

Personal Digital Care

Using technology enabled care to transform our nation's health and create UK wealth

"New technology can save the NHS. The challenge is using innovation and new technologies to address the equally important issues in relation to helping elderly, often less mobile, citizens access key public services, particularly healthcare."

GEORGE FREEMAN, PARLIAMENTARY UNDER SECRETARY OF STATE FOR LIFE SCIENCES, BIS & DH

November 2015

Acknowledgements

This paper has been written by techUK's Health and Social Care Programme, led by Natalie Bateman, Head of Health and Social Care.

We wish to thank the Health and Social Care Council for their contributions to the paper, in particular, Adrian Flowerday (Docobo), Alison Rogan (Tunstall), Andrew Hartshorn (Methods Advisory) and Ian Denley (Shearwater Systems).

Contents

Introduction	01
Chapter 1. What is Personal Digital Care?	03
Chapter 2. What value does it offer and to whom?	06
- Patients and the public	06
- Families and carers	08
- Health and care professionals	09
- NHS and Local Authorities	10
- UK economy	11
Chapter 3. What are the barriers to widespread adoption?	12
Chapter 4. Overcoming the barriers - what needs to happen next?	14
Conclusion	17
References	18

Introduction

OBJECTIVES

This paper aims to raise awareness of the value that can be achieved from the use of Personal Digital Care. It illustrates how technology can empower and enable patients, carers and families to take greater control of their health and care. And in turn demonstrates how it helps the NHS, Local Authorities and the professionals that work in these organisations meet the challenges in service delivery caused by an increasing population and ageing population, poor health and wellbeing, and significant financial constraints.

The paper looks at the key barriers to widespread adoption and provides practical solutions on overcoming these challenges. It also provides 'real world' examples of leading practice that demonstrate the benefits already being delivered within England.

A TECHNOLOGY REVOLUTION

A revolution is reshaping industries across the globe. The advent of smartphones and communication technologies has transformed the way services are delivered in most industries, from airlines and taxi services to fast food and book sales, and how they are consumed by customers. This revolution is starting to make its impact in health and social care. Mobile devices, wearable technologies, telehealth and telecare are empowering patients, driving down health and social care costs, and improving patient outcomes. But are the NHS and Local Authorities ready to fully embrace this transformation, given that since its inception the health and care system has largely been structured and governed on improving the delivery of care by professionals and less on the person's expectations, experience and outcomes?

We all recognise the global need for improving productivity in our health economies. The 'conventional norms' of health and social care delivery are being challenged by rising demand, ageing populations (partly caused, ironically, by advances in healthcare and medication), unhealthy lifestyles and economic necessity. Increasing the scale of health and social care systems, as currently configured, is unaffordable, therefore innovation is and should be seen as the enabler to transformational change. Moreover citizens and patients expect our health and social care providers to use technological innovation to improve the way we engage, access and consume health and care services.

Healthcare has an imperative to change, to catch up with the rest of the world, but also because of brutal, financial necessity. We have seen banks and airlines save significant amounts by empowering customers to 'self-serve'. Health and care will need to do the same. And just as the roles of bank tellers and airline check-in staff has changed, so must the roles of those who deliver care - it won't remove the need for professionals, it will liberate them. Self-care through the use of technology will displace administrative tasks, which in turn will free-up the time they can spend with their patients and clients. Technology may restore a true sense of vocation to those whose professions have been blighted by cumbersome processes and record keeping.

The landscape is changing. Heart rates and blood pressure are no longer just a matter for the doctor; patients know them and monitor them too. Similarly online information has given patients the ability to become more knowledgeable in their own conditions, and has raised awareness of new therapy options. Data sharing between health and care professionals and patients/clients is leading to a shift in the balance of power, and this is a new paradigm that the NHS and Local Authorities must learn to embrace.

POLICY CONTEXT

Government is embracing this change. In the last 12 months two influential reports have set the tone for how technology and information can transform the way health and care is delivered in the next five years. Simon Stevens' Five Year Forward View calls for the sector to "exploit the information revolution"² whilst the National Information Board's Personalised Health and Care 2020 has set out clear roadmaps for using data and technology to transform outcomes for patients and citizens³. Most notably the papers recommend:

- **The personalisation of care**, including individual wellbeing, self-care, personal commissioning and, in the longer term, the impact of genomics;
- **The development of new models of care and integration of services**, particularly across the divides between family doctors and hospitals, physical and mental health, and clinical and social care, with the objective of providing better, safer services more efficiently;
- **More effective management of service access**, through the provision of alternative sources of information, supporting self-care and better signposting to direct individuals who need professional care to the appropriate service.

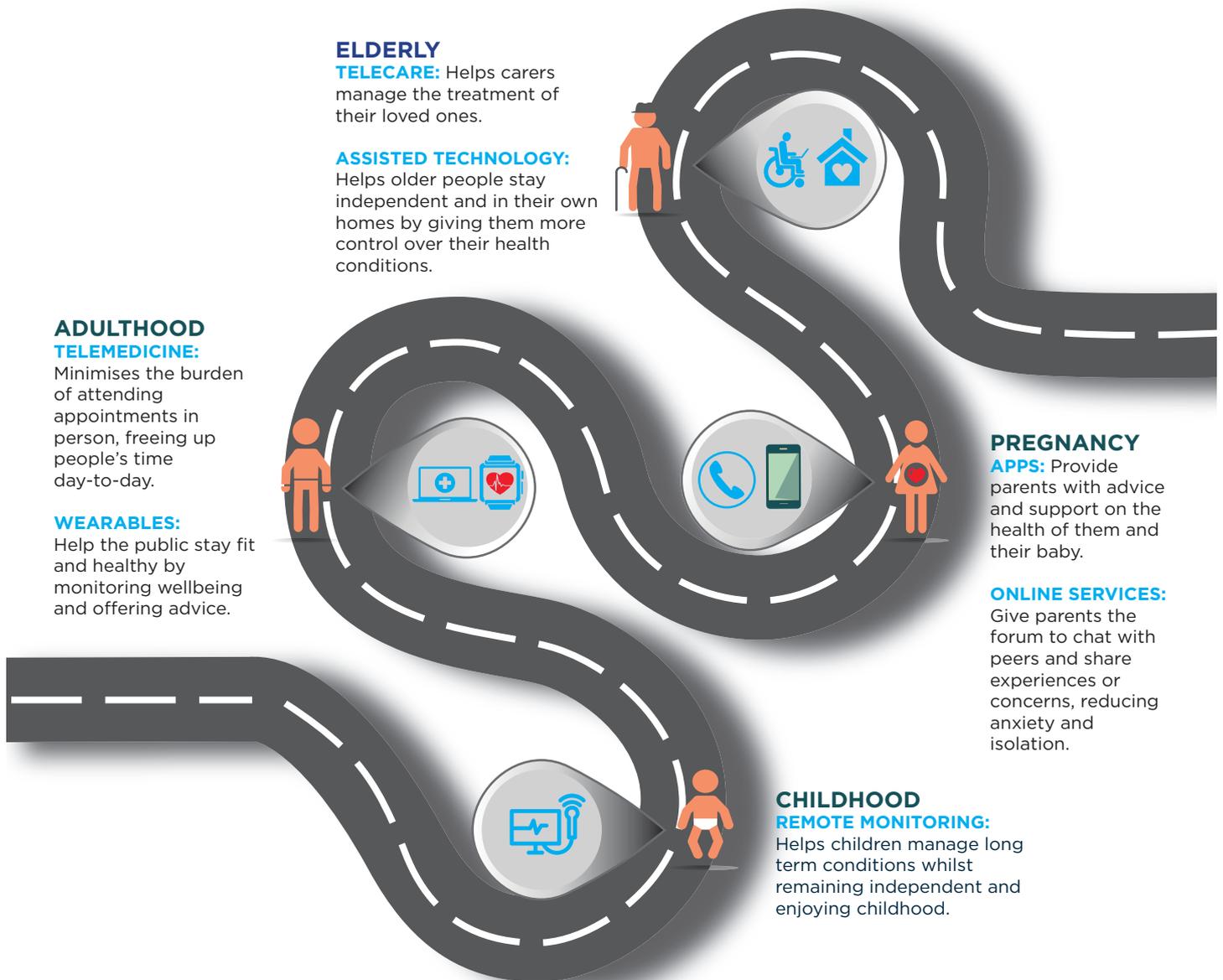
These are positive steps towards realising the potential of Personal Digital Care, however for patients and clients, the NHS and Local Authorities, and the UK economy to realise the full benefits of the technology revolution, there are a series of challenges that need to be overcome.

Chapter 1: What is Personal Digital Care?

Not many products and services can rightly claim - when compared to traditional health and care provision (for example hospital or care home admissions) - to reduce costs of care whilst enhancing quality of life. However, this is what health and care professionals, their patients/clients and carers say about their experiences of using Personal Digital Care. But what is it?

Referred to by NHS England as “Technology Enabled Care Services”⁴, it is specifically about the use of technology to inform, empower, enable and support individuals and their families to manage their own health and care, and to remain independent at home or in the community. It includes a variety of technologies that can feature in different ways throughout a person’s life, as is outlined below.

For the purpose of this paper, when discussing the technologies we have used the more fitting term “Personal Digital Care”, which encapsulates the set of technologies in this market and their multiple benefits to end users and the system.



TELEHEALTH

At its heart, telehealth is the delivery of health and care related services and information via telecommunication technologies. It could be as simple as two health and care professionals discussing a case over Skype or as advanced as remote robotic surgery. In the context of Personal Digital Care, patients or clients use technology such as mobile apps or digital patient records to engage in their own care.

Technologies providing telehealth functionality include:

Remote monitoring

Supports people with long-term conditions by enabling them to measure their vital signs (such as heart rate, blood pressure, oxygen saturation and temperature) and symptoms in their own homes on a daily basis. The information is automatically sent to a monitoring centre for technical and clinical triage, and if results are outside the parameters set for that individual, their clinician will be alerted to address the situation. Self-care advice and information videos can also be provided. To aid the monitoring, monitors and supporting medical devices (such as apps) may be installed in the home or the use of SMS, email and web portals used.

Telemedicine

Provides remote video consultations between health and care professionals and patients/clients either in their homes, nursing/care homes, between hospitals and GP surgeries or hospitals and prisons.

Wearables

Health and fitness devices worn by the patient/client to monitor vital signs such as blood pressure, heart rates, body temperature and sleeping patterns. They are not only worn for medical reasons – they are increasingly popular with people to track their fitness – but can help people manage long term conditions. Sir Bruce Keogh identified diabetes, liver disease and asthma as specific conditions where patients could benefit from wearing devices, which can detect deterioration and could alert the patient (or anyone else they choose) via mobile phone or other digital channels⁵.

Mobile apps

Mobile devices and apps are increasingly being used for people to monitor health, wellbeing and fitness. Apps can be downloaded to monitor a variety of issues including but not limited to food intake, mood, and advice on public health (smoking cessation for example), as well as linking with health devices to monitor blood pressure and weight. Apps can also be used to access information and advice, and access wider lifestyle services offered by the NHS, Local Authorities, the third sector and other parties.

TELECARE

Telecare is a system of sensors used to help monitor a person's environment and behaviour in their home or community, and identify when they might need help or support. The devices, which can be anything from a basic alarm system to location devices to find someone if they have left their home, are connected to a 24/7 response centre. The response team can provide advice and support and importantly take action, whether that be deploying the emergency services or alerting a family member. Telecare can also determine triggers to unusual behaviour such as not getting out of bed in the morning or multiple trips to the bathroom, all of which may be cause for concern and can then be addressed by their care provider.

ASSISTIVE TECHNOLOGY

Assistive technology is an umbrella term that includes assistive, adaptive, and rehabilitative devices for people with disabilities and includes the process used in selecting, locating, and using them. It includes items such as computer aids, electric devices, eye-gaze and head trackers, wheel chairs, communication aids and medication reminders.

ONLINE SERVICES

Online services and online forums are increasingly becoming a familiar part of everyday life for many people, and a preferred method of communication. In the context of Personal Digital Care, services such as online GP appointments and repeat prescriptions, and online forums, such as chatrooms and counselling services, offer different ways of providing support and are becoming more prevalent and accepted in the sector.

Chapter 2: What value does Personal Digital Care offer and to whom?

In one of Jeremy Hunt's first high profile speeches after being re-appointed as Secretary of State for Health after the General Election, he set out his ambition for "Patient Power 2.0"; using technology and science to empower patients to take control of their health and care and for service providers to offer "human-centric" services⁶.

In this section we outline how Personal Digital Care already underpins and can do much more to meet the ambitions set out by Jeremy Hunt and Government, and if maximised, these technologies can deliver significant benefits to:

- **Patients and the public;**
- **Families and carers;**
- **Health and care professionals;**
- **The NHS and Local Authorities;**
- **The UK economy.**

THE VALUE TO PATIENTS AND THE PUBLIC

By the very nature of Personal Digital Care, it puts the power in the hands of the patient or client – giving them control over how they interact with service providers and manage their health, fitness and wellbeing day-to-day. Telehealth for example encourages more self-care; it enables patients to become more independent in managing their health conditions, more aware of their wellbeing and how to influence this through lifestyle choices, which subsequently builds confidence and reduces anxiety that can lead to subsequent health concerns. End users of our members' services frequently report that they feel secure and that their provider is looking after them (even when they're not present), and they feel connected and supported. Similarly, assistive technology gives people greater independence by enabling them to perform tasks that they were previously unable to do or had great difficulty doing by providing enhancements to their everyday life.

Benefits people are seeing from using Personal Digital Care include:

- **Support to better self-manage their condition;**
- **Improved quality of life and reduced anxiety;**
- **Less travel and disruption for routine check-ups;**
- **Retention of dignity;**
- **Increased confidence to manage own health and empowerment to make changes to lifestyle;**
- **Fewer stressful, unplanned hospital admissions.**

Our infographic 'Connected Living For Mary' (overleaf), which has been developed by our Internet of Things Programme, tells the story of how Mary and her family are supported by Personal Digital Care. It enables Mary to remain independent in sheltered accommodation, in spite of having a number of long-term conditions including dementia.

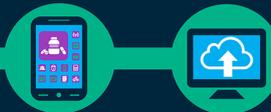
Health and Social Care & IoT: 'Connected Living for Mary'

Challenges



- Mary has early onset dementia, chronic obstructive pulmonary disease (COPD), is prone to falling and lives on her own in sheltered accommodation. Her family does not live locally.
- Despite her frailty she is fiercely independent, but does sometimes get confused by her multiple medications and the various agencies who support her.

Solution



- This real-time information, combined with health and social care data gives Mary better informed, more intelligent, responsive, efficient, and effective service.
- The housing association created an information hub which pulls together currently disconnected information streams from all their residents.

What does it mean for Mary and her family?



- 11am: Mary's GP has changed her medication, which is automatically delivered by the pharmacy.
- 10am: With increased confidence from telehealth support, Mary can understand if her condition is changing and recognise when she needs to commence her standby medication of antibiotics and steroids to manage her COPD.
- 9am: If Mary hasn't got out of bed, a message is sent to the local housing officer who can check in on Mary if this is her wish.



- 12pm: If Mary hasn't taken the correct medication or if Mary has a fall or needs help, she is supported by the 24/7 telecare monitoring centre.
- 4pm: If the temperature in her home is too low, or if there is a weather alert from the met office, Mary's temperature can be adjusted remotely.
- 7pm: If the electricity or water hasn't been in use for a certain length of time, a check is made.



- This has resulted in preventing unnecessary hospital admissions and GP visits and prolonged independence for Mary.

tech^{UK}
#PersonalDigitalCare

THE VALUE TO FAMILIES AND CARERS

More than 3 million people – one in nine of the workforce in the UK – juggle the responsibilities of caring for a loved one with paid employment⁷. These informal carers describe the main service issues they face as:

- **Taking on the responsibility of looking after loved ones often with very little support, for example not knowing about the need to engage with and manage interactions with numerous agencies involved in care provision;**
- **Accessing and navigating the information available to help make informed decisions about the person being cared for;**
- **Securing support systems to connect people to each other and to receive timely assistance.**

The benefits that Personal Digital Care offers carers are considerable. A survey conducted by Carers UK in 2012 showed that 60% of carers said telecare/telehealth had given them increased peace of mind as a carer, and one in eight said the technology helped them stay in work or return to work alongside caring for a loved one⁸.

By empowering individuals to be more independent in their homes whilst also remaining safe, carers are given some respite, which in turn can reduce stress levels associated with worrying about their loved one. On a more practical level it can also help carers and patients manage care plans and medications, address loneliness (for example through peer to peer forums) and help access information and advice on support.

Making telecare mainstream in social care

Hampshire County Council's (HCC) Adult Services Department spends over £1m per day on social care. Significant cuts in funding combined with increasing demand meant the traditional care 'offer' was unsustainable. HCC introduced a managed service, provided by Argenti Telehealthcare Partnership, led by PA Consulting, to drive greater use of technology and focus on outcomes including increased user independence and significant cost reduction. The implemented telecare solutions consist of passive wireless alarm systems usually installed in the home of vulnerable service users, which are customised to user needs and desired outcomes. For example, those at risk of falls receive automatic fall alarms; those who may be living with dementia may be given GPS devices to locate them if they become lost. The telecare solutions are connected to a 24-hour monitoring centre, where the appropriate response can be actioned very quickly, reducing the risk of emergency hospital admissions.

Two years after launch, the service has grown from 500 to over 4,200 users, each having been individually referred and assessed. Evidenced net savings in care costs exceed £2.7m in the two years and the service is being provided to a growing range of users including children on the autistic spectrum and socially isolated older people. Almost all (98%) of the users say they would recommend the service to others and care practitioners now view technology as a mainstream option for service delivery.

THE VALUE TO HEALTH AND CARE PROFESSIONALS

A shift away from system-centric services to human-centred services complements clinical care and relieves pressure on an overstretched system. It means time can be spent treating patients and supporting clients with urgent and/or intensive needs, whilst others can use technology such as telemedicine and online consultations to engage with their health and care professional outside of a clinical or care setting.

Health and care professionals often describe their patients as facing the following challenges:

- **Frailty, memory loss, difficulties in maintaining their independence and managing their medication;**
- **Wanting to remain at home but not being able to receive the care and support needed to make this option safe or easy;**
- **Difficulties in attending appointments, communicating symptoms or taking medication.**

Technological solutions are not designed to replace human contact or restrict independence – they are most effective when combined with good clinical and community care. These technologies can help professionals by:

- **Supporting care of patients;**
- **Enabling their focus to be on patients who need their clinical experience;**
- **Supporting ever increasing case loads;**
- **Reducing unnecessary travel to appointments;**
- **Providing analytical information about patient condition that can help improve diagnosis and management of conditions;**
- **Reducing paperwork;**
- **Encouraging a preventative approach to care.**

Using multi-patient telehealth services in care homes

Half of patients in residential homes are likely to experience an admission into hospital, due to the elderly nature of residents and limited access to suitably trained care staff – it results in over 350,000 admissions a year. As a result, in November 2013, Sussex Community Trust (SCT) and Docobo carried out an eight month telehealth pilot with 92 residents of care homes, who had a range of long term conditions. The staff in the homes were supplied with tablets loaded with a secure clinical multi-patient App and configured for the patients in each home. Their responses were sent to the secure clinical server where clinically trained Community Matrons could look at the collated physiological and symptomatic data, and made informed decisions about ongoing care. If necessary they also adjusted the questions, to look for comorbidities or action an appropriate intervention. During the pilot, admissions to hospital were reduced by three quarters when compared to the same period the previous year and almost half (49%) of patients experienced no admissions at all. The staff in the homes and CQC observers agreed that the telehealth service showed that involving patients in their care had a positive effect on patient concordance, enabled early detection and intervention, and assisted in reducing A&E visits and non-elective admissions. In addition, the time Community Matrons spent at the homes was reduced on average by 40%.

THE VALUE TO THE NHS AND LOCAL AUTHORITIES

Re-designing the way patients and clients interact with services will reduce the overall burden on funding and resources available to the NHS and Local Authorities and, in time, the new approach could be used as a catalyst to becoming a world leader in the use of health and care technology.

Personal Digital Care offers a way to augment the current health and care arrangements, without expecting ever greater investment in expensive building assets or hiring more professional resources. For example, a recent report from the Institute for Public Policy Research identified that over 25% of Local Authorities have launched social care 'e-marketplaces' to give individuals easier access to adult social care services⁹. E-marketplaces allow self-funded social care users and holders of personal budgets to search for and purchase products and services, in line with their personal care plans, using "Amazon/eBay" digital platforms. Not only does this transform the way the public interacts with councils regarding their services and vice versa, but adopting this kind of innovation lowers the barriers to entry for new and small suppliers.

Personal Digital Care is not currently 'mainstream' in health and care, but this is not surprising for a system that was designed well before the digital age. However, these technologies represent a shift in the system approach that people expect and are increasingly comfortable with for all other public service interactions.

Helping people remain independent through telecare

In 2011, the London Borough of Havering committed to transform the health and social care provision to meet the democratic changes, limited resources and increasing levels of dependencies, by partnering with Havering CCG and increasing the use of telecare. The telecare package (provided by Tunstall) that was introduced consists of a home unit and pendant with 24 hour monitoring. The service is being provided to over 1500 individuals, with a further 2500 more eligible clients under consideration. The telecare service helps increase independence and safety, enabling people to remain at home; and reduce the need for home or residential care. The results from independent analysis (commissioned by the Council), which evaluated the benefits provided by the telecare service comparing two cohorts (telecare and homecare against homecare alone), revealed that overall hospital admissions were halved - an estimated annual saving of £2.24m. Moreover, admissions to residential care were delayed by up to seven months, resulting in projected annual net saving of £937,500. The users and their carers also valued the new service - nine out of ten (89%) users said they were being helped to remain independent at home.

Self-testing coagulation at home

Patients at risk of coagulation (clotting tendencies of the blood) are often required to visit a warfarin clinic regularly for monitoring, which can apply great pressures on healthcare professionals, and become a hassle to the daily life for patients. County Durham and Darlington Foundation Trust implemented a digital service (provided by Inhealthcare) to allow patients to self-test at home and receive their latest warfarin dosage without having to travel into the clinic. The service has delivered cost savings to the Trust and improved clinical outcomes for the patients; 70% of self-testing patients saw their control of coagulation improve by a fifth and subsequently minimised their risk of having a stroke. In contrast, almost half of clinic based patients reported an improvement of just 2%. For County Durham and Darlington the average cost associated with an adverse event such as a stroke is £4,124¹⁰ and in the pilot study of 300 patients, a reduction in these events equated to annual savings of £15,678 per 100 people. Compared to traditional warfarin clinics and home based visits, the digital service proved to be more cost effective for providers, requiring fewer resources and allowing for an eight fold increase in the capacity of clinics without adding in additional costs.

THE VALUE TO THE UK ECONOMY

Ensuring individuals have better health will create increased UK wealth, whether that is due to workforce productivity, fewer work days lost to ill-health or more efficient and better quality health and care services. It should therefore be considered as a virtuous circle – if investment decisions by the NHS and Local Authorities centre on technology that can improve health and care, and prevent illness, the UK economy will benefit as a whole.

Similarly as citizens become more involved in their own health and care, improved investment in innovation and enterprise in an essentially consumer-driven market is likely to increase. New enabling technologies such as the Internet of Things, big data analytics and genomics coupled with increased emphasis on population health and disease prevention, will support the creation of new goods and services to meet this growing national and international market. This was illustrated in a recent report by Monitor Deloitte, which estimated that the UK digital health market size (which is £2 billion) is expected to grow to £2.9 billion by 2018, driven predominantly by high growth in markets such as apps and health analytics¹¹.

Digital platform to improve the treatment of mental health

Mental health problems are common in the UK, affecting around one in four people¹² at any time, and costing around £134 billion a year in the UK^{13,14}. The number of people accessing traditional forms of treatment are increasing¹⁵, yet people shy away from sharing their troubles with friends, family or healthcare professionals. Subsequently, Big White Wall developed an alternative to traditional therapy models – a digital wellbeing service, which provides 24-7 professionally moderated, anonymous peer support, structured group programmes and one-to-one therapy sessions. The online personalised care has been used by over 30,000 members in the UK since its launch in 2007. The service has delivered a cost saving of around £36,935 to the NHS for every 100 people, with the largest impact on reduced demand for face-to-face therapies. Improvements were also evident in wellbeing and regained productivity; for example, over half (55%) of users reported a reduction in feeling isolated and two thirds (67%) affected by mental health related sickness absence reported a reduction in time absent at work.

Chapter 3: What are the barriers to widespread adoption?

The opportunities presented by Personal Digital Care are sizeable. There is a vibrant and diverse market of suppliers, an increasing demand from the public that expect and value more information, empowerment and participation in their own health and care, and clear policy direction from Government to exploit the information revolution. So why isn't there already widespread adoption of these technologies across the NHS and in Local Government?

There are a number of significant barriers to its adoption at scale and pace across England and Wales. We have categorised them into six broad themes:

Cultural 'mind shift' – this is a multi-faceted challenge that requires a whole system perspective. Personal Digital Care when adopted holistically across a system will radically change, and in some instances, reduce health and care professionals' interaction with an individual's care. Therefore to realise the full potential of the technology we need professionals, who have predominantly only known a system where they are in full control of service provision, to be willing to adopt a new and in some cases peripheral role when working with the patient or client.

Related but separate to this, is the need to equip decision makers across the NHS and in Local Authorities with the necessary skills and knowledge to allow them to make informed investment decisions about Personal Digital Care. Limited experience of sourcing and commissioning products and services such as this, in organisations such as Clinical Commissioning Groups constrains progress. The 'unknown' is often perceived as high risk in a very tight cost envelope and demanding environment, and there is a tendency to commission very different services at the margins rather than considering radical reform across the system.

Imbalanced incentives – more often than not the benefits for implementing Personal Digital Care are accrued in a different organisation or care setting to the one that commissioned it. This actively creates disincentives to invest in the technology. For example using a range of Personal Digital Care options to keep an elderly person who is prone to falling or has dementia, in their own home, safe and independent, will typically require the Local Authority to make the investment decision. However, the fact that this may avoid health interventions as a consequence of this investment will reduce the burden on the GP and or local hospital rather than the Local Authority.

And whilst Government initiatives such as the Better Care Fund¹⁶ are designed to create single pooled budgets to encourage health and care professionals to work more closely together on investment decision, its effectiveness and impact has been called into question by both the National Audit Office and House of Commons Public Accounts Committee¹⁷.

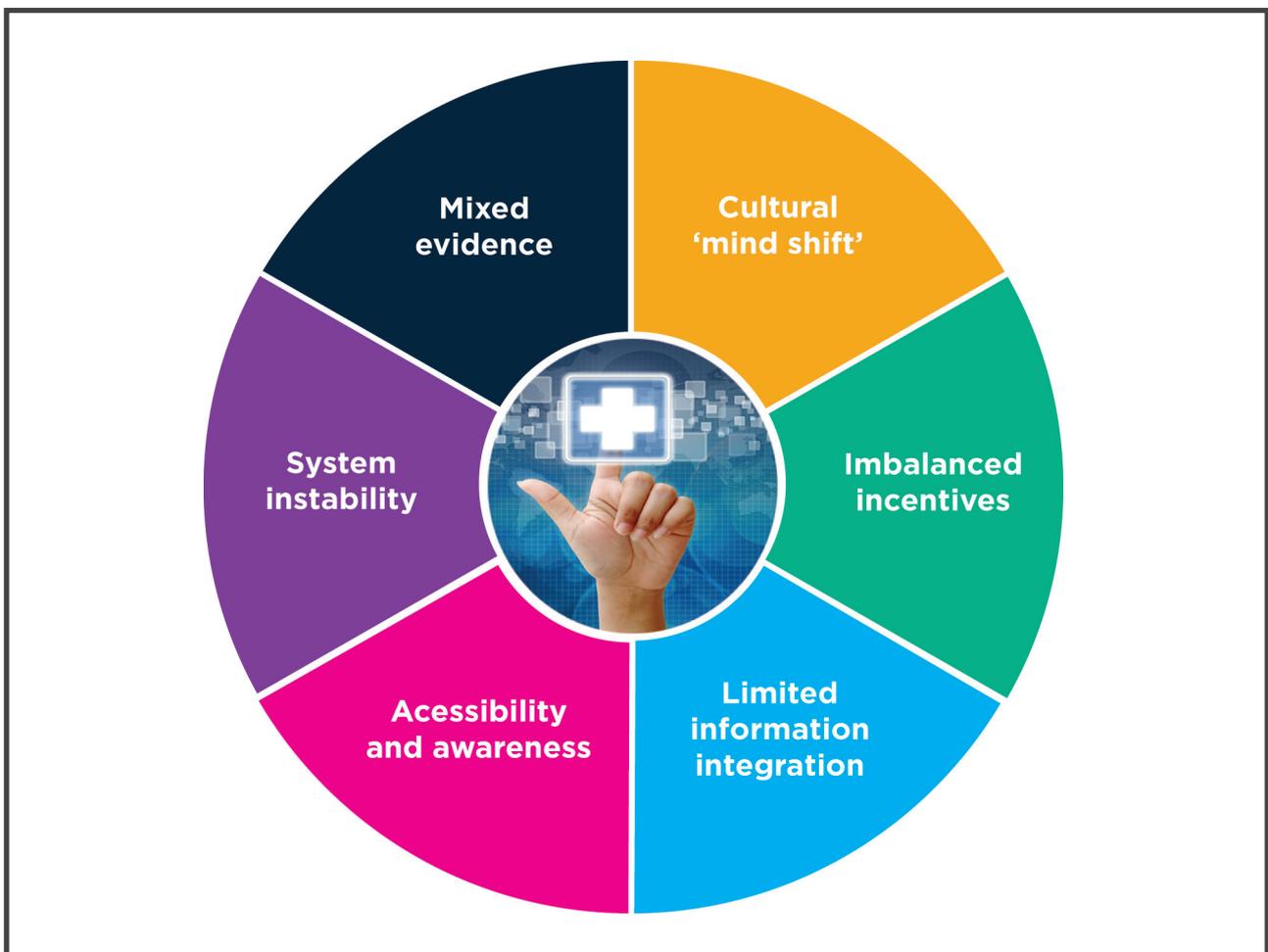
Limited information integration – the health and social care sector in England has a complex patchwork of different IT and technology systems in over 800 care organisations from Acute Trusts to social care¹⁸, all doing a diverse range of tasks from collecting laboratory data to scheduling eye tests. And as outlined in Personalised Health and Care 2020, there is lack of integration and information sharing across these existing technology solutions¹⁹ (let alone new innovative technologies such as apps and consumer devices that are becoming more prominent), which hinders the realisation of technological benefits to the patient/client, service providers and UK as a whole.

Accessibility and awareness – information on Personal Digital Care, in terms of what technology is available, what it provides the customer and/or end user, and robust evidence on the costs and benefits isn't always clear or consistent.

This has an impact on awareness amongst service providers and patients/clients, and subsequently the perceived accessibility of the technology. It is not considered to be 'mainstream' in the delivery of services which means it is not always considered a solution to a problem and when it is, there is a tendency to focus solely on the technology, rather than the services wrapped around it and benefits to the wider service.

System instability - the current approach to commissioning innovation such as Personal Digital Care tends to be designed on a yearly cycle, which means that funding and the process change required in year two and beyond are not considered as part of the initial business case. Having a year-on-year outlook rather than embedding the innovation into the system from the outset, creates instability and the perception that the technology is a high risk investment. Similarly the recent reforms to service provision and in particular responsibility for commissioning services has had a detrimental impact on health and care system stability, and the ability or desire of commissioners to make long-term investment decisions on technology.

Mixed evidence - some health and care professionals believe that there is lack of evidence to justify the introduction of Personal Digital Care. This perception is largely driven by mixed results regarding cost savings from the Whole System Demonstrator (WSD) trial - the largest and most comprehensive evaluation of telehealth and telecare to date. For telehealth patients, there was a 45% reduction in mortality rates and a 20% reduction in emergency admissions (compared with the control group)²⁰. The overall cost of hospital care (including emergency admissions, elective admissions and outpatient attendances) was £188 per patient less than those in the control group,²¹ and so conclusions highlighted the cost difference was not statistically significant. Yet, there are a number of reasons for this outcome including poor patient selection which had a negative impact on the results; only 10% were at high risk of hospitalisation, while over half were moderate to low risk²¹. The WSD trial was also designed to assess clinical effectiveness, therefore it was not optimised to study cost savings. Whilst in a technological sense we have moved on a long way since 2010, some of the negative perceptions remain a challenge in widespread adoption of the technology.



Chapter 4: Overcoming the barriers - what needs to happen next?

As outlined previously, over the past year Government has made a series of significant long-term commitments to making UK a leading digital health and care economy through better use of technology and information, which is welcomed by techUK and the supplier industry.

Our recommendations – which are outlined below – on addressing the barriers to widespread adoption take into account these commitments. And whilst we recognise that initiatives such as Personalised Health and Care 2020 and the Accelerated Access Review consider long term solutions to exploiting the information revolution, there are a number of practical steps that should be taken in the near term to ensure the value of these technologies are fully realised at scale and pace.

1. Re-establish the case for Personal Digital Care

One of Personalised Health and Care 2020's work streams looks at supporting professionals in making the best use of data and technology. It includes having data and technology as a core part of every professional training programme/on-going development course, and ensuring that health and care leaders/decision-makers fully understand how information and technology can enable efficient, patient and citizen focused health and care services²². This is a really positive step towards improving awareness of Personal Digital Care and changing the cultural resilience towards the adoption of the technology. As the work stream develops it should consider creating a **national 'knowledge repository'**, with a dedicated chapter on Personal Digital Care. The TECS Resource tool should be incorporated into this, as it is a useful guide – albeit not complete yet – for commissioners.

For the work stream to be fully effective the evidence that makes the case for these technologies also has to be adequate and accessible. To that end, there needs to be a **comprehensive review of evidence and best practice for Personal Digital Care**, which should be conducted in collaboration with industry partners such as techUK, to feed into the trusted repository of collective intelligence that becomes the 'go to' point for information and advice.

Consumers and patients also need to be empowered – through information – to make decisions about Personal Digital Care, particularly given the introduction of personal health budgets that give individuals the opportunity to fund assistive technologies as part of an integrated health and care support package. A good first step will be to **make the public aware of what the NHS and Local Authorities will provide and what patients, families and carers need to purchase themselves**. Social care e-marketplaces that have been introduced by some Local Authorities (as outlined in chapter three) could be used as a template approach that can be applied across the NHS, particularly if it is combined with information on the reform of health and care pathways set out by Simon Stevens' New Models of Care.

2. Closer collaboration and integration

The challenges around system integration and interoperability can only be addressed if there is greater collaboration between suppliers and with service providers. **All information systems need to be interoperable in the future** – once somebody has installed a patient portal or a self-care app on their phone, or has bought a wearable device, it needs to integrate with the NHS and Local Authorities, so that the data can be incorporated into the person's health care record and follow them wherever they go. To achieve this, we expect all suppliers to sign up to the principles set out in our Interoperability Charter, to ensure that information systems are neither financial nor technical obstacles, but rather enablers of change²³.

We do however, also need the NHS and Local Government to adhere to a set of principles including:

- **Committing to having nationally defined interoperability standards that are based on internationally recognised standards and pragmatic, real-world requirements driven by business needs – developed in partnership with appropriate industry bodies such as techUK;**
- **Where accreditation or compliance testing is deemed necessary, agreeing it will be kept light touch, proportionate, open to all, adequately resourced, and free.**

Pathways of care also need to be aligned, which NICE can play a greater role in delivering.

The fact that NICE Guidance on Home Care included direct references to the use of telecare in service delivery²⁴ is a significant step in aligning pathways and is welcomed by the supplier industry. However, the same approach needs to be applied to all other relevant NICE Guidance. Those that look at the diagnosis, management and treatment of conditions such as heart failure, stroke and diabetes, could all benefit from Personal Digital Care, yet the Guidance is largely focused on clinical options. As and when Guidance is reviewed, technology such as Personal Digital Care should be a core consideration.

The role of **Health and Wellbeing Boards should evolve – they should be local ‘change agents’ in the adoption of Personal Digital Care.** The Joint Strategic Needs Assessment and Joint Health and Wellbeing Strategy that they develop should be the tool to highlight the extent of the challenges facing the local health and care system and highlight the benefits and contributions of Personal Digital Care as part of the solution, and therefore be commissioned accordingly. These strategies will influence an individual’s assessment for care and so should include, by default, considerations for the use of technology that is appropriate to their needs.

Finally, there needs to be a **forum to share and compare successes and failures;** applications and devices that have the potential to deliver or have delivered successful transformational programmes should be promoted and supported across the NHS and in all Local Authorities, whilst unsuccessful ones abandoned. We need to create an environment where collaboratively, service providers and suppliers fail fast and fail safely. Moreover the current pace in which the NHS and Local Government consider, assess and procure technology is too slow to reap the benefits of these innovations. The Accelerated Access Review is looking at how the route to market for ‘innovative’ products can be improved, however it is unclear how the term is defined and whether it looks solely at ‘new’ products, when technology that is already available and offering innovative solutions need to be given equal consideration.

3. Adequate funding models and appropriate commissioning

In recent years there have been significant cuts to funding for public health and social care and with the Spending Review due in mid-November, there are expectations that this is set to continue. However, given the significant benefits Personal Digital Care can offer across the health and care system it is vital that the technologies receive equitable investment consideration, through existing and new funding models.

This includes:

- **Existing Government initiatives** - Government has put in place a number of initiatives to support its ambition to deliver integrated care and more personalised services, such as the Better Care Fund, the Vanguard for New Models of Care, Innovation Funds and the Prime Minister’s Challenge Fund. They are all useful initiatives that can and should encourage the adoption and deployment of Personal Digital Care. To do this effectively technology needs to be considered as a core enabler to change rather than an ‘add on’ or a secondary option if objectives haven’t been met by using alternative methods. The Modality Partnership (previously known as Birmingham Vitality Partnership) – which is now a Vanguard – is a good example of the benefits of putting technology at the heart of service delivery.

By offering digital primary care services that are both personalised and transactional, it has seen a 70% reduction in DNA (do not attends) equating to £300,000 savings, and there has been a 15% increase in capacity and a 15-26% drop in A&E attendance²⁵. When setting and/or updating the framework for these initiatives and funding models, Government needs to ensure technology is considered as a de facto option.

- **New funding options** - Clinical Commissioning Group's should be given the ability to change and adjust pricing/payment tariffs to encourage the use of these technologies. The same applies to Local Authorities when contracting home and community services. Similarly, any future Technology Funds from Government should consider allocating funds to Personal Digital Care, as NHS Scotland has done with its Integrated Care Fund, which will invest £30 million into a Technology Enabled Care Programme over three years²⁶.
- **Financial incentives** - NHS England should explore the applicability of existing financial incentives, including Commissioning for Quality and Innovation (CQUIN) indicators to drive uptake of integrated care and link it to patient experience and outcomes.
- **New approach to commissioning** - Outcomes-based commissioning should be introduced across the health and care system - it will ensure the decisions taken on services are based on rewarding outcomes that are important to the people using them. Commissioners are (rightly) concerned about patient outcomes rather than the detailed processes and structures in delivering services, and outcome-based commissioning removes the imbalance of incentives caused by the fragmented system. In turn it gives health and care professionals the freedom to be more innovative in their approach to delivery.
- **Effective patient selection, evaluation and monitoring** - Appropriate patient selection and effective evaluation and monitoring methods are vital in accurately capturing the positive outcomes that Personal Digital Care offers to patients, their carers and families, service providers and the UK more generally.

As the randomised control trial model is not applicable in this area, **predictive analytical tools and risk stratification needs to be universally adopted**. These tools should be increasingly used to enable the intelligent identification of patients and carers suitable for Personal Digital Care, and there should be a statutory duty for public services to utilise valid approaches for those identified. In addition, patients should be informed of their risk score and made aware of technologies that are available to help them.

The new Digital Maturity Self-Assessment Tool developed by the National Information Board²⁷, will benchmark progress and provide a baseline for service providers being paper free at the point of care. Importantly, as part of the assessment it will ask whether health and care professionals can digitally monitor and care for patients remotely, which is a significant step in the evaluation and monitoring of this type of digital capability. The plan to track increases in the effective use of information technology digital data and services is also welcomed. Nonetheless, there needs to be a **concerted effort to ensure Personal Digital Care, which is not yet considered 'mainstream' is not forgotten or side-lined** in these developments and considered throughout the development of the tool, which primarily focuses on acute care and mental health at the moment.

Conclusion

Government policy has made it clear that we must make the paradigm shift to putting the person at the heart of care. Citizens and patients are also increasingly expecting to use technological solutions to improve the way they access, engage and use health and care services. Now there needs to be a holistic step change in the processes and practices, to ensure the 'real world' examples we have highlighted in our report become the norm and to address the challenges currently facing the health and care system. Only then will patients and carers, the health and social care sector and UK economy reap the benefits that so many other industries are seeing from being 'digital by default'.

The recommendations we have set out in this paper are not just aimed at Government, the NHS and Local Authorities; some are clearly for the supplier community and techUK to take on-board, working in partnership with service providers and policy makers. However, all of the recommendations need to be considered in the context of a consensus that there is a pressing need to make radical changes in order for the technological and information revolution presented by Personal Digital Care to be fully realised.

References

1. George Freeman MP: New technology can save the NHS, ConservativeHome, <http://www.conservativehome.com/platform/2015/09/george-freeman-mp-new-technology-can-save-the-nhs.html>.
2. Five Year Forward View, NHS England, <https://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf>.
3. National Information Board workstream roadmaps, GOV.UK, <https://www.gov.uk/government/publications/national-information-boards-workstream-roadmaps>.
4. Technology Enabled Care (TECS), NHS England, <http://www.england.nhs.uk/ourwork/qual-clin-lead/tecs/>.
5. NHS's Sir Bruce Keogh claims wearable tech could revolutionise healthcare, Computing website, <http://www.computing.co.uk/ctg/news/2391382/nhs-s-sir-bruce-keogh-claims-wearable-tech-could-revolutionise-healthcare>.
6. Making healthcare more human-centred not system centred', Speech by Jeremy Hunt MP, <https://www.gov.uk/government/speeches/making-healthcare-more-human-centred-and-not-system-centred>.
7. Facts about carers 2014, Carers UK, <http://www.carersuk.org/for-professionals/policy/policy-library/facts-about-carers-2014>.
8. Carers and telecare, Carers UK, http://www.tunstall.co.uk/Uploads/Documents/Carers%20and%20telecare_Sept2012.pdf.
9. Next-Generation Social Care, Institute of Public Policy Research, http://www.ippr.org/files/publications/pdf/next-generation-social-care_May2015.pdf?noredirect=1.
10. Henegham et al. Lancet (2012): 322-334.
11. Digital Health in the UK: An industry study for the Office of Life Sciences, Monitor Deloitte, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/461479/BIS-15-544-digital-health-in-the-uk-an-industry-study-for-the-Office-of-Life-Sciences-pdf.
12. Personalised Health and Care 2020, National Information Board, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/384650/NIB_Report.pdf.
13. The economic and social costs of mental health problems in 2009/10, Centre for Mental Health.
14. Economic burden of mental illness cannot be tackled without research investment, Mental Health Foundation, <http://www.mentalhealth.org.uk/content/assets/PDF/campaigns/MHF-Business-case-for-MH-research-Nov2010.pdf>.
15. Reports from IAPT, Health and Social Care Information Centre, <http://www.hscic.gov.uk/iaptreports>.
16. Planning for the Better Care Fund, National Audit Office, <http://www.nao.org.uk/report/planning-better-care-fund-2/>.
17. Planning for the Better Care Fund, House of Commons Public Accounts Committee, <http://www.publications.parliament.uk/pa/cm201415/cmselect/cmpublicacc/807/807.pdf>.
18. NHS organisations in England, Organisation Data Service, <https://data.gov.uk/dataset/england-nhs-connecting-for-health-organisation-data-service-data-files-of-nhsorganisations>.
19. Personalised Health and Care 2020: A Framework for Action, National Information Board, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/384650/NIB_Report.pdf.
20. Whole System Demonstrator Programme, Department of Health, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/215264/dh_131689.pdf.
21. The impact of telehealth on the use of hospital care and mortality, Nuffield Trust http://www.nuffieldtrust.org.uk/sites/files/nuffield/publication/120622_impact_of_telehealth_on_use_of_hospital_care_and_mortality.pdf.
22. National Information Board: Work Stream 6 Roadmap, National Information Board, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/465070/Work_Stream_6_Final.pdf.
23. Health and Social Care Interoperability Charter, techUK, <http://www.techuk.org/insights/news/item/5276-techuk-s-interoperability-charter>.
24. Home care: delivering personal care and practical support to older people living in their own homes, NICE, <https://www.nice.org.uk/guidance/ng21>.
25. 7 day access – let's think differently, Tunstall, <http://blog.tunstall.com/7-day-access-lets-think-differently/>.
26. Technology Enabled Care Programme, Joint Improvement Team, http://www.telecare.org.uk/webfm_send/997.
27. Delivering the Five Year Forward View: Personalised Health and Care 2020, National Information Board, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/437067/nib-delivering.pdf.

For further information on the evidence highlighted in the case studies, please contact the relevant companies or organisations directly.

techUK represents the companies and technologies that are defining today the world that we will live in tomorrow. More than 850 companies are members of techUK. Collectively they employ approximately 700,000 people, about half of all tech sector jobs in the UK. These companies range from leading FTSE 100 companies to new innovative start-ups. The majority of our members are small and medium sized businesses.

techUK is committed to helping its members grow, by:

- Developing markets;
- Developing relationships and networks;
- Reducing business costs;
- Reducing business risks.

Contact

Natalie Bateman

Head of Health & Social Care

E Natalie.Bateman@techUK.org

T +44 (0) 20 7331 2043



10 St Bride Street London

EC4A 4AD

techUK.org | [@techUK](https://twitter.com/techUK) | [#techUK](https://hashtage.com/techUK)