Learning from Connections:

Lessons from the NHS-VHA Leadership Exchange on the adoption of digital health

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MAKING HEALTH PERSONAL

Contents

About this publication

This is the second report on the VHA – NHS transatlantic Leadership Exchange which began in 2013, but which also builds on the Exchange Programme relationship dating back to 2002. Previous exchanges have led to numerous service improvements and this document details new lessons learnt and how delegates have begun to promote and introduce more efficient ways on working back in their local health communities. Scaling up technology enabled care services have the potential to support improved self-management of long term conditions, facilitate seven-day a week services and improve productivity through more efficient pathways.

Early adopters are still in relatively short supply so it is our hope that this Leadership Exchange initiative will grow in order to continue to exchange learning, enthusiasm and expertise about technology and telehealth. The challenges that face the NHS are enormous and we truly believe that some of them can be met through this enabling technology, not least because it allows patients to become participants in their health.

NHS England and 2020health are extremely grateful for the enthusiasm, dedication and time which VA staff dedicated to this Exchange Programme. This exchange programme was far from easy to plan and the staff commitment to shared learning have made the trips an extremely effective and positive experience. Invaluable knowledge and enthusiasm for the potential of digital health has been brought back to England's NHS.

Many thanks also to Stoke on Trent Partnership NHS Trust, for hosting the Partnership Exchange on behalf of NHS England.

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Joanne has 30 years' experience in the NHS, with her main interests including systematic large scale change management to support improvement of quality of care for people with long term conditions. Joanne co-chairs the national Integrated Care for TECS Commissioning Development Task & Finish Group, which will contribute to the refreshed Integrated Care for TECS strategy due for publication in the spring. Her special interests are in digital support for both staff and patients, including innovative service redesign to support large scale change. Jo currently works for Staffordshire and Stoke on Trent Partnership NHS Trust as Associate Director for Transformation and Innovation.

Julia Manning

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1. Executive Summary

As one of the world's largest and most effective publicly funded health systems, the US Veteran's Health Association (VA) uses digital health to deliver improved services to patients, with the intention of 'right care, right place, right time'. The NHS in England aspires to exploit the potential of digital health similarly and is promoting the consideration for digital technologies across several major programmes. These include the Technology Enabled Care Services (TECS), which grew out of the original 3millionlives (3ML) programme[1]; Safer Hospitals, Safer Wards[2]; Digital first[3] and Bettercare[4 5] transformation.

In March 2013, a high level Exchange Programme in Digital Health between the NHS and the VHA was announced to share such learning. Four regional visits to the VA involving 40 local and national NHS and social care leaders were held in mid–2013. This report documents the key lessons learned and is intended to support action locally in introducing and scaling up technology enabled care services to support improved self-management of long term conditions. The report also aims to inform the national TECS programme in support of integrated care.

As a result of the Exchange and the dialogue and cross-learning amongst delegates, local delegates have initiated a wide range of follow-up activities including:

- Developing or refining existing strategies to deliver technology enabled care services to patients across local communities
- Initiating new projects to test out and learn about the clinical viability of certain technologies observed in the VA, in a range of settings
- Bidding for central funding support through the Technology Funds
- Widespread sharing of experience and learning at local and regional networking events
- Developing local leadership and clinical champions to support implementation of digital technologies

Looking to the future, the Exchange will continue and develop, through virtual working together and cross-learning through action sets, making use of WebEx social media, and continued sharing of best practice. This is likely to be augmented through the US–UK governmental bi-lateral agreement for the use and sharing of health IT information and tools, signed in January 2014.[6]

1. *http://3millionlives.co.uk/*
2. *http://www.england.nhs.uk/ourwork/tsd/sst/tech-fund/*
3. *http://digital.innovation.nhs.uk/pg/dashboard*
4. *http://www.productivity.nhs.uk/Dashboard/For/National/And/25th/Percentile*
5. *https://www.gov.uk/government/publications/better-care-fund*
6. *http://www.healthit.gov/policy-researchers-implementers/health-information-technology-use-united-states-and-united-kingdom#sthash.MaP8NUPI.dpuf*

1. Executive Summary

The lessons learned have been grouped according to the widely used McKinsey 7S strategic framework:

	Local NHS learning & considerations	NHS England learning & considerations
STRATEGY	Consider the VA's Patient Aligned Care Team model in reorganising care around the person to deliver anticipatory, integrated care to patients with complex long term conditions The opportunities for digital health to reach patients with different needs require a whole-system approach	The NHS as a whole needs to be encouraged to embrace digital health, not just the pioneers. New technology is changing our daily lives; the NHS needs to welcome it.
STRUCTURE	Risk stratification helps to identify the patients most in need of digital health support New, coherent outcome-based incentives may be needed for early adopters to drive sustainable delivery at scale of digital health In putting the person at the centre, Integrated Care Pioneers could usefully study and learn from the VA's approach to whole care	Common IT platforms, procurement frameworks, business case and deployment toolkits all enable scalability, cost savings and replicable success Resolve any perverse incentives, switching to reward prevention and self-care, and away from supporting the current episodic, fragmented care of patients
SYSTEMS	Telemedicine-based clinics can be highly effective for specific types of interventions and patient groups Taking incremental steps with clinicians to introduce and bed-in the technology helps cement its use as 'the new normal'	Telemedicine, eConsultations and Secure Messaging all represent potential early wins for the NHS. Adoption at scale would require changes to NHS tariffs
SHARED VALUES	Consider adopting more proactive patient experience models, as seen in the VA, with faster response to patient problems Secure messaging, personal health records and accredited health apps are essential tools in empowering patients and improving self-care	

1. Executive Summary

	Local NHS learning & considerations	NHS England learning & considerations
STYLE	Creating a digital health-enabled service needs senior leadership commitment, continuity of vision and a willingness to listen to patients and take risks Service redesign comes hand-in-hand with a change-minded culture, listening and responding to patients' needs. Consideration of the integration of appropriate technologies is important to service design, though not itself a driver	NHS England needs to present a unified voice to create a common vision on technology's role in delivering person-centred integrated care at scale
SKILLS	Since using new technology may not be intuitive for many of the NHS workforce, training needs to be inclusive Shared learning is essential to underpin the scaling up of digital health programmes	The core competencies for digital health need embedding into the curricula of clinicians Some national oversight of digital health is needed in terms of commissioning, procurement and best practice adoption
STAFF	The effective use of digital health requires a different type of nursing support to traditional primary care and community services	Consider introducing new job roles to support care coordination and delivery of new digital health solutions

2. Introduction

2.1. Background

As part of the NHS's commitment to placing digital health at the heart of service transformation, NHS England and the VA agreed to a three-year Leadership Exchange Programme starting in March 2013, with commitment from senior executive and clinical leaders in both organisations.

The Exchange aims to improve clinical engagement in England's NHS, developing confidence that new technologies can make a real difference to patient care. In time, it is expected this will lead to a measurable increase in adoption of technologies to support the management of long term conditions (LTCs). In particular, the Exchange aimed to develop a cadre of champions who would return to the NHS and provide leadership and insights to colleagues across health and social care. Of the 40 champions on the 2013 Exchange programme, some have brought learning from a strategic point of view, whilst others have been given the opportunity to implement learning through their work on the ground, directly with patients.

"The Leadership Exchange Programme enables leaders to see how the NHS can scale up from our current pockets of excellence to match the VA's level of impact and outcome"

Joanne Harding,
NHS lead coordinator
for the Exchange

The 2013 Exchange visits have resulted in the following:

- Setting up local leadership networks to disseminate learning from the visit
- Planning and implementing a series of local projects to demonstrate the value of visits and applicability to NHS, particularly the benefits to patients
- Preparing clear advice/expectations for NHS England to accelerate the pace of digital health adoption
- Participating in an ongoing relationship with VA, including "buddying up" with relevant VA leaders

This document aims to capture the NHS learning and sharing of knowledge from the first year visits to the VA and is addressed to a general, non-technical NHS audience. It is also intended to inform the Technology Enabled Care Services Implementation Plan for the Integrated Care TECS 2014–15 programme (discussed in the final chapter of this report). To add depth to the lessons learned, quotes from the participants are included in the report, recorded from daily evaluation sheets.

Commissioned by the Department of Health to support the launch of the Exchange, 2020health published a major report, 'Making Connections' in early 2013 (see Bibliography in Appendix A). This report was written for Exchange participants (on both sides of the Atlantic) to be well briefed in advance on each other's organisational background and their progress on delivering digital health. The earlier report provides additional detail to that presented in this document and is used as a key reference.

2. Introduction

2.2. The four visits

In 2013 there were four NHS group visits to two different 'Veteran Integrated Service Networks' (VISNs) or 'regional divisions' of the VA. All groups saw similar facilities in both Washington and Minneapolis so that delegates within a group were likely to observe comparable locations and approaches. In this way, learning from the trip could be maximised and momentum maintained as delegates returned home.

NHS South and NHS North each made a week-long visit in the Spring, both to Minneapolis. NHS Midlands & East and NHS London visited Washington DC in the summer. An overview is detailed below.

NHS Group	Visit date	VA region visited	Care locations visited
South	April	VISN 23 - Minneapolis	Busy urban and semi-rural hospitals in Minneapolis and St Cloud, MN; Community Based Outpatient Clinic (CBOC) in Maplewood, MN; extensive interactions with executive and clinical leaders, and patients
North	May		
Midlands	June	VISN 5 – Washington DC	Major research and teaching hospitals in Baltimore, MD and Washington DC; Mental health; Martinsburg community hospital; Kaiser Visioning Centre; extensive interactions with executive and clinical leaders
London	July		

All NHS Exchange delegates had the opportunity to meet with Dr Robert Petzel, Under Secretary for Health at the VA, leaders in digital health at HQ level, leaders from their VISN and leaders from regional digital health teams. Additionally, the groups met with patients ('Veterans'), primary care and specialist doctors, nurses and care coordinators, and IT specialists. This allowed the NHS groups to meet people in the VA who worked at a strategic level, as well as operationally and clinically across a number of different disciplines. This gave NHS staff the opportunity to understand why some programmes had truly succeeded at all levels, as well as why parts of, or all of, other programmes had been challenging.

Each NHS Group consisted of 7–12 leaders from different organisations and professional backgrounds, including primary and secondary care, as well as some local authority leaders. Each leader was carefully selected based on their strategic and delivery responsibility for digital health, and on their ability to effect change locally based on learning from the visits. Senior leaders from NHS England joined each group to learn lessons of national significance. A senior representative from 2020health was also present to facilitate each trip, capturing the experience and evaluating the leadership exchange programme on behalf of NHS England. A full list of participants can found in Appendix A, with an overview of each group's programme provided in Appendix B. A glossary of terms is available in Appendix C.

2. Introduction

2.3. Delegates expectations and sharing

Each trip was shaped to accommodate the specific learning objectives of the participants. Some of the core collective objectives were:

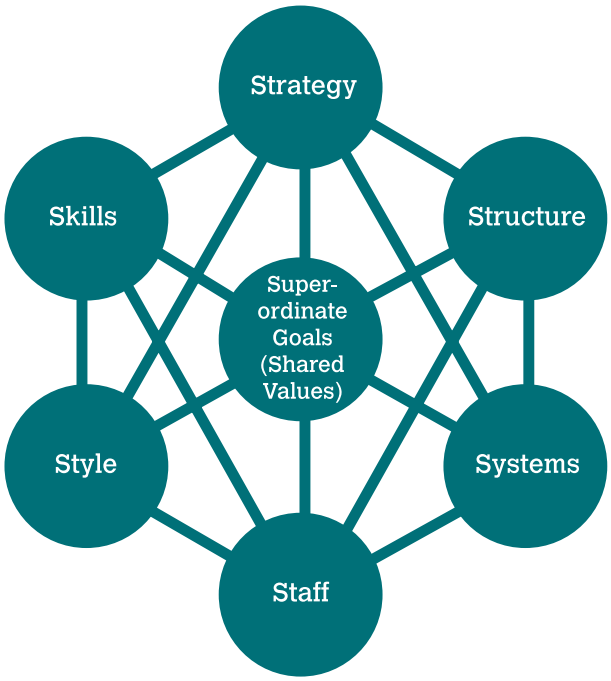
- To share experience and expertise with the VA, e.g. on strategy, clinical pathways, management approaches and incentives
- To capture lessons learned about the application of key digital health modalities and share through local, regional and national forums
- To develop a programme of work based on learning following the visit to support the overall ambition of the TECS programme
- To establish relationships and direct working arrangements with NHS England

2.4. This report

Chapter 3 provides a brief overview of the VA (more detail is available in 'Making Connections').

To present the key lessons and reflections from the Exchange, the McKinsey 7S strategic change framework[7] has been used to provide a logical way of organising and presenting themes and actions. This framework recognises seven internal aspects of an organisation that need to be aligned if a mission is to be delivered successfully. These aspects cover both objective factors (Strategy, Structure and Systems) and subjective factors (Shared values, Skills, Style and Staff), respectively addressed in chapters 4 and 5 of this report. These aspects reflect well the themes emerging from the visits.

Figure 1 McKinsey 7 'S' framework



The concluding chapter (6) presents how NHS participants are taking forward the learning locally and how this fits into wider progress with the Integrated Care TECS programme.

7. *This framework is familiar to many NHS leaders. See: http://en.wikipedia.org/wiki/McKinsey_7S_Framework*

3. VA Overview

This section gives a brief summary of the Veterans Health Administration (VA) to an NHS audience (more detail is available in 'Making Connections') and contrasts the VA with the NHS.

3.1. Brief overview

Key VA Facts

- VHA is the major service and spend within the US Department of Veteran Affairs
- Covers population of 8M enrolled veterans, 6.3M active patients; $53bn budget
- National integrated delivery system – 21 VISNs; 225,000 staff
- 152 hospitals (VA Medical Centres), 673 Community Based Outpatient Clinics
- Federally managed, eligibility criteria set by Congress
- Scope covers all specialist, acute, primary care, social and home care
- 60% of US doctors receive some or all of their training in the VA

Core to its mission of keeping patients healthy, the VA aims to support patients with long term conditions through care 'at a distance' and the promotion of self-management skills. This has led to a significant reduction in the demand on acute care beds (from 53,200 in 1995 to 16,900 in 2012) and the commensurate expansion of outpatient clinics. Extensive studies show that the VA consistently provides a better quality of care than other health systems in the US, and at a lower cost.

Central to its strategy has been to aim for 'best value care' through systematic measurement, disease prevention and improvement of outcomes. The VA's transformation continues apace today, with a key goal being the roll-out of Patient Aligned Care Teams (PACT) nationally. Discussed more in Chapter 4, the PACT initiative is shifting the VA's primary care service from a primarily doctor-driven model to one with truly collaborative care.

3. VA Overview

3.2. Comparing the VA and NHS

As two of the largest publicly funded whole healthcare systems globally, the VA and the NHS face a number of parallel challenges to deliver improved outcomes within cash-limited budgets. The populations that they serve are ageing, with a growing proportion of patients with long-term conditions. There are some other obvious similarities, in that they both operate nationwide, are centrally funded from taxation (albeit that Veterans may have to co-pay for some services depending on their eligibility) and are primary care driven.

The VA patient profile has however some key differences with the NHS one, in particular:

- Generally older (average age 64) and in poorer health; i.e. more than two long-term conditions (LTCs) and an additional mental health diagnosis
- A higher prevalence of mental health conditions (particularly post-conflict)
- 90% male; 10% female (proportion growing); no children
- In excess of 40% live rurally, some based far away from a VA facility

While government policy with the NHS over two decades or more has been to reinforce the commissioner–provider split (with CCGs established to increasingly reflect local priorities), there is no such split in the VA. And whereas the NHS works on an increasingly federated model, the VA remains a single integrated, provider system. Importantly, it does not provide emergency services (A&E).

"Today I got a real sense of just how well connected the VHA system is – a real matrix of people and service connectivity – but that the core of it is the electronic patient record"

Participant on NHS North visit

The VA is structurally more stable, with a high degree of service connectivity, coherent delivery models and role definitions. It uses a simpler set of incentives (targets): for example all doctors are salaried employees, thus avoiding some of the perceived conflicts seen in the NHS. Its management approach is more directional, perhaps reflecting that its patient population is around 1/7th the size of that of the NHS in England.

A final key consideration is that the VA is able to take the long term view on what is best for each and every patient, since once enrolled, the patient never leaves the VA. While this should be the case in the NHS, a lack of a 'whole system' approach and attitude sometimes prevents this. It is this patient-centric outlook that drives the VA's focus on population health and preventive medicine, and the encouragement of improved levels of self-care.

4. Lessons from the VA – Objective factors

This section addresses the objective lessons related in the 7S framework, namely Strategy, Structure and Systems. Lessons learned are presented after each section for local NHS organisations to reflect on, as well as others for NHS England as owner of the TECS programme.

4.1. Strategy

Mission, Vision and Goals

The commitment to the VA's vision and mission, by staff at all levels and across a number of different organisations, is striking. The VA's mission is to

"Honour America's Veterans by providing exceptional health care that improves their health and well-being" (VA, 2013b)

The VA's vision is that it

"will continue to be the benchmark of excellence and value in health care and benefits by providing exemplary services that are both patient centred and evidence based. This care will be delivered by engaged, collaborative teams in an integrated environment that supports learning, discovery and continuous improvement. It will emphasize prevention and population health and contribute to the nation's well-being through education, research and service in National emergencies." (VA, 2013b)

Supporting this mission, the VA has a set of core values: compassion; commitment; excellence; professionalism; integrity; accountability; and stewardship.

Participants observed that all staff – executive, operational and clinical – hold these elements at the forefront of their mind, whether treating patients or in leading the organisation. We saw real conviction and enthusiasm to honour patients and support carers. Delegates observed many poster and screen savers reinforcing the mission, and in lifts posters reminding staff to 'let Veterans in first'.

"The VA has a great ethos and values and I really believe that all staff and clinicians have total conviction regarding their mission"

Delegate visiting Washington VA Medical Centre

This creates a real focus for all staff, bringing the organisation together and helping it to provide consistent and efficient high quality care. The VA's mission and vision statements are clear and simple, making them easier to live out and embed. Each member of staff, whatever their role, felt valued and understood how they were contributing to achieving the mission and vision of the VA.

More specifically, the VA commitment to deliver patient-centred care is explicit. The system has moved from one that is problem-based to one built around patient needs. These needs overtly include convenience, with care based on the location of the patient, not the clinician. It aims to deliver care just-in-time, so avoiding unnecessary unplanned care.

"Today showed…the value of team working, what can be achieved when an organisation decides it's going to do something and then finds a way to do it"

NHS North delegate

"The VA is an organisation that has taken the ideal of moving from "Good to Great" and developed its structures, processes and organisational culture to support this"

NHS London delegate

4. Lessons from the VA – Objective factors

Lessons learned

Local NHS:
The VA demonstrates to NHS organisations the value in having a short, meaningful mission statement consistently applied, around which all staff can align and be held to account

Patient Aligned Care Team

The VA's version of primary care is delivered through a patient-centred hub model, with each patient assigned to a dedicated 'Patient Aligned Care Team' (PACT) providing coordinated primary care services to patients in their localities. The strategy for PACT furthers the personalisation agenda by placing the patient and their needs firmly at the centre of care through:

"I would really like my organisation to have the collective vision putting patients in control of their own personal health care that is so evident in the VA"

NHS North delegate

- Supporting personalised health planning, with Veterans encouraged to take a proactive role in their care
- Enabling proactive integrative strategies for staying healthy (e.g. through wellness programmes)
- Making care more accessible, not necessarily through face-face consultations
- Improving coordination and continuity of care, including with non-VA providers

The PACT model represents a further stage away from reactive hospital-based care; it is also an ideal mechanism for pathway redesign, integrating new digital health technology into workflows. Through cascaded targets and tight measurement of metrics, especially reductions in bed days of care, PACTs are incentivised to deliver patient satisfaction and improved clinical outcomes. PACT has introduced more clearly defined, non-hierarchical roles, giving team members empowerment to make decision and greater clarity on escalation.

"As a GP I was really impressed about how the VA delivers continuity of care. UK primary care has come to value speed of access over continuity – not a good way of managing complex patients."

NHS Midlands delegate

PACT has also enabled clinicians to be in control of a manageable caseload of veterans ('panel size', typically now 1,400–1,500 patients), working as a team to achieve common goals. By working differently and smarter, more patient contact is allowed for – even if via the telephone or secure email – bringing greater veteran engagement and improved staff satisfaction.

4. Lessons from the VA – Objective factors

Lessons learned

Local NHS:
NHS primary and community care organisations should reflect and learn from the PACT model in reorganising care around the person to deliver anticipatory, integrated care to patients with complex LTCs

Digital Health Strategy

Integral to its business strategy over many years, a major digital health[8] programme has been developed by the VA to improve the health of designated individuals and populations, with the specific intent of:

- Providing 'the right care in the right place at the right time', connecting Veterans to VA's services at their preferred site of care delivery
- Addressing the 'mismatch between where expertise is and where it needs to be', making the home or local community the preferred site of care wherever possible and offering new modalities of care.
- Improving patient self-management and shared decision-making
- Enabling consistency across services, so patients receive improved access and a more reliable and equitable service
- Readily facilitating 'step up, step down' care, according to patient needs at the time (e.g. post a critical event)
- Supporting the balancing of staff workload distribution

"In the future, the use of e-Technologies will be routine practice in all aspects of healthcare"

Dr Robert Petzel,
VA Under-secretary for Health

"Telehealth works. Not just a theory, but operationally possible"

NHS England

There is a common understanding across the VA that introducing such a widespread digital health programme takes significant time before it is rooted at the core of patient and staff pathways and its benefits become fully visible. Its wide scale implementation has taken over two decades of committed work and strong leadership from the very top of the organisation. This is not least because the effective introduction of technology into clinical pathways has involved significant cultural changes across the entire organisation, affecting wide ranges of staff. While the approach has been pragmatic and flexible with small proof of concept projects and pilots, the supporting technical architecture across the VA emphasises scalability, innovation and openness.

NHS delegates formed the impression that the VA can roll out incremental programmes on a wide scale with positive outcomes much quicker than the NHS can. The converse is that the VA is resolute and timely in axing projects that produce negative results.

8. *The VA use the generic term 'telehealth' in referring to their digital health programme, while 'home telehealth' is what the NHS would know as 'telehealth'. In this report for an NHS audience, we use the generic term 'digital health'.*

4. Lessons from the VA – Objective factors

"The overwhelming learning for me is that digital health is a paradigm shift in the way health care will be delivered in the future"

NHS North delegate

The digital health programme has demonstrated positive results, especially in reducing utilisation of health care resources. For example, the VA have tracked the impact of Home Telehealth over a decade or more – the most recent evidence shows a cumulative reduction in bed days of care by 53%. In 2013, 26.1% of patients received elements of their care via virtual care and the organisation is on track to meet its aim that 50% of patients would so benefit by 2015.

While the use of technology has been a key enabler to success in making digital health a primary route for delivering service, it is the underlying culture, leadership, processes and training that have been paramount, with strategy set nationally while implementation is driven locally. By embedding digital health into the culture, the lives of many patients, carers and staff are being made easier.

One important point is that digital health has been shown to be equally applicable to rural or urban-based Veterans, with both groups generally valuing the improved patient convenience. For some groups such as those with mental health conditions, it avoids the stigma of being seen by other patients in clinic.

"Digital health has the power to open pathways of care that previously were not available"

NHS North delegate

NHS England has already recognised the importance of new models of care and absorbed some of the learning from the VA into its 'AnyTown' toolkit,[9] launched in January 2014. The primary aim of this resource is to improve service quality but there is also a significant financial impact. With modelling to reflect the different healthcare economies, the implementation of the high impact interventions (including telehealth) and early adopter interventions will theoretically reduce the funding gap by up to 40% for rural areas, up to 58% for suburban areas and up to 56% for urban areas. The toolkit includes learning from the VA in its adoption of telehealth.

The main types or modalities of digital health in use are described later in the Section under Systems.

Lessons learned

Local NHS:
The opportunities afforded by digital health to reach and work with patients with different needs must be considered through a whole system approach

Realism is needed about the time to achieve deployment at scale; for example in addressing risk stratification, patient recruitment, securing patient consent and infrastructure management issues

NHS England:
The NHS as a whole needs to be encouraged to embrace digital health, not just the pioneers. New technology is changing our daily lives, the NHS as a whole needs to welcome it

9. *http://www.england.nhs.uk/2014/01/24/any-town/*

4. Lessons from the VA – Objective factors

4.2. Structure

Standardisation and policy changes

The VA has a major priority to achieve higher levels of standardisation to deliver high quality care uniformly. It aims for standardisation based on best practice – particularly in terms of care pathways, processes and compliance – with technology an important enabler to this.

The standardisation of technology and equipment is also key to the success of the programme. For example, the VA has standardised its video-conferencing technologies at a national level which means expert clinicians from any geographical area in the US can speak to patients based anywhere else. Centralised procurement has led to benefits of commonality and cost effectiveness; in some cases, a small framework of preferred suppliers is selected centrally enabling local VA organisations to pick the technology fitting their local need.

Equally, the VA follows a standardised process by which to implement new digital health services. Delegates visiting Minneapolis were walked through the 65-point business case and deployment check-list templates used for introducing new services through new pathways of care. In this way, the VA can introduce new services in as little as three elapsed months. The VA is very clear between local and central responsibilities; this 'loose, tight' framework is discussed more in the next chapter under Leadership.

"The greatest challenge for innovation is not the bright idea but how we go about making it a reality. The check-list brought it home just how much preparatory work and detailed planning there is"

NHS North delegate

Lessons learned

NHS England:
Common infrastructure platforms and procurement frameworks enable rapid scalability and cost savings

Commissioning and deployment toolkits help with replicable success

Evidence-based approaches (and risk stratification)

The VA places great emphasis in data-driven evidence-based approaches, both at the macro level in the design of services and at the patient level with risk stratification.

At the macro-level, the VA has measured the effectiveness of Home Telehealth in a seminal paper published in 2008. The VA plans to publish new evidence and results in 2014 that includes reference to a control group. As a general principle, the VA has decided against needing the rigour of using Randomised Controlled Trial (RCT) studies as a means to meticulously assess new digital technology before deciding to adopt it. They have found that an RCT is too restrictive and digital technology is not an 'intervention' like a new treatment is. (This is in contrast to the Department of Health's Whole System Demonstrator RCT-based programme.)

4. Lessons from the VA – Objective factors

At the patient level, the VA has developed its Care Assessment Needs Score (CAN) risk stratification tool, which is fully integrated with the electronic health record (EHR) and has the following features:

- Assesses hospitalisation risk within 12 months for the top 10 LTC diagnoses
- Used weekly at PACT level to identify patients suitable for telehealth
- Built on post-hoc analysis across 4.5m VA patients
- Flags up what resources have already been deployed for the patient and their level of utilisation of services over prior periods

"Without a care co-ordinated approach and the use of risk assessment to use resources to maximum benefit, digital health will not be effective"

NHS North delegate

While the tool can be used in patient consultations, it is the primary care physician's responsibility whether or not to refer the patient for telehealth. This tool has allowed the VA to target the optimal telehealth intervention with the most appropriate patients.

Lessons learned

Local NHS:
Best practice patient selection methodologies are critical to the success of any telehealth programme. Risk stratification must be used to identify the patients most in need of digital health support

Proving the evidence base around innovative new digital health services such as telehealth requires rigour but realism. Short, sharp tests are more appropriate than an RCT

Funding

It is clear that sufficient funding is required for successful digital implementation. The VA has fully invested in its digital health programmes, including significant financial support for training, often an area the NHS has de-prioritised. The VA funding systems, which allow for innovation and trials of new pilots, incentivise staff to introduce digital health to the benefit of patients. For example, on the Home Telehealth Programme physicians initially received a bonus relating to the number of patients they had referred into the programme.

Delegates were also struck by the comparison of incentives between the NHS and VA. The whole system approach means that the VA rewards improvements in patient health, incentivising clinicians to promote preventative regimes. For example, their primary care physicians receive rewards for lowering the blood pressure of a certain number of patients. The new NHS Quality & Outcomes Framework rewards GPs in the community for obtaining reductions in the blood pressure of patients with CHD, stroke or TIA, or peripheral arterial disease, but as GP budgets are separate from hospital budgets, other clinicians involved in those patients' care are not incentivised.

4. Lessons from the VA – Objective factors

Digital health is also incentivised in the current NHS GP contract through enhanced service payments. These are designed to promote planning and implementation of remote monitoring and facilitating online access for patients to prescription ordering, test results and eventually their medical record. Preparatory work in 2013/14 has been paid for on a capitated basis to support the subsequent introduction of remote care monitoring arrangements for patients with long term but relatively stable conditions in 2014/15.[10] Separately, a second enhanced service has been designed by NHS England to facilitate improvements in the electronic interaction of registered patients with GP services.[11] The coalition government's aim set out in 2010 was that all patients should be able to view their GP electronic record by 2015.

Lessons learned

Local NHS:
New, coherent outcome-based incentives may be needed for early adopters to drive sustainable delivery of digital health at scale

NHS England:
To overcome the innate reluctance amongst some local leaders to take financial risks by making innovative decisions, consider how to encourage organisations to take advantage of financial freedoms to exploit new technologies (e.g. using grants to kick-start the spread of digital health in the NHS)

If the NHS is to successfully maintain the delivery of high quality care within its means, NHS England needs to resolve any perverse incentives, switching to reward prevention and self-care and away from the current episodic, fragmented care of patients. The Year of Care programme may wish to consider the incentive approaches adopted by the VA

Integration of health and social care

A key reason that the VA is able to provide such a connected service – particularly to their sickest patients – is because their health and social care systems and records are fully integrated[12] without the organisational, financial and information governance boundary challenges faced in England. This allows the VA to fulfil their notion of 'whole care', which may also encompass mental health and social care. This notion resonated strongly with many NHS delegates.

This is in contrast to the NHS where the notion of whole care remains difficult to implement, because of the division of health and social care. Although much work is being done in the UK to pool budgets between health and social care, take an integrated viewpoint through Health and Wellbeing Boards, and develop a more collaborative approach (particularly with the Integrated Care Pioneers), there is still some way to go.

10. *http://www.england.nhs.uk/wp-content/uploads/2013/03/ess-remote-care.pdf accessed 17.3.14*
11. *http://www.england.nhs.uk/wp-content/uploads/2013/03/ess-patient-online.pdf accessed 17.3.14*
12. *Some home care is delivered under contract by non-VA providers*

4. Lessons from the VA – Objective factors

4.3. Systems

This section addresses the main systems and related technology platforms used to support digital health.

The VA's adoption of digital health encompasses several major 'modalities' (channels of services to patients). Following well defined tests, these are now actively marketed and deployed on a national basis, with varying degrees of uptake according to local need. Table 4.3 summarises these main modalities, with examples of applications observed in use during the four trips; more detail is available in the 'Making Connections' report.

The VA has nation-wide, common platforms in place for rapid rollout of digital health services and the delivery of virtual care. The infrastructure includes a comprehensive video conferencing platform supporting multi-disciplinary and business team meetings, as well as patient consultations.

With the high level of video and other image traffic, the VA finds it a constant challenge to keep up with band-width infrastructure requirements (15%+ year on year growth is budgeted for), e.g. CBOCs are currently limited to 2 concurrent video sessions. VA technical staff also highlighted information security issues around increasing use of Bring your own Devices, such as tablets and smart phones, that both clinician and patient groups now routinely use in their daily lives and want to use in the VA environment. They also highlighted the on-going challenge of integrating new technology into clinical and business workflow.

The VA has benefitted hugely from their national EHR, in use for more than a decade throughout the organisation. NHS delegates were struck by the absence of any paper in use in the clinical process: they truly operate the 'paperless' environment to which the NHS aspires. This computerised patient record system, known as VistA (Veterans health information systems and technology), is a fundamental prerequisite to the entire VA digital health strategy. That each patient has a single record for primary, secondary, tertiary and social care – coupled with the patient's engagement with their own record – reduces the risk of errors through a lack of connected care. The EHR is also integral to managing long term conditions at a distance pro-actively.

Separate to the four NHS trips in 2013 described in this report was a visit from leaders of NHS England's Patients & Information Directorate to Washington, in May 2013, to assess the potential applicability of VistA for use in the NHS. The 'Safer Hospitals, Safer Wards' programme is now addressing this potential as part of a much wider programme of open source solutions to improve hospital IT across the NHS.

4. Lessons from the VA – Objective factors

Lessons learned

Local NHS:
Telemedicine-based clinics can be highly effective for specific types of interventions and patient groups, provided relevant pathways are redesigned to take full use of the clinical and management capabilities that technology provides

There is value in taking incremental steps with clinicians to introduce and bed-in the technology and its use as 'the new normal'

Where services/solutions are at a relatively early stage in their innovation evolution (such as with Mobile Health), enough time and space needs to be allowed to let them reach maturity and become sustainable

NHS England:
Several of the modalities present opportunities for early wins in the NHS. However, any usage at scale would require changes to NHS tariff (e.g. Telemedicine, eConsultations, Secure Messaging)

In setting an aim for the NHS to be paperless by 2018, NHS England should study the VA's experience carefully. The VA's clinical aim was to improve connected care – becoming paperless was a by-product of this and not a specific objective

4. Lessons from the VA – Objective factors

Table 4.3 – Key digital modalities observed in the VA

Digital Modality / Purpose	Key Features	Specific Applications Observed	Key learning
Home Telehealth – remote monitoring of a patient's physiological status and health conditions Improves chronic care management through improved self-care	Remote monitoring of key readings, symptom and behaviour management Messaging between patients and care coordinators Where appropriate video (specific to each disease) Interactive voice recognition-based telehealth growing rapidly Tailored question sets for each disease management protocol – personalisation possible – supporting health coaching and improved symptom management Standardised business processes in place with systematic coding of activity and routine outcomes data available at a national, regional and local level	Supports the remote monitoring of patients – particularly those at high risk of institutionalisation – across a wide range of needs: • with single or co-morbid LTCs • with or without mental health • patients in levels 2 & 3 of the Kaiser pyramid Home Telehealth often integrates with case management (medications review)	"4M patients would benefit from some form of home telehealth" **Dr Petzel, VA Under-Secretary of Health**

4. Lessons from the VA – Objective factors

Digital Modality / Purpose	Key Features	Specific Applications Observed	Key learning
Clinical Video Telehealth (CVT, aka Telemedicine) – Real-time video-conferencing to replicate face-to-face consultations Helps address inequalities of patient access; patients avoid having to travel large distances; alleviates difficulties in recruiting specialist clinicians in rural areas; improves workload distribution across staff groups	Real-time videoconferencing between specialist at medical centre and patient at the community clinic –means to deliver clinical expertise remotely Have acquired mobile 'carts' for use in outpatient clinics for standardised point of care testing (with blood pressure monitoring, still camera, stethoscope…) Plans to launch CVT in the home (Internet Protocol based, using patient's own hardware) for some patients who can't easily leave home; main users are mental health, dermatology End-to-end services across the VA delivered through a national directory, scheduling and bridge service	SCAN Echo – to support knowledge transfer from specialists to primary care doctors (sometimes with patients present) Tele-mental health – the 'treatment of choice' for many mental health patients (e.g. PTSD, depression, bi-polar disease) Tele-ICU (hub and spoke tertiary care model for ICUs) – enables increased access to critical care specialists Tele-MOVE – weight loss clinics Tele-audiology – remote hearing aid fitting / calibration Tele-pharmacy – supporting PACT teams remotely in medications review and chronic disease management National Genomics Centre – nationwide genetic counselling through CVT	"The cardiologist was interacting so impressively with a patient using CVT… using the availability of all the information to hand, focusing on the patient's story, formulating and then examining the data to back this up" **NHS North delegate** "Setting up a counselling service for genetics demonstrated that by using the digital health infrastructure already in place they could deliver the service through an expert team completely remotely. The benefits to the primary care provider and the patients and their families are all too obvious" **NHS North delegate**

4. Lessons from the VA – Objective factors

Digital Modality / Purpose	Key Features	Specific Applications Observed	Key learning
Store & Forward Telehealth – Acquisition, storage, and forwarding of clinical images to experts for review Drives earlier detection of problems (e.g. diabetes) and provides care closer to home	Acquires clinical information (e.g. images) for subsequent clinical evaluation	Beyond teleradiology (PACS) which is routine in NHS Hospitals, delegates saw: • Tele-retinal imaging – for remote screening and reporting on diabetics • Tele-dermatology – remote capture of images for subsequent specialist review	"As an educator I was fascinated by the idea of training up what are basically Healthcare Assistants to a standard where they can safely and effectively provide high quality retinal imaging that can be rapidly evaluated, and to do it within the framework of an audit process to ensure that quality is maintained and risk minimised" **NHS North delegate**
myHealtheVet – Online patient access to the EHR, and secure text-based messaging between patient & clinical teams Acts as the patient's secure gateway to VA health benefits and services. Improves communication between patient and PACT teams, and helps empower the patient and carer	Veteran's personal health record Self-service prescription refill Secure messaging to clinical teams Ability to download physician notes and other content from the EHR ('blue button') Uptake affected by need for patient to verify identity in person	Secure messaging between patient and PACT teams for non-urgent queries (72 hour turnaround commitment; usual response within 24 hours) Patients can typically request medical advice about symptoms or side effects, access blood tests or imaging results, or request an appointment Secure messaging allows staff members to contact the patient	"We have to be aiming to achieve this in the NHS. This has to become the norm as opposed to additional functionality offered to the few" **NHS Delegate**

4. Lessons from the VA – Objective factors

Digital Modality / Purpose	Key Features	Specific Applic-ations Observed	Key learning
Mobile Health – using a range of mobile devices with the information needed to improve healthcare delivery and support preventative health initiatives Enables the VA to expand services and information to wider population groups, improving access to care. Enhances continuity of care and patient-clinician communications Clinicians can access information and transact wherever they are located, so improving service and productivity	Apps help Veterans, carers and health care teams coordinate all aspects of care Integrated tools to make life easier and empower the individual to manage their own care; benefits both patients and carers (some carers are funded by the VA) Accessible across a wide range of consumer electronic platforms enabling: • Episodic to continuous monitoring • New self-help tools with increased patient engagement in health Wrapped up in a secure, certified VA mobile infrastructure integral with the electronic health record	For patients and carers: • Apps will start to supersede telehealth hub-based services and will encourage people to look at VA certified health information For clinicians: • Full set of mobile Apps to meet their clinical work needs	
eConsultation – GP to specialist consultation, avoiding unnecessary face-to-face contact between the patient and the specialist Can replace up to 30% of traditional face-to-face visits and improve responsiveness	Doctor-doctor consultation via email or video conferencing, using the information in the EHR as a common record Specialty-specific referral guidelines built into the EHR		"This has to be a quick win. Why send a patient for an outpatient appointment, when you have enough information to make a decision based on the evidence in front of you; i.e. diagnostic tests and a good history?" **NHS North delegate**

5. Lessons from the VA – Subjective factors

This section addresses the lessons related the four remaining elements in the 7S framework, namely Shared values, Skills, Style and Staff, which are the subjective factors in the organisation and delivery of successful digital healthcare.

5.1. Shared values

As discussed in the 'Strategy' section of Chapter 4, the VA's mission is highly patient centric. Delegates formed the view that patients are proud to be Veterans, grateful that they are eligible and generally well-motivated to look after their health (perhaps reflecting their military background). They also appreciate that the VA has brought in virtual care to improve their access to healthcare services.

Putting patients at the heart of care

How to truly put patients at the heart of NHS care has been at the centre of discussions for some time. Based on observing patient consultations and interviewing staff, there was consensus amongst Exchange delegates that the VA provides a yardstick for the NHS to measure whether it is truly delivering patient-centred care.

"The root cause of the crisis is that we have put the disease at the centre of care not the person"

Bonnie Graham, Associate Director at the VA

Listening to patients' feedback is one key element in the VA's approach. For example, the VA Washington Medical Centre has bright orange 'Hawkeye phones' around the site. These phones are for anyone – whether patients, visitors or staff – to report a significant issue. In this way, the Centre aims to respond to developing issues immediately.

"The need of the patients is clearly the driving force for the delivery of care not the need of the organisation"

NHS North delegate

The 'Get Well Network' in Martinsburg VA Medical Centre also ensures that their patients' problems are responded to without delay, as it allows real-time feedback. At the Washington VA Medical Centre, staff assess the quality of care every day. For 2 hours a day for 60 working days, a designated group walks the corridors and observes interactions between patients and staff. They have a basic list of behaviours to look for and encourage and, wearing a distinctive jacket, they are easily identifiable by all in the hospital.

The Digital Health Programme encourages patient choice and decision-making. For example, the VA Medical Centre in Minneapolis aims to offer same day care. The patient has the power to choose between same day 'virtual' care (through secure messaging for example) or to wait / travel for face-to-face. Interestingly NHS delegates heard how Veteran peer pressure is creating patient demand for virtual care. They also noted how highly the VA rates the patient experience; for example they can order their meal in hospital online through the 'VA Gourmet' service at the bedside. This has been designed by dieticians to guide healthy eating.

Lessons learned

Local NHS:
Patient feedback systems in the NHS would benefit from emphasis on patients' stories, understanding what matters most to patients, not necessarily 'what is the matter with them'

The NHS could adopt more proactive patient experience model such as in the VA, reacting quicker to patient problems

5. Lessons from the VA – Subjective factors

Self-care

The NHS QIPP programme has put improved self-care at the heart of better management of LTCs. The VA has gone further, with the improvement of self-care engrained into their approach and directly supported through the Digital Health Programme. Many of its modalities explicitly support improved self-care, notably Home Telehealth, some CVT programmes (e.g. weight loss clinics) and Mobile Health. The VA recognises that improved self-care is not just about the digital tools, but is also about providing targeted coaching to promote and teach better self-care.

"All sessions put the patient literally at the heart of decision making regarding their own health...the concept of building health literally around the patient I felt was actually happening"

NHS London delegate

It is also an explicit objective of PACT to help Veterans self-manage their health. NHS delegates to Minneapolis were each presented with a copy of VISN-23's comprehensive and patient-friendly book 'Veterans Health at Home – your lifetime guide to symptoms, solutions and self-care'.

For patients at risk of hospitalisation, the role of the Care Coordinator working with the PACT team is not simply to monitor the patient's condition remotely through Home Telehealth, but also to assess how well the patient is self-caring and to coach them in better techniques. As patients record and access their own weight, blood pressure and other vital signs every day, they come to better understand them and be more engaged.

The use of mobile Apps and MyHealtheVet also means that patients are much more engaged with their own ill health prevention programmes. Patients are encouraged to set their own personal goals and clinicians respect patients' decisions. If a patient's personal goal is to be able to walk to their local shop on a regular basis, they will have to work with their clinician to perhaps decrease their weight and their blood pressure. They work together as a team to decide how to achieve those goals and what care is best for the patient. This has changed the relationship between the clinician and the patient, in a way that brings improved results for patients and greater work satisfaction for staff.

Lessons learned

Local NHS:

Secure messaging, personal health records and accredited health Apps are essential tools in empowering patients and improving self-care

A single record accessible to both clinician and patient supports integration of services and a co-created care plan

The system should support the patient in setting their goals – "What does 'good' look like for you? What would your life look like?"

5. Lessons from the VA – Subjective factors

5.2. Style

Leadership

The VA's leadership has consistently and strongly supported the digital health programmes. Over several years, national leaders have provided the vision, direction, clarity, and continuity of commitment towards the adoption of digital health. NHS delegates heard how in those regions where the uptake of digital health has been highest (such as VISN-23), these leadership characteristics have been strongly replicated locally to ensure the vision of connected care resonates throughout the VA.

The VA has worked hard to design and agree appropriate and coherent organisation and governance structures. At each level in the organisation (whether VISN, medical centre or CBOC) a common structure is defined to put in place designated, trained roles for the deployment and delivery of digital health. Each VISN is expected to have a lead clinician to support the adoption and spread of digital health and follow a well-defined process for pathway redesign and implementation.

The governance follows a systematic approach that can be adapted locally depending on individual organisational requirements and engagement with the management framework. So while national enablers are invested in (e.g. technology platforms, clinical protocols, training centres), implementation is driven locally and depends principally on effective engagement with local clinicians.

Nationally, clearly defined metrics are also identified to measure success and with effective incentives used to influence PACT teams to adopt digital health. The Under-Secretary for Health spoke of a 'freedom to fail' approach, with a budget allocated for ideas where no previous evidence is available, and an organisational willingness to 'give it a go'.

"We need not pilots but purposeful pursuit of new methods of delivery"

NHS England director

In this way, the VA is willing to take risks and accept (limited) double running costs as each new digital health service is introduced and evaluated. If the digital service demonstrably works, the VA is prepared to take the hard decisions to decommission existing services, once the alternative service has been proven. For example, NHS delegates visiting Minneapolis heard that many routine follow-up appointments have been stopped; instead patients are offered same day 'virtual care' access to their PACT teams. On the other hand, if an idea does not work, it is quickly dropped.

Lessons learned

Local NHS:
Creating a digital health-enabled service needs senior leadership commitment, continuity of vision and a willingness to listen to patients and take risks

NHS England:
NHS England needs to present a unified voice to create a common vision on technology's role in delivering person-centred integrated care at scale

5. Lessons from the VA – Subjective factors

Culture change

All NHS Groups were struck by the enthusiasm, pride and passion of the VA staff for their work and towards their patients. A 'no blame' culture was apparent if things do not work out. The sharing of what does not work was seen as important as the sharing of what does.

"The morale of staff is extremely high - 'heroes helping heroes' as the motto says"

NHS Midlands delegate

As digital health at scale is introduced, delegates heard how it requires a further step-change in culture across the organisation. For example, in shifting the place of care to the home or other community setting, technology changes the relationship between clinician and patient, and how staff groups work together.

"What absolutely shines through is the care and kindness from the staff to the patients on the 'other side' of the screen"

NHS North delegate

Delegates on the Exchange Programme felt that VA staff were dedicated to the benefits that digital health can bring to patients and therefore enthusiastic about the cultural changes this would bring to their organisation and way of working.

Lessons learned

Local NHS:
Acknowledgement is needed that service design/redesign comes hand-in-hand with a change-minded culture, listening to patients' needs. Consideration of the integration of appropriate technologies is a contribution to the service design, not a driver

5. Lessons from the VA – Subjective factors

5.3. Skills

Each clinician working at the top of their 'licence to practice'

The VA has an explicit policy for clinicians to aim to practice at the top of their licence. This is driven not just for cost reasons but as a way of engaging and motivating different levels of staff. For example, the VA makes the most of primary care physician assistants (PA) to carry out the more routine tasks. These are workers who are licensed to practice medicine under physician management. Responsibilities vary largely according to training, but may include taking medical histories, performing physical exams, ordering and interpreting laboratory tests and assisting in surgery.

"The success of the VA seems to be based on a mutual professional respect and a commitment to stretch and, to an extent, blur the professional boundaries of employees' role for the benefit of patients"

NHS delegate

Digital health technology provides a useful reinforcement of this practice. For example, patient secure messages are sent to the PACT as a team, with the response often being from a team member other than the doctor. In the case of CVT, a nurse or technician will normally be present with the patient at the local outpatient clinic. This individual will take any point of care testing and physical exam under instruction remotely from the doctor at the specialist centre and will generally assist the patient during the consultation. If a further specialist opinion is needed, then another doctor can be bridged in through the CVT facility.

This saves doctors' time, allowing them to see more patients, and allow nurses to work to the top of their licence. Crucially, it is beneficial for the patient who has to travel the minimum distance possible and still receives high quality care from the appropriate specialist.

One of the key successes of the VA's Home Telehealth's programme is that it has been run by nurses. This makes it an efficient use of resources and has allowed escalation processes to be clear. It also means that the nurses are satisfied, engaged and motivated by the opportunity to work on a daily basis to the top of their ability. Staff in the VA are empowered to make their own decisions because they are all well trained and well supported.

Lessons learned

Local NHS:
Whilst many staff in the NHS are empowered to make their own decisions, the NHS needs to make sure that this is encouraged and nurtured and that over-regulation does not stifle innovation. Learning from the Exchange suggests strongly that clarifying nursing roles is crucial to the delivery of high standard, efficient care and staff satisfaction

Training

As expected from being the largest medical education and health professions' training provider in the USA, the importance of training is recognised and reinforced throughout the VA organisation. Indeed, delegates heard how the innovative digital health environment has helped the VA remain a premiere institution for new clinicians to train in.

5. Lessons from the VA – Subjective factors

In the case of the digital health programme, learning from the Exchange demonstrates how important training is to achieve an effective, stable and consistent level of service. The VA has adopted a standardised approach to training based around a set of clear competency frameworks. This has been a key factor in the success of its wide scale implementation.

Part of the successful approach has been to create an infrastructure of nationally managed training and education centres, one for each major digital health modality. For example, the Sunshine Training Centre in Florida is responsible for training on Home Telehealth. Its training programmes include case management, motivational interviewing and coaching of patients, in Home Telehealth assessments and reassessments, and on how to develop and review treatment plans. The training centre also provides ongoing mentoring, consultation and performance support to help with organisational change.

New Care Coordinators (CC) attend online education delivered by the centre and also have hands-on training at the local site, working with an experienced CC who acts as their mentor. The basic curriculum consists of two to four weeks of hands-on training locally and 12 hours training online.

The centre works together with vendors to deliver training on new devices and annual updates on older systems. In addition there is compulsory annual training for all those working in digital health conducted via online live meetings.

No matter what their job role, all staff have local training support available, which is not just technical but cultural, e.g. learning new etiquette for use of CVT with patients. The combination of structured training and designated local roles ensures staff are available at each site who are experts in and can oversee the digital health programmes. As the use of digital health is now an integral part of most patient pathways, the ability to use and apply technology has become one of the criteria to recruit staff to the VA.

Lessons learned

Local NHS:
Using new technology may not be intuitive for many of the NHS workforce, training needs to be inclusive: initially to embed the changes required, thereafter for the ongoing support and development of the use of technology; to ensure that all staff understand support new digital health programmes; and tailored to the relevant professional elements of the workforce

The NHS should also consider appointing and training designated staff such as digital co-ordinators to manage the digital health system

Training is instrumental to get an effective, stable and consistent level of service with appropriate audit data to inform service delivery and decision making

NHS England:
The core competencies for digital health need embedding into the curricula of doctors, nurses and allied health professionals, and relevant local authority staff. NHS England needs to think about how it commissions such undergraduate and post graduate training. It needs to discuss with and collaborate with the deaneries of medical and nursing schools about how digital health is to be included in the workforce

5. Lessons from the VA – Subjective factors

Improved Shared Learning

The VA shows the extent of the positive impact that shared learning can have on the successful implementation of a widespread digital health programme. Within the VA itself there have been a number of exchange programmes, with staff visiting sites in different VISNs to learn from each other. Key to the success of the VA's shared learning is that it is not only medical clinicians who share information with each other but staff share learning across disciplines. The VA also has an open attitude to learning from other health systems internationally, routinely benchmarking their excellence against other leading health systems, hence their interest in this Exchange.

Lessons learned

Local NHS:
Shared learning will be essential for the NHS in scaling up telehealth programmes and avoiding duplicated effort. Academic Health Science Networks (AHSN) will have a critical role in facilitating this sharing

NHS England:
Some national oversight of digital health is needed in terms of commissioning, procurement and best practice adoption

5.4. Staff

The right roles

The successful implementation of digital health in the VA has been dependent on ensuring that the right staff are available to deliver the mission, at the right grade and of the right specialisation.

The drive for the digital health programme sits closely with the implementation of PACT. As introduced in Chapter 4, PACTs provide patient-centred primary care services to patients in their localities. Care is managed by primary care providers with the active involvement of other clinical and non-clinical staff. Each team is made up of a lead clinician such as physician, physician assistant or nurse practitioner, a nurse care manager, and clerical and administrative assistants. The PACT model allows for clearly defined and non-hierarchical roles amongst health and social care workers, establishing new service boundaries. It is a smarter way of working by empowering staff to confidently make decisions, decreasing bureaucracy and motivating staff to work to the top of their licence.

As well as reworking existing roles through PACT, the VA's has remodelled and retooled their workforce for digital health based services. New critical roles have been defined include Care Coordinators (CC), Master Preceptors, Telehealth Coordinator Technicians (TCT) and programme support workers.

The role of the CC starts following a PACT referral of a patient to Home Telehealth. Typically the CC is expected to: assess which type of equipment the patient needs; liaise and train the patient (generally remotely); monitor and triage patients' daily readings remotely; order / refer a patient for additional care services; and provide general tele-coaching primarily about lifestyle and behaviour. Nurses with previous experience in home care have been found to be most suited to the CC role, but some CCs were formerly dieticians or social workers.

Locally based TCTs (one per clinic, two per medical centre) are expected to train other staff in using technologies, under support from the limited number of Master Preceptors who are the experts in each modality. Delegates observed TCTs supporting tele-retinal screening, tele-dermatology and tele-wound care.

5. Lessons from the VA – Subjective factors

Lessons learned

Local NHS:
The effective use of digital health requires a different type of nursing support to traditional primary care and community services

NHS organisations should not underestimate how much time it takes to redesign care pathways, and identify and train up staff into their new roles

NHS England:
Consider introducing new job roles to support care coordination and delivery of new digital health solutions

Consider how to incorporate the PACT approach into NHS models, improving coordination for patients, leading to better outcomes, while empowering staff

Clinical champions

One approach the VA use to encourage staff motivation towards digital health is through clinical champions. Clinical Champions in the VA have the designated role of recruiting other clinicians to refer patients to the digital health programmes. They do this by providing leadership locally and encourage others to use the service. In this capacity they support staff working on digital health modalities. These champions must already be convinced of the benefits of digital health and be happy to share their positive experience and promote the use of digital health to their peers.

Lessons learned

Local NHS:
Each locality needs a clinician to champion digital health and share success stories with others. The champions from the NHS-VA Exchange programme can fulfil these roles

NHS England:
New champions for digital health will come out of this Exchange, providing a strong support network across England

6. The Leadership Exchange Programme

In this chapter we relate the learning of the VA Exchange back into actions being pursued at both national and local levels. The next steps for the Exchange Programme are also outlined.

6.1. Impact at a National Level

Coinciding with the launch of the Exchange Programme, NHS England assumed responsibility from the Department of Health for the TECS (3ML) programme in April 2013. Since then it has worked with key stakeholders to create a revised vision statement for the programme, realigning its delivery objectives with the integrated care, seven day services and technology strategy agendas. TECS is now intended to support service integration, empowering patients to better self-manage their conditions underpinned by the use of technology. Nationally, a key focus is how to commission, procure and measure improved, integrated services enhanced by digital health technologies.

In addition to TECS, NHS England have produced or facilitated other guidance and incentives to drive the use of technology. Their 'High Impact Innovations' are incentivised through CQUIN payments which are only paid to providers who implement new schemes. As well as TECS, the technology requirements are:

- ***Digital First*** [13]- on using technology to improve quality, convenience, costs and flexibility and
- ***Innovation Vault*** [14] – potential innovations aligned with the five different national domain ambitions

Other drivers for the deployment of technology enabled care include:

- ***AnyTown*** [15] - modelling toolkit to improve quality and reduce finance
- ***Safer Hospital, Safer Wards Fund*** – for NHS Trusts to support the widespread adoption of modern, safe electronic record-keeping
- ***Nurse Technology Fund*** [16] - to support nurses, midwives and health visitors to make better use of digital technology in all care settings
- ***Prime Minister's Challenge Fund*** [17] - applications include:
    - Greater use of technology to provide alternatives to face to face consultations e.g. via phone, email, webcam and instant messaging
    - Greater use of patient online services including online systems of patient registration
    - Greater use of telecare and healthy living apps to help people manage their health without having to visit their GP surgery as often
    - Flexible access through emails, Skype and phone consultations
    - Easier online registration and choice of practice

13. *http://digital.innovation.nhs.uk/pg/cv_content/content/view/32200 Accessed 7.2.14*
14. *http://innovault.innovation.nhs.uk/pg/dashboard Accessed 7.2.14*
15. *http://www.england.nhs.uk/2014/01/24/any-town/ Accessed 7.2.14*
16. *http://www.england.nhs.uk/ourwork/tsd/sst/nursing-technology-fund/ Accessed 7.2.14*
17. *http://www.england.nhs.uk/2013/12/20/access-to-services/ Accessed 7.2.14*

6. The Leadership Exchange Programme

- ***Innovation Fund*** [18] – a regional fund supporting and promoting the adoption of innovation and the spread of best practice across the NHS. It is hosted by the 'Colab' platform which also allows users to exchange ideas, share proposals and set challenges.

The scope of TECS covers people living with long term conditions, addressing all levels of the Kaiser Triangle, from complex co-morbidities through to prevention. From the technology perspective, the programme now covers the assistive technologies of telehealth, telemedicine, telecoaching and telecare. It also addresses self-care mobile technologies including the use of NHS Apps if they have been commissioned and are embedded within a wider service.

"Digital health is not a side activity but is integral to culture change and transformation"

NHS delegate

It is evident that the VA experience was pivotal in NHS England's realignment of TECS (then 3ML) to support integrated care and the emphasis on enabling improved self-management of Long Term Conditions. Likewise, Health Education England have noted and are considering the significant training and workforce implications associated with effective deployment of technology enabled care services.

Supported by Rapid Design Groups working in four key areas, NHS England has committed to produce a whole system Technology Enabled Care Services Improvement Plan for 2014-17 by the start of 2014-15. These are:

1. ***Improving information governance***
2. ***Developing commissioning skills and capability***
3. ***Improving procurement levers and frameworks***
4. ***Developing measurement and metrics***

Key principles identified by Exchange delegates to speed up the pace and spread of digital health include:

- NHS England needs to set the framework for the system as a whole to deliver the vision for patient to receive the 'right care, in the right place, at the right time'.
- Some element of system coordination can support rolling out innovation at scale, avoiding yet more small pilot projects, whether by commissioners working together or enabled through partnerships of providers.
- Creating the right investment climate is key, for example recognising that technology enabled care services is a major transformation requiring scalable platforms to be in place – with expectations set on how quickly the return on investment can be gained.
- IT systems need to be integrated to make the most of information from assistive technology for the patient.
- Ensuring incentives are aligned, switching where appropriate to reward prevention and self-care and away from the current episodic, fragmented care of patients.

18. https://nhs-ihw-colab.induct.no/maya/companymain.aspx?document_name=Funding%20Main%20Page Accessed 7.2.14

6. The Leadership Exchange Programme

6.2. Impact NHS Response and Actions at a Local Level

Case Study:

Yorkshire Ambulance Service's medical director Dr Philip Foster saw the potential of digital health in helping to join up care better county-wide. He has helped to conceive the Yorkshire Digital Health Partnership as a way to drive widespread adoption across many providers who have relevant but varied capabilities in digital health, including telemedicine, telecoaching and telehealth. The mission statement of the new partnership has been inspired by the VA's for "right care, right place, and right time".

All local delegates from across the four regional groups visiting the VA were expected to return as champions for digital health reflecting the impressions and lessons they had learned while visiting the VA. A series of regional events were facilitated by 2020health in the summer and autumn 2013 at which NHS and Local Authority delegates reported back on a wide spectrum of follow-up activities, for example:

- Developing or refining existing strategies to deliver technology enabled care services to patients across local communities. These have included both county-wide initiatives, involving a wide collation of providers, through to individual Trust strategies, and in some cases linked to the Integrated Care Pioneer projects. (Delegates commented that the VA experience had helped them in conveying an overall vision of improved patient care, providing a sense of how it could work on the ground, and helping them with 'hearts and minds' dialogues.)

Case Study:

Somerset GP Dr Matthew Dolman presented a Telehealth Strategy Paper to his CCG Board and gained support for a five year digital strategy. A shared patient record, a focus on where telehealth can deliver efficiencies and recognition of the importance of patient awareness and use of their own devices were all included. Being a part of the Leadership Exchange and seeing technology in action was critical to this achievement.

- Initiating new projects to test out and learn about the clinical viability of certain technologies observed in the VA, in a range of settings including acute, primary and prisons, to the benefit of patients. These technologies span across the telemedicine, secure messaging and SCAN Echo modalities. In another case, the viability of the VA's renowned PTSD App to support NHS patients with this condition is being appraised.

6. The Leadership Exchange Programme

Case Study:

Tony Bruce (CCG Accountable Officer) and colleague Liz Gunn returned to East Staffordshire from the VA and realised they existed in a digital desert. Having seen the potential for technology to help people with long term conditions (including helping themselves), they were determined to incentivise 'digital first' locally as the norm for the future and develop a whole systems collaborative approach. Drawing on their local colleague Phil O'Connell's expertise in secure messaging in the form of 'Flo', they have devised an easy-to-adopt strategy consisting of using Flo between professionals and patients, between primary and secondary care and promoting easy to use apps. This will be a key part of helping address increasing levels of population need, recognising that the traditional nursing models are not sustainable. The Leadership Exchange gave Tony and Liz the confidence to present new digital models of working not only to the CCG but also to the Local Authority, provider organisations and the local NHS Hospital Trust. They recognise it is a significant culture change, but essential for delivering high quality care for patients.

- One hospital Trust has piloted new, more real-time patient feedback systems based on what they observed of the use of Hawkeye in Washington.

- In many cases, the dialogue and cross-learning between NHS group delegates has borne fruit. For example several new Simple Telehealth projects have been initiated in different localities to deliver new remote monitoring services to patients. In another case, a project has been initiated to enable the sharing of ECGs for patients with suspected heart attacks between ambulance crews and local hospital trusts.

Case Study:

Diabetes specialist at Sandwell and West Birmingham Hospitals Trust, Pete Davies, returned from the VA in Washington and asked himself just how much of what he'd seen might already be possible within the NHS. With the support of his trust he has been modelling ways of becoming paper-lite and taking a digital-first approach. This has resulted in productivity gains with e-letter production using voice recognition and use of Simple Telehealth for patient BP monitoring and medication reminders. He and his team are establishing standards for using video-teleconferencing technology for virtual consultations. Next, he plans to emulate the VA's highly successful 'SCAN-ECHO' programme, which uses video-teleconference 'coaching' to support the development of new capabilities in primary care teams.

- Some delegates have applied their VA learning in shaping and supporting their organisations bids for central funding support through the 'Safer Care, Safer Hospitals' and the Nursing Technology Funds.

Case Study:

A prison telehealth project is being managed by a Darzi Fellow at the Whittington Hospital in North London. It has identified ambulatory care, out of hours advice to prevent emergency admissions and support discharge of patients back to prison reducing length of stay as services that can be provided remotely. The infrastructure is being put in place and the project aims to pilot first patient April 14.

6. The Leadership Exchange Programme

- Delegates have shared their VA experience and learning at a range of local fora, including CCG and Health & Wellbeing Boards, regional networking events, and nationally via webinars.

Case Study:

The team at the VA were very impressed with Phil O'Connell's secure messaging system 'Flo'. This 'simple telehealth' solution was Phil's idea to find a low cost way to help clinicians increase the quality of their care whilst helping patients to help themselves. The process enables the safe exchange of information between professionals and patients, as well as the automated analysis of patient uploaded data. Flo are now collaborating with the VA in a TECS partnership to further explore and develop the use of messaging in healthcare across the NHS and VA.

6.3. Next Steps for the Exchange

The following objectives have been set by way of next steps for the Exchange Programme in 2014:

- To include the Exchange delegates in the TECS programme as subject matter experts, collectively using their expertise and experience to shape national strategy and policy direction to provide improved integrated care
- To be a collective of champions whom NHS England can turn to, to test ideas and new ways of working
- To continue the partnership via virtual working with VA colleagues
- To continue to share achievements and challenges with NHS colleagues via the NHS England TECS Stakeholder Forum
- To continue to capture learning and on-going implementation of technology enabled care services, via action learning sets for each regional group, virtually and face to face
- To look at future visits / exchanges that will build upon and lead to adoption of digital health at scale
- To host VA colleagues as they return to the NHS and continue to share international best practice, as part of the wider US-UK governmental bi-lateral agreement for the use and sharing of health IT information and tools, signed on 23 January 2014

Case Study:

Council Assistive Technology lead Jon Wilkie and Community Matron Helen Weston returned from visiting the VA in Minneapolis inspired by the potential of digital health. Their ideas helped with the development of the 3 Million Lives board to promote the use of technology throughout Eastern Cheshire. Their ideas also helped to design new CQUIN and DES incentives for clinicians to engage more with the technology. Following this work, patients with long term conditions in Eastern Cheshire have access to Simple Telehealth, internet based support for mental health issues and a trial is scheduled to start imminently of video-conferencing triage for people living in local care homes who may need acute medical care.

Appendix A: List of NHS Participants

This appendix lists the participants who visited the VA on the four trips. Each of the local participants is a designated champion for digital health in their community:

NHS South:

Name	Position	Organisation
Ann Anderson	Director of Clinical Commissioning Development	Somerset Clinical Commissioning Group
Dr Tamsyn Anderson	GP Principal Newquay Health Centre	Kernow CCG
Tony Bruce	Chief Accountable Officer	East Staffordshire CCG
Dr Matthew Dolman	GP Clinical Lead	Axbridge and Wedmore Practice, Somerset CCG
Elizabeth Gunn	Clinical and Quality Lead	East Staffordshire CCG
Jo Harding	NHS-VA Exchange Programme Lead and Associate Director, Transformation	Staffordshire and Stoke on Trent Partnership Trust
Dr Anthony Smith	Consultant in Anaesthesia and Intensive Care Medicine	Yeovil District Hospital NHS Foundation Trust
Dave Tyas	Ann	Peninsula Community Health
Jacquie White	Deputy Domain Director – Long Term Conditions	NHS England
Phil Molyneux	(Facilitator)	2020health

NHS North:

Name	Position	Organisation
Dr Philip Foster	Clinical Director, NHS 111 and Urgent Care	Yorkshire Ambulance Service
Mark Gretton	Lecturer in Nursing and Technology Enhanced Care	Hull University
Prof Robert Harris	Director of Strategy	NHS England
Jo Harding	NHS-VA Exchange Programme Lead and Associate Director, Transformation	Staffordshire and Stoke on Trent Partnership Trust

Appendix A:
List of NHS Participants

NHS North: (continued)

Name	Position	Organisation
Dr Maurice Smith	Board Member/ Executive Lead for long-term conditions and integrated care	Liverpool CCG
Susan Summers	Head of Long Term Conditions	NHS Commissioning Board
Helen Weston	Community Matron	East Cheshire NHS Trust
Jon Wilkie	Project & Performance Manager	Cheshire East Borough Council
John Cruickshank	Consultant Director (Facilitator)	2020health

NHS Midlands and East:

Name	Position	Organisation
Jane Barnacle	Director of Patients and Information	NHS England (London Region)
Jayne Birch-Jones	Assistive Technology Programme Manager	Nottinghamshire Healthcare Trust
Rachel Cashman	Senior Responsible Officer, TECS	NHS England
Phil O'Connell	Global Project Lead (Simple Telehealth)	Stoke CCG
Dr Peter Davies	Consultant in Diabetes and Endocrinology	Sandwell and West Birmingham Hospitals Trust
Jim Ellam	Commissioning Manager	Joint Commissioning Unit Staffordshire County Council
Andy Evans	Managing Director	NHS Great Yarmouth and Waveney CCG
Dr Paddy Hannigan	GP & Senior Partner/ CCG Governing Board Memer and Lead for IT	Holmcroft Surgery/ Stafford and Surrounds CCG
Jo Harding	NHS-VA Exchange Programme Lead and Associate Director, Transformation	Staffordshire and Stoke on Trent Partnership Trust

Appendix A: List of NHS Participants

NHS Midlands and East: (continued)

Name	Position	Organisation
Dr Mo Huda	GP and Senior Partner/Primary Care Development Lead	Aelfgar Surgery/ Stafford and Surrounds CCG
Charles Huntington	Programme Manager	Directorate of Adult Health and Social Care, Worcestershire County Council
Anne Marlow	Director for Innovation	Health Education England
Dr John Stammers	Chair and Clinical Lead	NHS Great Yarmouth and Waveney CCG
Angela Thompson	Director of Nursing and Patient Experience	East and North Herts NHS Trust
Julia Manning	Chief Executive (Facilitator)	2020health

NHS London:

Name	Position	Organisation
Dr Greg Battle	Medical Director	Whittington Health
Victoria Corbishley	Head of Change Management	NHS England
Carol Gillen	Director of Operations	Whittington Health
Jo Harding	NHS-VA Exchange Programme Lead and Associate Director, Transformation	Staffordshire and Stoke on Trent Partnership Trust
Matthew Hodson	Nurse Consultant - COPD	Homerton University Foundation Trust
Dr Sian Howell	Clinical Lead	Southwark CCG Governing Body
Dr Martin MacShane	Director Domain 2 – Medical Directorate	NHS England
Eileen Sutton	Assistant Director of Urgent Care	NHS London
Helen Taylor	Head of Pharmacy	Whittington Health
Jane Wells	Service Director, Adult Community Services	Oxleas NHS Foundation Trust
Gail Beer	Director of Operations (Facilitator)	2020health

Appendix B: NHS visit itineraries

NHS Group	VA Site	Key topics covered
NHS North and NHS South	VA HQ and VISN-23 leadership (in person or by VTel)	The vision for Digital health in the VA Overview of VA Digital health Services, Patient Aligned Care Teams (PACT), the Cultural transformation of the VA Mobile applications
	VISN-23 leadership and the telehealth coordination team	Approach and implementation of digital health in the VISN Mental health services via digital health My Healthe Vet
	Minneapolis VA Medical Center The Minneapolis VA Medical Center (VAMC) is a teaching hospital which provides a full range of patient care services with state-of-the-art technology, as well as education and research. Primary care, tertiary care, and long-term care are provided in the areas of medicine, surgery, psychiatry, physical medicine and rehabilitation, neurology, oncology, dentistry, geriatrics and extended care.	Minneapolis Home Telehealth Program Tele-ICU Speciality Clinical Video Teleconferencing Tele-retinal imaging Tele-audiology ICT and technology challenges
	Medical Centre, St Cloud MN	Clinical Video Teleconferencing Amyotrophic lateral sclerosis (ALS) patients in community living centre
	Community Based Outpatient Clinic, Maplewood, MN	V-Tel with Telehealth Service Met with patients to discuss Home Telehealth, Clinical Video Teleconferencing and SF

Appendix B: NHS visit itineraries

NHS Group	VA Site	Key topics covered
NHS Midlands and East and NHS London	VA Head Quarters, Washington DC	The vision for Digital health in the VA Overview of VA Digital health Services, Patient Aligned Care Teams (PACT), the Cultural transformation of the VA and of VA Scan-ECHO Speciality Care Access Network
	Baltimore VA Medical Centre The acute medical and surgical care facility for the VA Maryland Health Care System. It offers a full range of inpatient, outpatient and primary care services.	Patient Aligned Care Teams (PACT) Digital health in the home and in a clinical setting Vocera system -provides voice-driven, safe, hands-free communication at high speed Room Service Program
	Martinsburg VA Medical Centre The acute medical and surgical care facility serving 126,000 veterans in West Virginia, Maryland, Virginia, and Pennsylvania.	Telehealth Get Well Network Demonstration Community Living Center / Palliative Care Unit Home Base Primary Care Women's Domiciliary Heros Health and Wellness Center Patient Aligned Care Teams (PACT) Use of MyHealtheVet

Appendix B: NHS visit itineraries

NHS Group	VA Site	Key topics covered
NHS Midlands and East and NHS London	Kaiser Permanente's Center for Total Health, Community Resources and Referral Centre (CRRC)	Interactive discussions about the future of healthcare and digital health technologies
	Washington DC VA Medical Center A tertiary care teaching facility, and one of the most dynamic facilities in the VA system. It provides acute general and specialized services in medicine, surgery, neurology and psychiatry, as well offering nursing home care unit treatment.	Blue Button Program - allows Veterans to access and download their information into a simple text file or PDF Meals by the Bedside EHRs 'Hawkeyes Program' – a programme which manages complaints in real time Truth Point Survey Demonstration – a programme which improves the quality through direct observation

Appendix C: Glossary and definitions

UK Terms

3ML	**Technology Enabled Care Services TECS.** A national initiative to drive the widespread NHS adoption of telehealth and telecare, launched in January 2012.
A&E	**Accident & Emergency.** A medical treatment facility which specialises in the acute care of patients. There is no need to book an appointment. The emergency department is located in a hospital or other primary care centre.
CCG	**Clinical Commissioning Group.** A group of General Practitioners who are responsible for commissioning local health services in England. They work with patients, healthcare professionals and local communities. This role was outlined in the 2010 White paper and from April 2013 they will be fully operational and take over from the old commissioning bodies, Primary Care Trusts.
CQUIN	**Commissioning for Quality and Innovation.** A payment framework which rewards excellence by linking income to the achievement of local improvement goals. It was launched in 2009.
DH	**Department of Health.** A department of the United Kingdom Government which provides strategic leadership for public health, the NHS and social care in England.
(NHS) FT	(**NHS**) **Foundation Trust.** Bodies of the NHS which have earned a significant amount of independence from the DH and local regulating bodies, SHAs. The purpose of their independence is to create a more locally, and patient, led NHS. In 2013 there are 145 FTs, including acute, mental health, community and ambulance trusts.
GP	**General Practitioner.** A primary care provider who provides on-going care to cover a variety of medical problems in all patients. Their work includes referrals to specialists.
NHS	**National Health Service.** The umbrella term for the four publically funded health care systems in the UK which provide services free at the point of use.
NHS England	**NHS England.** An executive non departmental body, independent to the Government, whose main aim is to improve the health outcomes for people in England.
QIPP	**Quality, Innovation, Productivity and Prevention.** Launched at the end of 2009, QIPP's purpose is to improve the quality and delivery of NHS care while reducing costs to make £20bn ($30bn) efficiency savings by 2014/15. There is a wide variety of QIPP initiatives, some 100 separate ones have been tested out and evaluated within the NHS during the last three years.
YOC	**Year of Care.** The Year of Care (YOC) tariff strategy targets patients with long term conditions who require an integrated approach to care. The YOC programme has used risk profiling (low, medium and high) in tariff-setting deriving from a holistic approach to assessment, identifying goals and outcomes rather than breaking down costs associated with each specific long term condition.

Appendix C: Glossary and definitions

US Terms

CBOC	**Community Based Outpatient Clinics.** A VA-operated, funded or reimbursed health care facility that is located at a different site from the parent medical facility.
CAN Score	**Care Assessment Needs Score.** A tool for primary care teams to determine from a holistic point of view whether a is at risk, and who needs care management. This score is based on a sophisticated statistical prediction model and data from multiple sources to determine the probability of a future event such as admission or death within a specified time frame.
CC	**Care Coordinators.** Usually nurses or social care workers who actively coordinate the provision of health services from a central facility to patients living at home through the use of technology
CCHT	**Care Coordination/Home Telehealth.** A national home telehealth program first introduced in 2003. Its purpose is to coordinate the care of Veteran patients with chronic conditions and avoid their unnecessary admission to long-term institutional care. It is now called Home Telehealth (HT).
CLCs	**Community Living Centres.** Skilled nursing facilities, often referred to as nursing homes, to Veterans with chronic stable conditions such as dementia, those requiring rehabilitation or those who need comfort and care at the end of life.
CVT	**Clinical Video Teleconferencing.** Real-time videoconferencing between VA medical centres and CBOCs that replicates face-to-face consultations between patient and provider, or provider and provider.
HT	**Home Telehealth.** See CC/HT.
SFT	**Store and Forward.** Acquisition, storage and forwarding of clinical images to experts for review. Currently extensively used for teleretinal imaging and teledermatology.
PA	**Primary Care Physician Assistant**
PACT	**Patient Aligned Care Team.** The VA's version of primary care delivered through a patient centered medical home mode, with every patient is assigned to a PACT team.
TH	**Telehealth.** Uses various point-of-care technologies to monitor a patient's physiological status and health conditions. When combined with personalised health education within a chronic disease management programme, it can significantly improve an individual's health and quality of life.
Tele - ICU	**Tele-Intensive Care Unit.** The provision of high quality intensive care through the use of specialised CVT, in particular a two- way camera as well as additional technology. VA intensivists have found they can provide higher quality intensive care and eases the burden on staff.

Appendix C: Glossary and definitions

US Terms

Tele-radiology	**Remote analysis of radiology and nuclear medicine images**
PHR	**Personal Health Record.** An online record owned by the patient, allowing them to add and organise personal health information, as well as to integrate health records from different providers, and share this with other individuals and institutions at will.
VA	**VA.** US Department of Veterans Affairs, provides health care, benefits and burial services to Veterans, and in some instances their dependents
VHA	**VHA.** US Veterans Health Administration, responsible for health care services within the VA.
VistA	**Veterans health information systems and technology Architecture.** This platform supports the VA's EHR (EHR), which was developed in close consultation with 'physician champions' to allow health professionals instant and remote access to a patient's medical files, whether at clinic or hospital bedside.
VISN	**Veterans Integrated Service Networks.** Some covering vast regional areas, but each able to respond with greater autonomy to local needs.

General

BDOC	**Bed days of care.** The number of days a patient is confined to a bed and in which the patient stays over night in hospital.
CHF	**Congestive Heart Failure.** When the heart fails to pump blood around the body to a sufficient level. Main symptoms include breathlessness, extreme tiredness and weakness, swelling in the legs, ankles and feet.
CIO	**Chief Information Officer.** Within healthcare settings, the CIO provides technology vision and leadership in the development and implementation of the health information technology programme.
COPD	**Chronic Obstructive Pulmonary Disease.** A collection of lung diseases including chronic bronchitis, emphysema and chronic obstructive airways diseases, increasing breathlessness, a persistent cough with phlegm and frequent chest infections.
EHR	**EHR.** A digital record, sometimes referred to as an Electronic Patient Record (EPR), which is a systematic collection of information about an individual patient. They can include medical history, allergies, prescribed medicines, test results and radiology images amongst other data.
EPR	See EHR
FTE	**Full-Time Equivalent.** A measurement of the workload of an employed person, or student, and allows workloads to be comparable.

Appendix C: Glossary and definitions

General

ICT	**Information and Communications Technology.** Technology that provides access to information through telecommunications, including the Internet, wireless networks, telephones and mobile phones.
ICU	**Intensive Care Units.** A specialised department in a hospital which provides intensive care to patients with the life threatening injuries and illnesses and which need constant monitoring, specialist equipment and medical staff specialised in providing intensive care.
LTC	**Long term condition.** A condition that cannot be cured but can be managed through medication and/or therapy. These include diabetes, asthma and coronary heart disease.
LPN	**Licensed Practice Nurse.** A nurse who cares for people who are ill, injured, or disabled under the direction of registered nurses and physicians.
PTSD	**Post Traumatic Stress Disorder**

Learning from Connections:

Lessons from the NHS-VHA Leadership Exchange on the adoption of digital health

I am delighted to continue to capture learning to support improvements in the care we provide for our patients and the population we serve as part of the on-going Exchange Programme with the Veterans Health Administration. The most recent exchange has been focused around how technology is used to support Technology Enabled Care Services (TECS) and this publication demonstrates many examples of where we are implementing change as a result of shared learning and provides insight to what has already been achieved and what is possible through collaboration, champions and enthusiasm.

Joanne Harding
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