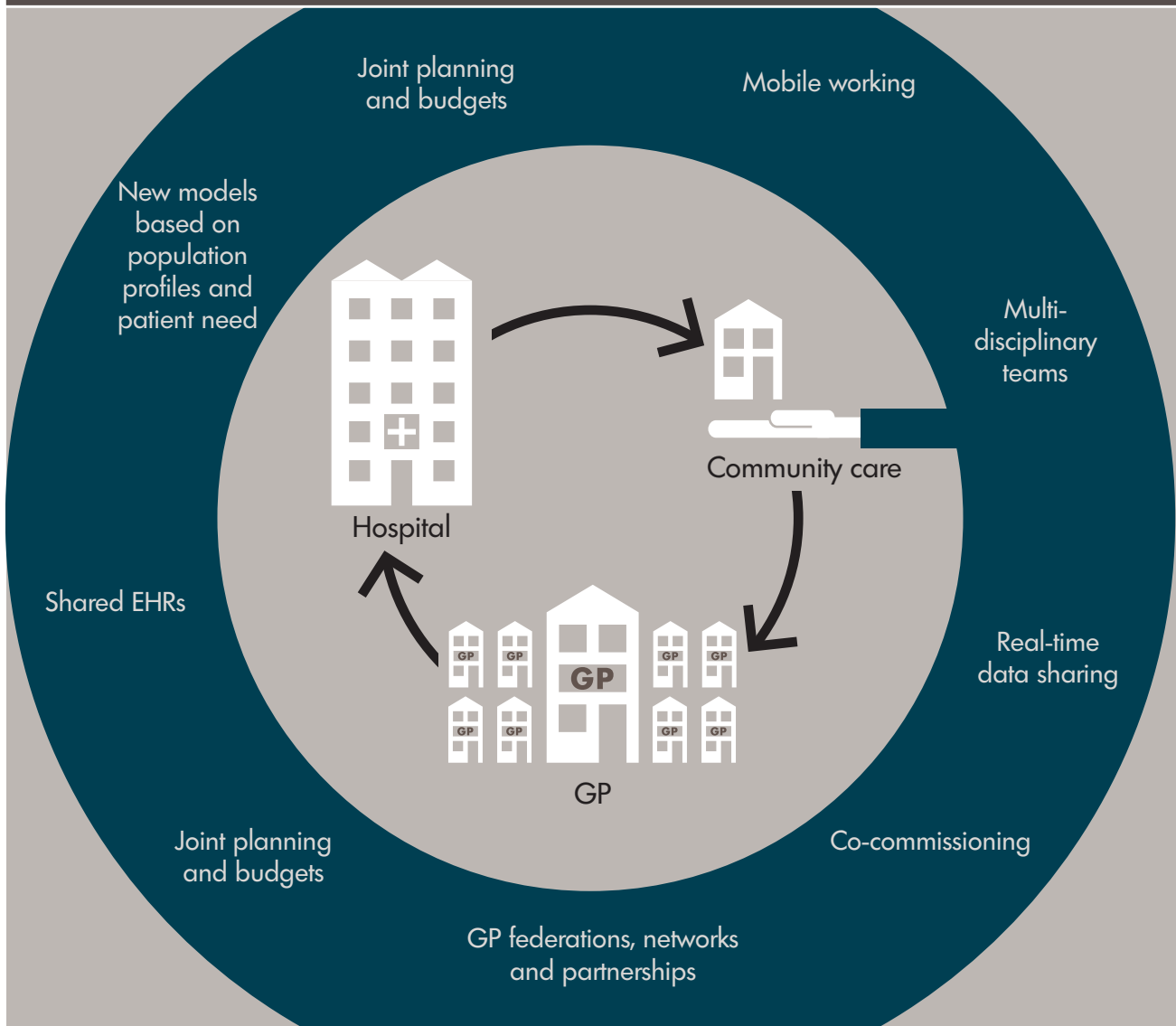
How do we get there?

Our research has revealed key challenges facing primary care organisations in realising this future. This section sets out local and national challenges. In some cases, we describe how these challenges have been overcome by primary care organisations to date.

This section was informed by two workshops with users and suppliers of technology in primary care and policy makers, as well as our case study sites.

Overcoming local challenges

Ensuring clinical and patient buy-in

Patients and professionals can be resistant to change. Professionals are often concerned about an increase in their workload, data security and patient confidentiality associated with the technology, the cost of the technology and decreases in quality of care (offered through remote consultations for example). The latter is also a concern shared by patients.

Key solutions for addressing these challenges include:

- a clear communication strategy with patients and professionals

- engaging patients and professionals early on in the process of change

- demonstrating the benefits of change at an early stage

- providing training and support

- deploying effective leadership and governance mechanisms, such as clinical champions and a dedicated project delivery team.

Addressing gaps in IT capability through appropriate funding

Technology is playing a vital role in ambitious plans for transformation in many primary care organisations. As such, gaps in IT capability or IT infrastructure (e.g. hardware, software, technical support and compatibility issues) can hinder transformational progress. Organisations must invest in technological solutions.

In addition to national funding streams, organisations should seek other sources of capital. Our case studies reveal that several organisations sought private-sector funding as a means of acquiring complementary investment and/or expertise (e.g. technological expertise that the organisation may be lacking).

Health care organisations should also ensure they have plans in place to ensure long-term sustainability of the new service model.

Ensuring engagement and buy-in from CCGs

Ensuring engagement from CCGs is a particular issue when individual practices are keen to procure digital solutions from commercial providers. In the case of VitruCare, the CCG was initially resistant to the new technology.

Solutions for this challenge include:

- demonstrating the benefit of the technology (although this is not always possible)

- identifying existing demand for the innovative approach by demonstrating provider or patient interest

- engaging CCGs on strategic-level programme boards.

Accounting for staff time

Transformational change requires significant staff time for change management, training and embedding new processes. This poses challenges for organisations already operating at maximum capacity.

To overcome this obstacle, organisations have invested resources to free up time for clinicians to focus on strategic objectives and developed plans to ensure staff engagement and commitment (e.g. action learning sets, focus groups, etc.). In addition, a number of organisations are developing tools for improving workforce efficiencies (e.g. electronic allocation and management of tasks).

Accurate estimates of necessary time commitments can act as an important enabler in ensuring professional buy-in and accurately planning the implementation.

Overcoming national challenges

Addressing information governance

Information governance (IG) is a key concern for data sharing across organisations and between providers and patients. This is becoming more important as organisations work more collaboratively and patients are increasingly expecting ownership and control over their health data.

At present, there is a tension between the Health and Social Care Act 2012, which sets the expectation that personal confidential data will be managed centrally (for purposes other than just for direct care) in order to protect confidentiality, and the Data Protection Act 1998, which stresses that patients must be informed about how their data will be used.[6]

A number of stakeholders expressed the need for clear statutory guidance to enable effective data sharing, and this will need careful consideration by NHS England. At present, risk-averse data managers in primary care organisations are perceived to prevent innovation due to concerns about accountability. The Section 251 approval process with the Confidentiality Advisory Group is also seen as overly cautious and burdensome. In one instance, after a 14-month approval process, an Integrated Care Pioneer site was granted the ability to share health and social care data for 12 months only, and some of the patient groups best placed to benefit from joint care planning had to be excluded from data sets (e.g. children, and adults with mental health conditions, learning difficulties, and sexual health issues) (Parker, 2015).

There may also be a role for NHS England to play in recommending which technology is secure from an IG perspective.

Ensuring interoperability

Interoperability of health information systems is essential for effective integration and collaboration. At present, different clinical systems within general practice (e.g. EMIS and SystmOne) do not work together, and this is compounded by the multitude of systems in use in secondary and community care.

A national response is required to ensure this is addressed, as clinical systems providers have little incentive to collaborate in finding a solution, despite having publicly agreed to collaboration.

Stabilising funding flows

A key challenge faced by organisations implementing new solutions is a reliance on limited funds – such as those awarded through the PMCF. This can impact on the sustainability of new models and the scaling up of pilot projects. In addition, some practices have reported that they do not know what their budget will be until well into the financial year, which hinders planning.

On a smaller scale, we have also identified a challenge around high licence fees, which often account for a significant proportion of practices' IT budgets.

Many stakeholders feel there needs to be improved funding for general practice, particularly in relation to IT.

6   See www.england.nhs.uk/wp-content/uploads/2013/03/hscic-data.pdf

5. Conclusion

Primary care is changing rapidly, driven by a variety of pressures including demographic change and resource constraints. National policy has also been playing its role in shaping the organisational and service delivery landscape. We have been observing the emergence of increasingly large GP provider organisations for some time, but this trend has recently gathered pace, driven largely by a need for sustainability and catalysed by the publication of the Five Year Forward View. In the context of widespread at-scale working, we expect to see new organisations focusing on integrating care pathways and teams, proactively providing care to the population, improving access in line with policy expectations to increase possible modes of contact, and using clinical decision-making tools to decrease variation and increase the number of care pathways in primary care, thereby moving more care out of hospital. A number of supporting trends will facilitate the key trends, such as a more diverse primary care team, improved ongoing education and training for all staff, and patient empowerment.

Given the way in which primary care is evolving, we suggest that three technologies should be prioritised locally and nationally:

- Shared electronic health records (supported by sound interoperability and information governance mechanisms) to facilitate coordinated care

- Telehealth solutions to improve patient access to services and professional access to specialist expertise

- Patient tools and resources such as portals which facilitate booking appointments online and access to records, information and advice.

Where organisations are working at scale, integrated back-end solutions are also likely to be important in realising efficiencies.

There is a long way to go before digital technology can improve the working lives of professionals and have an impact on patient outcomes. Much of the hard work needs to be addressed at a local or organisational level – such as overcoming resistance to new technology or lack of clinician engagement.

But there are also things that NHS England and other national bodies can do to help practices along their journey. They should foster an environment that supports local freedom to innovate and adopt technological solutions. They must also navigate a path that balances central direction – ensuring rigorous data standards are in place – with support for local flexibility and autonomy. Too many national requirements are likely to stifle innovation, whereas complete devolution risks data governance and quality breaches.

We must not forget that primary care is in a transitional phase. The current transformation effort is being driven by pilots and short-term programmes, many of which will not prove sustainable in the long term. During this phase of rapid and

potentially radical change, significant investment in infrastructure, software and training is needed.

In the longer term, when service models and their technologies are operating effectively and organisations are mature, the role of practice leaders and central organisations will change. They must reflect on what level of innovation is desirable and achievable on an ongoing basis and what level of investment they are prepared to make in the long term. Also, how will they strike the balance between long-term stability and innovative disruption? And how will they keep pushing progress and innovation in a post-transition primary care landscape?

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