



## Remote Care plc

Developing the capacity  
of the remote care  
industry to supply  
Britain's future needs

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# Executive Summary

**There are calls for widespread scaling up of remote care – ‘telehealth’ and ‘telecare’. These are driven by an ageing population, increasing numbers of people with chronic conditions and constrained resources available for health and social services.**

This report is concerned with the *supply-side* of remote care and its ability to meet anticipated future needs. This is an important, but overlooked, question in the debate, which usually concentrates on demand-side issues such as the fragmentation of the health and social care system, or commissioning and funding issues.

Since 2006 the UK's various policy initiatives probably represent the most important concerted effort by a national government to stimulate the uptake of remote care. At least £160m of public funding was spent across the UK during 2006-2011.

Little is known about the number of people who use remote care systems at any given time. We estimate that, in the UK, there may be around 350,000 users of systems that are more sophisticated than a basic pendant alarm.

We know even less about the *potential* number of remote care users because this figure depends on assumptions made about remote care's effectiveness and the size of the population that could benefit from it.

Focusing just on the population over 75 years old, there may be a current potential market of 1.4m users, assuming that 80 per cent wish to live at home as long as possible and a third might benefit from remote care. This number could grow to 3.2m by 2050.

Many of the current barriers to remote care expansion involve a mix of demand-side factors, but there are also significant problems with the supply industry's structure.

## **Familiar demand-side problems include:**

inadequate evidence for the benefits of remote care; fragmentation of purchasing and silo-based behaviour; poor integration across health and social care services; weak leadership in the NHS to overcome general resistance and drive developments; lack of expertise among NHS purchasers, hampering collaborative relationships; problems with the remote care procurement framework for public sector organisations; lack of suitable models for reimbursing the costs of remote care.

## **Problems on the supply-side include:**

the small-scale and fragmented nature of the industry; difficulties in identifying suitable business models, compounded by a lack of evidence for the benefits; immaturity of products and continuous innovation hampering purchasing; low levels of inter-operability between remote care devices discouraging investment and making it difficult to establish standards.

Nevertheless, remote care suppliers have major ambitions to offer an end-to-end, seamless remote care service rather than just providing equipment.

To move forward, more imaginative approaches are needed to change the transactional framework in which the demand- and supply-sides operate. New forms of supplier-purchaser alliances are required, providing an environment in which both the demand- and supply-sides grow to their potential.

There may be lessons from new forms of public-private partnership, emerging in parts of Europe, which are designed to jointly deliver healthcare infrastructure and services. These bundle activities – health services and infrastructure – to optimise outcomes, sharing risk more effectively between purchasers and suppliers, and using payment mechanisms between parties that incentivise appropriate behaviour.

It will also be necessary to address fragmentation on the demand-side. Remote care technologies could be a catalyst for new levels of collaborative working across health and social care. However, the systemic problems of silo-working in health and social care could frustrate the comprehensive implementation of remote care. Moreover, the growing separation between telecare and telehealth, both in the narrative around remote care and in practice, may continue to reinforce fragmented thinking.

Stronger senior leadership will be required to construct a shared vision, engaging staff and selling remote care within and across health and social care services.

Improved integration will also require better understanding of how remote care impacts on specific parts of the health and social care system. This should help to highlight the potential financial disincentives for some stakeholders to implement remote care and help inform decisions about how to address them.

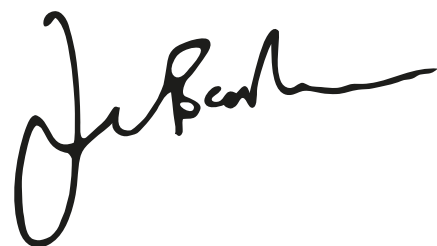
A better understanding of the system-wide impacts would also support the development of business cases and business models for remote care. It is therefore important to continue the collection of robust evidence on the implications of remote care.

Sir Ian Carruthers' 2011 review of NHS innovation adoption argued for a tariff for telehealth and telecare. This needs to be developed. It is also important to consider the longer term implications on the income of hospital trusts of scaled-up remote care.

There is market potential for greatly expanded remote care in the UK, which should benefit suppliers. The age and morbidity characteristics of the population will attract new companies into the arena, encouraging innovation and improving competition in the industry. There may also be untapped potential through a market for 'elective' – individually paid for – remote care.

But there is also a danger that current momentum will be lost and insufficient investment will be made to make the most of opportunities, due to weaknesses in the current market.

If Britain succeeds in engineering an environment for widespread adoption of remote care, the skills, expertise and knowledge could be a valuable, exportable good.



**Professor James Barlow**

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# 1. Introduction

It is certain that, in the coming years, the health and social care needs of Britain's population will be increasingly delivered within their homes with the support of systems enabled by information and communications technology or ICT. Such 'remote care' systems are already with us and are commonly called 'telehealth' – when monitoring an individual's vital signs – and 'telecare' – when monitoring an individual's mobility and general safety in the home (see Annex 1 for more thorough definitions).

Care of this type has been around for many years, in increasingly sophisticated forms. In the UK, the origins go back to the 1970s with the creation of the 'community alarms' services providing elderly people with devices to alert social carers in the event of a fall in the home. Today, the possibilities have expanded enormously. There is a sense of inevitability around the general adoption of remote care, which springs partly from such imperatives as the ageing population, increasing numbers of people with chronic conditions, and constraints on the resources available for health and social care. The age and chronic health demographics are similar worldwide, creating a global market opportunity for the industries developing and supplying remote care technologies.

The UK's various publicly-funded programmes probably represent the most concerted effort by a national government to stimulate remote care uptake (see Annex 2 for review of the policy background). Remote care is firmly on the agenda for future health and social care policy. Since 1998 there have been more than 25 government and other official reports calling for greater use of remote care in the UK. At least £160m of public funding was spent across the UK on initiatives to support uptake over the period 2006-2012. The *3millionlives* programme<sup>1</sup>, established in late 2011, aims to develop the remote care market and remove barriers to delivery, with the Department of Health and industry working together to bring telehealth and telecare to an estimated three million people who could most benefit.

The purpose of this report is to consider whether the UK is ready to meet this challenge. In particular, we are concerned with the supply side of remote care and its ability to meet anticipated future needs. This is an important, but overlooked, question in discussions about remote care, which usually concentrate on demand side issues such as the fragmentation of the health and social care system, funding capacities and possibilities of personal budgets to purchase remote care packages. Supply and demand are not, of course, unrelated – in the UK, development of a coherent 'market' for remote care products and services will be heavily dependent on strong commissioning signals from local NHS and social services bodies.

*“ We are concerned with the supply side of remote care and its ability to meet anticipated future needs. ”*

Drawing on extensive interviews with leading remote care suppliers and health and social care authorities<sup>i</sup>, this report examines the issues that should be tackled to gear up the remote care industry to meet expected requirements for remote care provision. Given the fact that telecare (i.e. monitoring an individual's mobility and general safety in the home) is now relatively well established, we concentrate more on the emergent telehealth sector in this report (i.e. monitoring an individual's vital signs). Annex 1 provides further definitions of the terminology.

The research was partly funded by Department of Health for its evaluation of the Whole System Demonstrators (WSD) programme and partly by the EPSRC's Health and Care Infrastructure Research and Innovation Centre (HaCIRIC). Box 1 provides further details. The views expressed are the responsibility of the authors.

In the next section we ask how much remote care there is in the UK and where the UK stands in relation to other countries. An answer would provide a baseline against which to measure future performance, and provide an insight into the penetration of the concept and extent to which this can be leveraged to scale-up these services in the future. This turns out to be a hard question to answer.

We then look at the structure of the UK's remote care industry and, drawing on our interviews, discuss the perceived challenges to market development. Finally, we explore the options for addressing these challenges and make recommendations for moving forward.

**Notes:**

- i. To maintain anonymity of interviewees, we term these 'technology suppliers' and 'service providers' in this report.

## BOX 1: ABOUT THE RESEARCH

### Background

The report draws on three related research projects carried out between 2006 and 2011. These have provided a large data set which includes over 250 interviews, over 300 hours of observations, as well as documentary analysis of material such as meeting minutes and reports.

The work reported here includes a study partly funded by the Department of Health as a contribution to the Whole System Demonstrators evaluation programme and partly by HaCIRIC – the Health and Care Infrastructure Research and Innovation Centre.

### Supply chain study: methodology

A total of 20 interviews were conducted with representatives from leading telecare and telehealth technology suppliers, national and international, and with a range of sizes. We also interviewed local health and social care authority teams involved in procurement decisions in the WSD sites, and a remote care expert involved in the design of remote care standards and best practices. All the interviews were carried out during early - mid 2012. Data from all interviews were analysed using the principles of thematic analysis. Additional research involved evaluation by an Imperial College Business School MBA student of the market research reports that were readily accessible and publicly available financial data for selected remote care companies.

### Other source material

The report also draws on various related research projects we have conducted. Between 2006 and 2009, we carried out a detailed study of five local care authorities attempting to implement remote care during the timeframe of the Preventative Technologies Grant (PTG). Subsequently, we became part of the evaluation team for the WSD programme, where two of the three demonstrator sites overlapped with our original PTG cases, giving us a five-year longitudinal data set. In addition, between June 2010 and June 2011, we were funded by the Department of Health to examine the implementation of remote care in another six sites.

## 2. What is the market for remote care and how big is it?

How large is the current UK remote care 'market' – the value of equipment and services provided, and the number of users? And how much could it grow?

A number of interviewees felt that there are many misconceptions about the potential size of the market for remote care. There was concern that policy announcements and programmes such as *3millionlives* were inflating the demand for remote care technology.

*"Who determines the market? At the moment it is someone who said that millions of people can be monitored at home. A company looks at that and says 'this is fantastic, we can make a lot of money from this', so it becomes a self-perpetuating scenario. And what will happen, if I can make a prediction, (with) all these companies coming in with these services. I think there will be a lot of really burned fingers in 3 to 5 years when they suddenly find that the market is not there." (Technology supplier)*

Market estimations can be made either by analysing actual current and projected market growth through sales revenue of suppliers or by assessing the demand side of the market, i.e. the number of actual and potential users. Developing a clear understanding of the growth of remote care according to either of these variables is hard. This is due, in part, to the wide range of definitions for telecare and telehealth, uncertainty

about the number of people who could potentially benefit, and the backdrop of changing technology capabilities. Estimating the size of the remote care market is inevitably an inexact science.

### Sales revenues

Most reports generally focus on the sales revenue of technology suppliers and service providers. Some include a wide range of mobile medical and fitness equipment. There is little consistency in the estimates, and projections of market growth are usually subject to revision (see Box 2). Estimates for the European market size for telehealth in 2014 range from €165m to €429m depending on the definition of telehealth. Companies involved in the US home healthcare and disease management were said to have earned revenues of \$126.8 million in 2010; this is expected to reach \$294.9 million in 2015<sup>2</sup>. The compound annual growth rate (CAGR) for the global remote care market is thought to be around 15-20 per cent<sup>3 4</sup>. In short, there is perceived to be an embryonic, but growing, market in different parts of the world, but much depends on the definition of 'remote care' that is used.

### BOX 2: EUROPEAN REMOTE CARE MARKET PROJECTIONS

Market projections vary considerably and are subject to substantial revision, for example:

- The market for vital sign sensors is expected to double to nearly €300m by 2014 (Somsainathan, 2010, Remote Patient Monitoring Market in Europe Witnessing a High Growth Trajectory. Frost & Sullivan. [www.slideshare.net/FrostandSullivan/european-remote-patient-monitoring-market-4751243](http://www.slideshare.net/FrostandSullivan/european-remote-patient-monitoring-market-4751243))
- Frost & Sullivan's 2007 estimates for the total remote patient monitoring market in Europe by 2014 were revised upwards in 2010 from €292.3 million to €429 million. The UK and Germany were the two leading countries in terms of market revenues in 2009 (Frost & Sullivan, 2007, European Remote Patient Monitoring Markets and Frost & Sullivan, 2012, Consumer-Driven Strategies Prove Successful in the Convolutional Remote Health Monitoring Market)
- Datamonitor projections made in 2007 for the telehealth market by 2010, including home and hospital-based telehealth, were later revised downwards from €660 million to €323 million, and from €1,146 million to €425 million by 2012 (see Baum F, Abadie F (2012) Market developments – Remote Patient, Monitoring and Treatment, Telecare, Fitness/Wellness & mHealth. Strategic Intelligence Monitor on Personal Health Systems phase 2 (SIMPHS 2). Seville: European Commission Joint Research Centre, Institute for Prospective Technological Studies).



## How many users? The potential market size

Another way to estimate the potential market size is through the demographic and health profile of the population that could potentially benefit from remote care. How many of this potential population will actually be provided with remote care at any given time will be influenced by our understanding of which groups of people could most benefit, considerations about acceptable risks in supporting people in their homes, the economics of providing remote care, and the efforts of suppliers to increase market penetration. Very broadly, we can group this potential market into three categories:

- **Poorly symptomatic intense users.** So far telehealth has been used mainly for high risk (and high cost) healthcare users, especially people with poor symptom management who are intense users of health services and have frequent monitoring needs.

According to one telehealth supplier we interviewed, the number of people in this category is probably less than generally thought by the industry, perhaps 500 to 1000 people per PCT<sup>ii</sup> at any given time – a maximum of around 150,000 in England. Another technology supplier felt that the demand from such users could be even lower at any given time.

*“(There) are probably about 150 (high dependency) patients per half a million population. High dependency users which go in and out of service. That is the market. You are talking 15,900 patients in England at any given point in time. These are ... people who would actually benefit from telehealth immediately and correspondingly the health provision side would have the benefit of reducing cost ...”*

- There is potentially a much larger market for **preventative remote care**, embracing people with moderate needs who are occasional health service users. In the UK, the population over 75 is expected to grow from 4.9m to 8.9m people by 2035. In surveys, around 85 per cent of older people express a wish to remain at home as long as possible<sup>5</sup>. If a third of these are perceived to derive benefit from remote care, today's potential market of 1.4m could grow to over 2.5m over the next 25 years or so<sup>iii</sup>.

*Suppliers we interviewed argued that engaging end-users more centrally in decisions about what telehealth equipment is used could help to stimulate awareness and interest, with knock-on effects on market development and the design of the technology.*

- The size of the potential UK market for **'elective' telehealth** is unclear. By this we mean telehealth services that are privately arranged and paid for by individuals for themselves or their relatives. Currently, telehealth is a prescribed service managed by clinical and social care staff who are not keen to manage data and responses arising from un-prescribed, individually purchased technology. This is because the mere purchase of the technology does not take account of the services required to support responses to it. Whether an elective telehealth market will emerge depends on the development of suitable business models, greater choice of equipment and suppliers, an appropriate supply chain, and the integration of the devices into clear care pathways. It would also require the population to take increased responsibility for its own health and be prepared to pay for services that are currently free, albeit rationed.

Suppliers we interviewed argued that engaging end-users more centrally in decisions about what telehealth equipment is used could help to stimulate awareness and interest, with knock-on effects on market development and the design of the technology.

### Notes:

- The average PCT has a population of approximately 284,000.
- A report by the Strategic Society Centre found that of the 4.172m people in England aged 50 and over in 2007-08, 59 per cent live alone and therefore constitute potential 'higher-risk, "core" targets for telecare usage', but only 375,000 used personal alarms and 715,000 used other alerting devices. Lloyd J (2012) *The Future of Who Uses Telecare*. Available from [www.strategicsociety.org.uk](http://www.strategicsociety.org.uk)

## How many users? The current market size

*“Everyone talks a preventative agenda. Telehealth and telecare work best for a preventative agenda, not the top 5 per cent (of highly dependent people) ... The preventative agenda is something the government and everybody says they want to do and then it always gets cut when it’s a case of emergency care versus preventative care.” (Service provider)*

*“If you’re only going to focus on people who have got substantial or critical care needs and you’re not going to focus on people with moderate and low-care needs, then you’re never going to really embrace that preventative agenda and build up a long-term benefit in terms of reducing the burden on the public sector.” (Technology supplier)*

*“The only choice that is possible to offer right now is: ‘Do you want the system that our organisation has bought or don’t you?’” (Remote care consultant)*

So how do these figures for potential market size compare with the actual number of people receiving remote care in the UK?

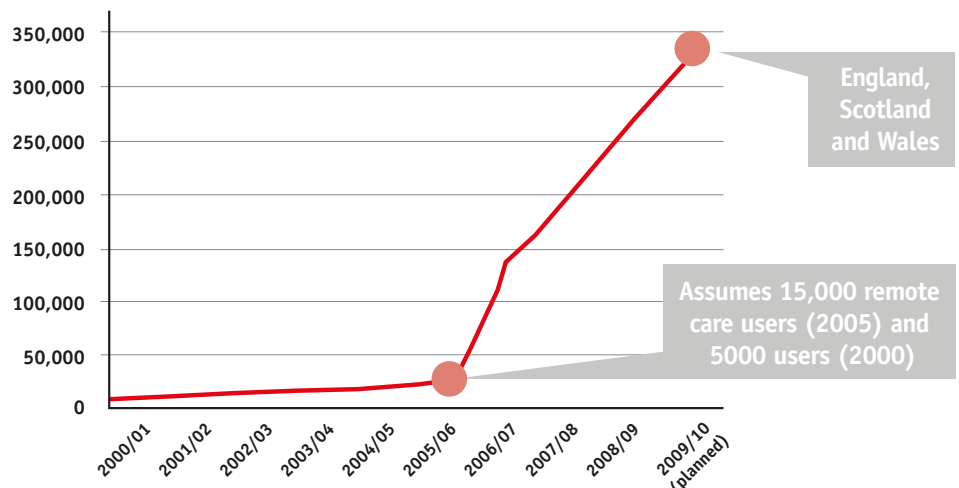
Very little is known about how many people are receiving different forms of remote care at any given time. We have tried to estimate the change in the number since 2000 from a variety of sources. For England we used the annual returns made by local authorities to the Care Quality Commission (CQC) for the period during which the Preventative Technologies Grant, a previous Department of Health funding programme, was active (2006/07 – 2009/10). For Scotland we use data provided by the Joint Improvement Team and, for Wales, the data are based on our own research for the Welsh Assembly Government<sup>6</sup>.

The data presented in Figure 1 include remote care supplied by local authorities and by other private or voluntary sector providers. Remote care was carefully defined in the CQC data so there was as much consistency as possible across local authorities and from year to year.

The data also attempt to ensure that the most basic social alarm systems are excluded.

Two assumptions have been made in our analysis. First, we have included an estimate for ‘churn’ – the annual turnover of users due to death or because they no longer require remote care. From the Scottish and Welsh data this appears to be around 30 per cent of users per annum. Second, we have estimated the number of remote care users for 2000 and 2005 from our own knowledge of the market at this time. Research on telecare we carried out at this time suggested that there may have been around 5000 users in 2000, with around 50 local authorities across the UK running small pilot projects involving up to 100 users. We have assumed this pool grew slowly during the early 2000s to reach a total of 15,000 users at the start of the Preventative Technologies Grant programme.

Our findings are displayed in Figure 1, which shows a steady increase in the number of remote care users in England, Scotland and Wales since the introduction



**Figure 1**

**Growth in remote care users in UK** (Source: see text)

of the PTG, reaching around 350,000 by 2010. This represents perhaps a quarter of the potential market, based on the assumption that 85 per cent of the current 4.9m people over 75 wish to remain at home as long as possible<sup>5</sup> and a third of these could benefit from remote care at any given time (see Figure 2). How many are receiving telehealth, rather than more advanced forms of telecare other than basic social alarm systems, is unclear. One report estimates that in the late 2000s, out of a possible treatable 450,000 patients, only about 0.05 per cent – 22,500 – were receiving a telehealth solution<sup>7</sup>.

Various reports suggest that the potential market for both telecare and telehealth has some way to grow. For example, Frost and Sullivan estimated in 2006 that only slightly less than 5 per cent of all potential end users – defined as people over 65 years of age – in Europe employ a telecare system<sup>7</sup>. A 2009 study on the use of first generation telecare (basic social

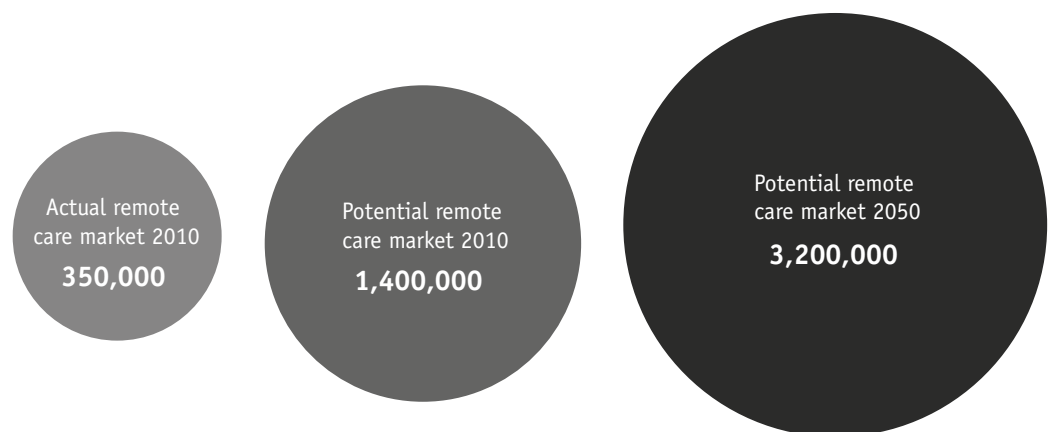
alarm systems) draws a similar picture, with the UK and Ireland having the highest percentage of people over 65 using telecare (15 per cent), followed by Finland and Sweden (10 per cent)<sup>8</sup>.

The scale of expansion in remote care during the late 2000s is perhaps a surprising finding, given the general perception that the sector remains dominated by small-scale trials or pilot projects.

However, two provisos need to be highlighted. While the CQC data are most accurate available, they are by no means perfect. They are dependent on local authorities defining what constitutes 'telecare' or 'telehealth', or a remote care 'installation', in a consistent way. It is known that the criteria used by local authorities or health trusts to define the number of individuals receiving remote care variously include homes where sensors and equipment are installed, the total number of sensors deployed, and number of individuals receiving the service. Other unknowns are the length

of time an individual has been receiving remote care before it is included in the data and the rate of churn within the user population. All this makes it very hard to accurately gauge how fast and extensive take-up has been.

We also know nothing of the growth rate since the CQC data stopped being collected in 2009/10. There are signs that the expansion may have tailed-off. The recent audit of local authorities by the Good Governance Institute found that 'despite 1.5 million people currently using telecare in England, figures reported by councils through the audit only accounted for a fraction of this'. When asked about use of the additional £648 million allocated to local authorities by the NHS to support social care services in 2011/12, only £28m had been spent on telecare and 43 per cent of PCTs saw no investment in telecare<sup>9</sup>.



**Figure 2**

**Actual and potential remote care market in the UK** (Source: see text)

**Assumptions:**

- UK population aged 75+ is c4.9m (2010)
- c85% of older people wish to remain at home as long as possible
- 1/3 needs remote care at any given time

**Source:**

based on CQC returns, JIT (Scotland) data, and authors' research for WAG.

### 3. The UK remote care supply industry and challenges to market development

*“Unless you start spending some money in the market place then I can see a lot of companies disappearing, particularly in this current financial climate, because you can’t carry on with nothing coming through the door. You need cash flow.” (Technology supplier).*

*“I think there are a very few challenges in the technology. Technology’s our business. We will come up with new technologies, and those technologies will have a role to play. The challenge is in transforming the care from the current model of hospital-centric care to a patient-centric, home-based care, and the NHS has a long journey to get there ... I think if we can move quicker towards an integrated care model, then telehealth has a much greater chance of evolving.” (Technology supplier)*

If remote care is to become a key part of future health and social care delivery, its supply chain – the relationships between the different parties involved in manufacturing equipment, providing the underlying infrastructure, and delivering the service – will need to become clearer and better established. The industry supplying the technical infrastructure for mass remote care – its equipment and associated services – is a key component of this supply chain. But the extent to which the industry is ready to meet the challenges in scaling-up from the existing position is little discussed.

A growing view amongst suppliers we interviewed is that the market is trapped in a vicious circle. Uncertainty about demand leads to unwillingness to commit to investment both in the development of new technologies and in the allocation of care service budgets to remote care.

*From the perspective of suppliers, many of the barriers to market expansion are perceived to be due to a mix of demand side factors. However, they also accept that there are a number of problems with supply side industry itself, notably around industry structure.*

#### Problems with the demand side

##### Fragmentation and silo-based behaviour in healthcare

Suppliers are particularly concerned about the fragmentation of remote care purchasing, particularly in the NHS, which makes it difficult for them to negotiate and deliver substantial projects. In particular, there is a lack of clarity within health services about who should be responsible for telehealth. The incentives for different stakeholders to adopt remote care have yet to be resolved. There remains confusion about who pays for what, and no clear demarcation between health and social care over responsibilities for services for those with long-term conditions. This is compounded by turbulence in the NHS structure created by the current reform process.

Suppliers had mixed views on the impact of the latest round of reforms and devolution of spending decisions to a much larger number of Clinical Commissioning Groups

(CCGs) than the PCTs they are replacing. Suppliers expected this to increase the level of organisational fragmentation, although they anticipated that the change to GP-led CCGs may increase opportunities for them to play a more active role in providing end-to-end services. But they also argued that a lack of interest by many GPs – due to limited awareness of telehealth or concerns that monitoring and response would increase their workload – would ‘close down’ the embryonic market. Suppliers hoped that there would be sufficient telehealth already ‘on the ground’ and embedded before CCGs became established, but this was seen as unlikely.

*“(GPs) will be looking for evidence. I think there’ll be some groups which will be very strong supporters based on the evidence, others who will just not be. I think it’s going to be a mixed bag ... GPs typically have three reactions, enthusiast, sceptics and indifferent. And I think that will be the same in commissioning groups.” (Service provider)*

##### Lack of integration and joined-up thinking across health and social care services.

Suppliers felt that the flow of information, cash and resources across boundaries in health and social care continues to be a significant barrier to investment. There is often a confusion of interests among the multiplicity of stakeholders both within and between health and social care. Acute hospital stakeholders may see potentially lower costs resulting, for example, from reductions in demand for in-patient beds. Others, such as social services departments, may be net cost-bearers as more people remain at home. So, even if convincing evidence about potential positive economic benefits arising from reduced demand on acute care is gathered, new thinking is needed to ensure that every stakeholder is incentivised to implement the change.

*“The commissioner says it is a provider issue but the provider says the commissioner gains because the people don't go to the hospital. Hospitals won't pay because they get income from people who get admitted, so the whole thing is broken with the way it is set up.”*  
(Technology supplier)

*“I'm hoping with the latest White Paper, and once things begin to sort themselves out, that there will be a joined up approach. Because at the moment there's no incentive to keep the patient out of hospital.”* (Technology supplier)

#### **Problems of leadership and culture**

Management in the NHS is not strong enough to overcome apathy and general resistance to change and drive or impose developments required to accommodate remote care services. There are leadership difficulties in delivering such a major service change at any time, but especially during a period of NHS reform, financial cutbacks, constantly moving workforces and shifting organisational priorities. And some suppliers felt that there was no real culture of innovation within the NHS bodies they engaged with, partly because of their monopoly position in providing healthcare.

*“There is no external pressure on the NHS to adopt innovation, whereas in a competitive environment you want to stay one step ahead of your competition, therefore you'll find competitive advantage through innovation. You either compete on price or on the innovation. But in the NHS they compete on neither as there is no competition.”*  
(Technology supplier)

#### **Too many pilot projects**

The lack of leadership and the structure of health and social care provision, with considerable local autonomy, can lead to repeated pilot projects that are neither sustainable nor scalable. This results in duplication of effort and lack of standardisation nationally. Our research

has found that the creation, through pilot projects, of small pockets of activity and excellence can be divisive, even in cases with a long history of 'joined up' working across acute, primary and social care services. This results in issues of ownership of remote care projects that push people apart rather than together<sup>10 11 12 13</sup>. Additionally, small-scale pilot projects in remote care have limited usefulness when developing lessons for scaling-up services. Issues 'resolved' in such pilot projects often do not translate when attempting to implement remote care more widely<sup>14 15</sup>.

*“We've got 76 primary care organisations that have got a telehealth solution in one shape or size. Typically, the vast, vast majority of them exhibit a similar characteristic, which is that they are below 15 patients, and that's because they tend to be sponsored by one local team of clinicians, they get some funding, and they achieve great things, but, effectively, those clinicians are running two clinical pathways. They're running a pathway for patients who don't have telehealth, which is the conventional clinical pathway, and they have to run a separate bespoke pathway which they engineer on a locality basis to accommodate this technology that they're using in a pilot. So it's not a long-term and sustainable pathway. It's a temporary accommodation for a project.”*  
(Technology supplier)

#### **Procurement is poorly developed**

Two concerns relating to procurement of technology were identified by suppliers. First, suppliers believe that care organisations often do not have the level of organisational capability and capacity to act as 'smart purchasers', with a clear understanding of their own needs and consistent models for procuring technology, particularly telehealth. Collaboration with suppliers and other experts is therefore essential for developing a mainstreamed and sustainable remote care service. However, maintaining collaborative relationships with a highly fragmented NHS is costly and unrewarding.

Moreover, fragmentation on the demand side means that care service providers do not have strong enough market muscle. The NHS as a whole has not used its buyer power sufficiently to drive the procurement agenda because multiple organisations are buying in small quantities, individually. There is concern that this problem may get worse following introduction of a large number of CCGs.

*“There's more that could be done to say 'we expect these standards to be introduced within a given time frame', so when you set contracts today people are committed to actually achieving levels of functionality in the future that meet the central goals.”*  
(Remote care consultant)

Secondly, suppliers are critical of the Buying Solutions Framework Agreement, a centralised remote care procurement route for public sector organisations. While this is seen by health and social care organisations as a useful way of checking product availability and pricing, suppliers suggested that inclusion on the framework is partly a matter of 'ticking the right boxes'. Low inclusion criteria do little to encourage the competition essential for the development of a dynamic industry and healthy marketplace. Suppliers also argued that the framework encourages the view amongst NHS buyers that telehealth systems are simply 'devices'. Tender documents are often simply a list of desired products, with little understanding of the way these needed to be integrated into a service model.

*“You just buy some devices and away you go. But in reality, people (should be) buying a system, and whereas the device that they bought may have a life of three years, the software, the skills, the training, the organisational knowledge of it would probably stick around for ten to fifteen. But people weren't buying stuff with that in mind.”* (Technology supplier)

### 3. The UK remote care supply industry and challenges to market development (continued)

#### There are also problems on the supply side

The current remote care industry in the UK comprises an ecosystem of different companies and organisations providing hardware and services. As well as the suppliers of home hubs and peripheral devices such as sensors, there is a diverse range of other companies involved in various segments of the remote care market:

- Telecare alarms and sensors for use in the home environment, largely purchased by social care authorities.
- Telehealth monitoring devices for use in the home environment, purchased and used by local health trusts
- Monitoring centres, responsible for receiving and responding to telecare (and sometimes telehealth) data
- Telecommunication operators (both the traditional networks and mobile operators) which enable the transmission of patient readings and subsequent feedback. These could be responsible for the management of a large volume of secure data traffic if remote care reaches its potential.

There was an acceptance amongst our interviewees that some of the challenges in scaling-up remote care will spring from the current structure of the supply industry. The key points from the interviews are:

#### **The industry remains small-scale and fragmented**

While large players are becoming increasingly involved in the UK, the typical firm is small. The core device manufacturing sector is concentrated in South East England, where there were 47 companies generating more than £550 million in sales and employing around 2000 people in 2009<sup>16</sup>, suggesting that the typical company is an £11m turnover, 40-person business. The most recently reported global turnover of the UK's largest remote care supplier, Tunstall, was £190m. A trend towards mergers and acquisitions within the industry seems likely – Tunstall has acquired American Medical Alert Corp (AMAC) and STT Condig. In general, though, the UK sector is dwarfed by the larger global players. For example, Philips' home healthcare division (which includes a range of products as well as telehealth) had an annual global turnover of €1.2bn in 2010, including €285m in Western Europe.

*“The telehealth market is, despite what some vendors would say, wide open. There's no definite market leader or market leading product ... There are about 50 or 60 different implementations around the country. We know that all but about five of those are less than 50 (patients), so it's very, very small, very isolated. It's very 'early days entrepreneurial' in terms of what they're talking about and now a few people are moving to scale.”*  
(Remote care expert)

*“With very few exceptions the telehealth market is at an embryonic stage in the UK.”*  
(Technology supplier)

**No single player has all the capabilities to provide an integrated remote care service, so partnerships will be needed to bring solutions to market.**

Future business models will therefore be shaped by the particular configurations of partners and their different roles within the overall remote care value chain. A company could be active in several, even all, areas such as hardware supply and service delivery, as well as telecare and telehealth.

#### **It is still hard to identify suitable business models.**

The key features of a successful business model are an identified market, a value chain to create and distribute the offer, an understanding of the value chain's cost structure and profit potential, and understanding of the roles of different suppliers in the value chain, and finally – for private sector companies – a competitive strategy to gain and hold advantage over rivals.

In remote care in the UK, these features are only partially developed. There are many narratives for the remote care 'story' – it is about prevention, risk management and supporting independence.

And the technology is variously described as 'telecare', 'telehealth', 'telemonitoring', 'telemedicine', 'assistive technology', 'telehealthcare' and sometimes 'smart homes'. The imprecise terminology allows many different industry players to describe themselves as being part of the market for remote care technology, but it also makes it hard to clearly describe the 'customers' for remote care, what they value, and how money is made.

*"We saw a telecare group moving across to telehealth, not in terms of what they could do but just realising that there is another market which is beginning to do better. And I think that has been a bit of a mistake. I think we lost the focus somewhere and some people would prefer to call it all 'telecare', but it is not telecare and telehealth (means) a different thing. I prefer 'remote care' myself or 'hospital without wards'. "(Technology supplier)*

Another fundamental problem in the development of remote care business models has been the absence of definitive evidence for its benefits. From the perspective of a health or social care organisation, a lack of evidence makes it hard to develop a business case for investment; for suppliers business models remain hard to pin-down because it is unclear what the value proposition is or how to price it.

*"There's not enough evidence, which is why so many people are waiting for the results of the national trial. And then I think you'll find that the marketplace will take off, providing the results come back in a positive way. And if they don't come back in a positive way or they're inconclusive I think that will really hinder the market." (Service provider)*

*"(It's) very difficult to get people to invest because the evidence base is very limited. There is evidence but even when there's evidence, the clinical profession, who only ever work on evidence based activity, still can't quite get over that hump of 'well it is evidence and it does work but I'm not sure if I want to risk it.'" (Service provider)*

*"I think people were always a little bit shy and didn't (discuss economics)... you know, talking about the patient, and it is all about the patient. Whilst it is all about the patient, there is a place for the economics ... it's only been in the last six months where people have been open about that." (Technology supplier)*

The cost of remote care services was frequently raised not only as a barrier to adoption but also in relation to the evolution of a remote care industry and market. Competition amongst technology suppliers has emphasised technology development but also the cost of solutions to service providers. The challenge for suppliers is how to balance a 'one size fits all' approach – with sufficient adaptability to respond to future patient needs and expectations – and a mass-customised model designed around the specific needs of end-users but using standardised components.

Who bears the cost of equipment and services – whether 'one size fits all' or more customised – is, of course, a crucial factor in business models, and one that is related to the prevailing payment and reimbursement models and eligibility criteria for remote care. The problem is that these have yet to be developed (in the case of NHS provided telehealth) or they vary according to local circumstances

and priorities (in the case of local authorities and telecare). Although policy emphasises the importance of prevention and earlier intervention across health and social care, local authorities do not have sufficient resources to provide telecare to both critical and lower needs populations, hence most prioritise the former. And for telehealth, the discussion about eligibility and payment models has not even begun.

### **The immaturity of products and continuous innovation adds to supply side complexity.**

It was noted how competition essentially emphasised product development and technical solutions, meaning that, from an end-user point of view, the market looks complex and unstable. As one technology supplier put it:

*"It has to do with the innovation life cycle. None of the real telehealth and telecare providers has a mature product, so they are still creating innovation to capture market share. Currently it seems that forever they will release a new product or new features, making it difficult for the end users."*

### **There remain significant problems with interoperability, information exchange and 'technology lock-in'.**

Re-procurement of remote care technology is estimated to be necessary every three and five years, when equipment reaches the end of its lifecycle. However, service providers argued that it is not easy to change suppliers. This is partly due to interoperability issues and the low levels of co-functionality that exist amongst remote care devices. Changing the equipment can mean changing the whole infrastructure at great expense. Service providers argued that staying with the same supplier might therefore be a better option, both for cost reasons and to build a sense of stability and continuity for end-users.

Interoperability also has implications for the fragmentation of care services. While there is emphasis in policy and research on the integration of services, supply side interviewees felt that the inability of social and health services to exchange would ensure that dreams of 'whole system working' remain dreams.

Prospects for the industry to come together to decide on standards and interoperability issues were felt to be higher within rather than across the health and social care silos. In the immediate future, suppliers argued that the Buying Solutions framework agreement should be reformulated to ensure that interoperability standards are built into the procurement model. In the longer term, there was hope from both suppliers and service providers that an open source platform would be developed, enabling devices to be mixed and matched. This was felt to be essential for the growth of a self-pay 'elective' remote care market.

### 3. The UK remote care supply industry and challenges to market development (continued)

*“We’re stuck with the equipment we’ve got...but we can, dependent on budget, purchase certain other equipment.” (Service provider)*

*“If we change the supplier, as it stands we’d have to change pretty much everything. So we’d have a huge job on our hands. It’s not interchangeable ... the devices in the patient’s home wouldn’t therefore work with the software back in the base, so it’ll be a big issue.” (Service provider)*

*“All the kit that’s installed is developed by (company name). You can’t feasibly mix and match telecare equipment ... Every now and again it improves and then there’s another advance and there’s lock down again ... and it goes around in circles.” (Service provider)*

#### The ambitions of the supply side

Despite the current challenges faced by remote care suppliers, they have major ambitions for the future, referring to the five ‘Rs’ of remote care – the ability to provide the ‘right approach at the right time for the right cost for the right reasons in the right place’. The majority also aspire to offer a more integrated service rather than just providing equipment. Interviewees unanimously referred to their goal of becoming a ‘solution provider’, arguing that they have the capacity to provide an end-to-end seamless remote care service. This would allow them to gain greater control over telecare and telehealth value chains, with the supply of equipment being a smaller part of their offer.

Suppliers argued they were beginning to feel more confident that they have developed the capabilities to do this. So far, developing a more holistic role has involved helping health and social care providers not only with technical and operational issues such as training, installation and repair, but also with support on the development of business cases – drawing on their own studies of remote care effectiveness – and on service redesign around remote care.

But a wider role in service provision might see suppliers moving into and consolidating the monitoring and call centre sector, with a set of standardised processes and agreed code of practice. This was felt to be more likely to happen with telehealth than telecare, given the embryonic state of the former and lack of knowledge within health trusts about how to use the technology to its full potential.

There was general agreement amongst the suppliers that in the longer term there will be an increased role in telehealth services for the private sector. A quasi-private telecare model already operates for those who do not meet the Fair Access to Care<sup>iv</sup> criteria, and growth in self-funding models is seen as a possible direction for telehealth. This, of course, raises fundamental questions about the nature of NHS provision and attitudes from health and social care providers were often at odds with this ambition.

*“I personally don’t like the telehealth private sector providers who want to run the telehealth service for me ... Why am I employed if somebody is going to run the thing for me?” (Service provider)*

*“The role of the private sector depends on the cost. You might get an organisation coming in that says they can provide the service. I don’t think they’d be able to do it with the same expertise and as cost effectively as we could, so we would fight them tooth and nail.” (Service provider)*

*“They don’t provide the service, they provide the tools.” (Service provider)*

\* \* \*

There are clearly problems of structure, evidence and business development that the supply side itself needs to address if it is to grow to an appropriate size to both meet its own ambitions and cope with the planned growth of remote care. Suppliers argue that they have the capacity and ambition to do a great deal more than the demand side currently seems willing to require.

But poor supply side development appears, to a considerable extent, to be an economically rational response to uncertainty in demand for remote care. If demand is a major problem for stimulating supply, how do we transform the transactional framework to create change and achieve what is the ambition of both government and the supply side?

#### Notes:

- iv. The system, applying to all local authorities in England, for ensuring fair and consistent decisions about how much support people with social care needs can expect.





*Widespread adoption of remote care will require more than is currently proposed under government policy.*

## 4. Options for transforming the remote care market

### More centralised spending on remote care?

In principle, a more *dirigiste*, centrally-controlled approach on the demand side could tackle many of the issues we have outlined. It would result, for example, in clear and predictable levels of demand, against which the supply side could plan and grow. It could also create a forum in which might be generated the missing cost-effectiveness data about remote care, and so reassure and inform the future spending decisions of healthcare organisations. This could create the conditions in which the supply side, particularly in telehealth, might grow in size and make the transition from manufacturing to service provision.

However, the localist philosophy that underpins current NHS policy would seem to rule out the widespread introduction of remote care by writ. And there are many concerns about the extent to which even large pilots such as those under the DALLAS – Delivering Assisted Living Lifestyles at Scale – programme can result in eventual widespread adoption of remote care. It seems clear that the government would prefer the functioning of a more spontaneous market. Therefore, we need a proposal that might stimulate development of such a market.

### Merging the provision of health and social care?

The historic divisions between health and social care continue to make it difficult to reduce the number and diversity of interests on the demand side. Closer integration between health and social care would not eliminate silo-working but it would make matters easier, reducing the numbers of stakeholders and problems related to cost-shifting between the two systems. However, such a transformation, although an historic panacea for many policy-makers, seems unlikely to occur soon.

### Any other options?

If the remote market can be steered by central government only to a limited extent, and bureaucratic divisions cannot simply be removed by institutional reform, what is to be done to push health and social care provision in the direction that so many see as necessary?

In the absence of radical change, remote care advocates will need to create a sophisticated evidence base and a framework for mutual collaboration that incentivises the multiplicity of stakeholders all to move in the same direction. Once different commissioners have engineered shared objectives and visions, a substantial market could effectively have been created for remote care, allowing the supply capacity to grow. How is this to be achieved? We suggest a possible way forward.



## A new type of partnership for remote care

The current imperfections in the market for remote care have resulted in a vicious circle, leading to sluggish demand and supply sides each inhibiting one another. This suggests a need for new institutional relationships that bring the two sides together more effectively, creating a close dialogue that stimulates each and creates a virtuous circle.

The importance of better partnerships was supported by our interviewees. Suppliers complained that a 'partnering philosophy' is lacking in the public sector (even though technical interoperability problems described above ensure that suppliers and customers are tied together for the medium term at least). Relationships were perceived as time consuming and labour intensive because of the fragmentation of local approaches to payment and reimbursement or eligibility criteria, and levels of experience or understanding. Much time was spent on trying to maintain the interest of potential customers. According to one technology supplier,

*"It does not matter how much effort you put into relationships building and whether you bend over backwards to satisfy them. They will dump you if someone new comes along."*

**Suppliers argued for a move from supply chain relationships that were purely transactional towards ones that involved closer collaboration and knowledge sharing.** They would like strategic supplier-purchaser alliances, with contracts reviewed periodically to address changing demands, new market development and performance. This was seen as a way of helping to identify innovative new models for remote care, and increasing their organisational capabilities and competitive advantage. The benefits of such an approach could be simultaneously to generate greater confidence in remote care on the demand side, while increasing certainty of income generation to remote care suppliers.

There are encouraging signs that were this more trusting environment to be engineered, suppliers would respond creatively and effectively. Suppliers involved in the WSD programme emphasised that it helped build closer

relationships with service providers, going beyond that of subcontractor and facilitating shared learning and the joint development of operating principles.

**A move towards strategic supplier-purchaser alliances was felt to be increasingly necessary as remote care began to develop in its scale and scope.** Suppliers and service providers both agreed that, with more sophisticated forms of telehealth and telecare, the ability to retain greater control over service quality and supply chain performance would become more challenging. Greater supply chain complexity could be managed providing purchasers (i.e. health and social care providers) have:

- the capabilities to make clear strategic decisions from the outset, with a well-defined and agreed vision about their objectives and requirements
- there is regular control over supply chain performance, and
- there is open communication between all the partners

There is no obvious ideal model, but elements of public-private partnerships (PPP) that are designed to jointly deliver healthcare infrastructure and services, which are emerging in parts of Europe may offer some lessons. These PPP agreements are more all embracing than the traditional UK PFI model, which only covers infrastructure and non-clinical services<sup>17</sup>. They bundle together activities – health services and infrastructure planning and delivery – to optimise outcomes, sharing risk more effectively between purchasers and suppliers, and using payment mechanisms between parties that incentivize appropriate behaviour. The Local Investment Finance Trust (LIFT) programme in England offers another example, where its projects brought together private contractors, local authorities and Primary Care Trusts into long-term partnerships to develop health and social care infrastructure.

**These types of PPP might provide greater certainty of income for remote care suppliers while removing some of the risk to the public sector, which make it averse to investing in remote care.**

## 4. Options for transforming the remote care market (continued)

### Recommendations

'Scaling-up' is not necessarily the same as 'growing large' – it's about normalizing practices, embedding them into, and changing, existing models, and in doing so, expanding impact<sup>18</sup>.

Constructing a shared vision of a remote care future will play an important part in creating the right institutional arrangements – ones with legitimacy across all stakeholder groups – for scaling-up remote care. As yet, that vision remains somewhat opaque, with rather limited understanding about the role of remote care in future health and social care models. A clearer vision should begin to emerge as better evidence about what works, when and where, is gathered. But to deliver that vision will require that certain limitations in the current care system should be addressed.

Many of these recommendations require detailed attention by policy makers, who now need to shift attention from looking at 'big solutions' to cope with emerging pressures on health and social care to the pragmatic changes that need to be put in place to facilitate greater adoption of remote care.

#### Leadership

Practical operational tasks such as training staff on how to do referrals and use the technology are insufficient to build the necessary shared language and vision to push large scale remote care implementation forward. Constant and sustained attention needs to be paid to the job of winning hearts and minds and maintaining commitment and momentum. That is easier if a cogent and 'joined up' approach to remote care is developed from inception. But achieving redesign of services around remote care will require organisations to be open to change and to embrace a culture that is prepared to experiment, allow for mistakes and collectively learn from them.

**Strong senior leadership is key to constructing a shared vision, engaging staff and selling remote care to an organisation-wide audience, and for legitimising any increased risks and resources involved in scaling-up remote care.**

*"If you leave change to local authority or NHS nothing is likely to happen. Saying that clinicians are much more interested in innovation if you show them clinical evidence (is not enough) ... They will think it is a good idea, not that it needs to be adopted." (Technology supplier)*

#### Addressing fragmentation on the demand side

Developing remote care services on a larger scale requires new levels of integration between different care organisations, refocused beyond individual patient benefits to the wider system benefits such as reduced unplanned hospital and care home admissions.

Remote care technologies could be a catalyst for new levels of collaborative working across health and social care. It will, however, be vital to ensure that the opposite does not occur – the systemic problems of silo-working in health and social care could frustrate the comprehensive implementation of remote care. **Nor is the growing separation between telecare and telehealth, both in the narrative around remote care and in practice, helpful because it will continue to reinforce fragmented thinking.**

Developing new strategic partnership models will have to overcome lack of trust across organisational boundaries as well as the current fragmentation and duplication of processes, with different organisations following different protocols.

A better understanding of how the costs and benefits of remote care are spread across stakeholders in different parts of health and social care would help by highlighting the financial disincentives for some stakeholders to implement remote care and helping decisions about how to address them.

## Business model development

New business models for remote care will have to deliver a return on investment that is acceptable to the different stakeholders from both the demand and supply sides. It is therefore important to continue the collection of robust evidence in order to demonstrate to service users, as well as to the health and social care professionals and purchasers who influence service configuration, whether remote care is a 'must-have'.

But, even if the economics are shown to be compelling at a macro-level, we must understand better how remote care impacts both positively and negatively on specific parts of the health and social care system, and over different timescales. Greater use of simulation and modelling could help to harness the emerging evidence base to this end by highlighting the potential impact of remote care across the care system, over time and under different assumptions about the speed and scale of implementation.

In the immediate future, business models for the provision of remote care within the NHS and social services-led care systems are needed. In the longer-term, though, there may be untapped potential in the market for 'elective' rather than 'prescriptive' remote care. Since this market exists outside NHS provision, it may be easier for suppliers to access. The development of personal budgets and direct payments is a key social care policy objective for the government, which may, in time, give individuals greater influence over their remote care provision<sup>19</sup>.

“*Policy makers need to shift attention from 'big solutions' to pragmatic changes which can facilitate remote care adoption.*”

## Disincentives in the NHS tariff

Remote care may have implications for the NHS tariff. At present, healthcare providers are paid according to a tariff system based on the average cost of a group of procedures. This is based on current practice and would not subsidise the extra, short term cost of introducing remote care, even if it improved the quality and effectiveness of care over time. This was recognised in Sir Ian Carruthers' review of NHS innovation adoption<sup>20</sup>, which states that financial, operational and performance incentives to support the adoption and diffusion of innovation will be aligned and, in particular, a tariff for telehealth and telecare will be developed. This is to be welcomed. It will, however, also be **important to consider the implications on the income of hospital trusts of scaled up remote care** – if it improves efficiency by reducing activity, an NHS provider could expect to be penalised because its income would be reduced under the tariff system.

## Who are the clients of remote care?

If the identification of individuals who can most benefit from remote care is to improve, it will have to be easier for health and social care professionals to 'prescribe' it. This will require greater awareness of the technology's potential in relation to an individual's evolving needs. **The availability of a shared health and social care record keeping service and electronic national 'single assessment process' could help.** However, progress has been disappointing, with data sharing among NHS staff remaining poor, and unlikely to be easier if social and community services are also involved.

## Supporting the remote care industry?

Some interviewees highlighted the lack of government support for UK-based SMEs developing remote care products, which were perceived to be highly innovative but facing an uphill struggle in both moving from the prototype stage to larger trials and also in marketing their products in a highly fragmented system. Better financial support to address the former was seen as essential and there were calls to find ways of encouraging PCTs and local authorities to 'buy British'. It was also suggested that telehealth products should be treated as medical devices to tackle perceived competition from low cost products from foreign suppliers which have not been through the same quality assessment checks as UK devices.

## 5. Conclusions

There are many positive factors which should support future development of the UK's remote care industry. There is government support through policy backing and funding. Remote care is a significant research area, creating a potential pipeline of superior next generation technology. The UK also has considerable expertise in research on its impact and implementation challenges. There are organisations geared towards promoting the uptake of remote care technology, such as the Telecare Services Association and the South East Health Technology Alliance (SEHTA), as well as various knowledge transfer networks.

There is market potential for greatly expanded remote care, which should benefit suppliers. The age and morbidity characteristics of the population will attract new companies into the arena, encouraging innovation and improving competition in the industry. There may also be untapped potential through a market for 'elective' – individually paid for – remote care.

But there is also a danger that current momentum will be lost and insufficient investment will be made to make the most of opportunities due to weaknesses in the current market. Current schemes are generally small-scale and lack coherence. There could be continued 'pilot-itis', with lessons learnt from pilot projects not disseminated sufficiently or accepted locally, resulting in duplication of effort and lack of standardisation nationally. Procurement of equipment and services is complicated and fragmented. Critically, delivery of remote care at scale requires a degree of integration across multiple stakeholders from the private and public sectors. Payment and reimbursement models, along with eligibility criteria under the NHS, remain to be developed.

It is hard to escape concluding that the widespread adoption of remote care will require more than is currently proposed under government policy. Our report suggests options for more imaginative approaches which would change the transactional framework in which the demand and supply sides operate. Some new form of partnership is required, providing the environment in which both the demand and supply sides are catalysed and can grow to their potential.

The healthcare economy that succeeds in creating such an environment and engineering this transformation will develop skills, expertise and knowledge that can be exported across the world.

## 6. Annex 1

# What do we mean by 'remote care'?

**Remote care** involves the delivery of health and social care to individuals within the home or the wider community with the support of ICT enabled systems. Many terms are used interchangeably to describe remote care<sup>3</sup> such as:

- 'Telecare'
- 'Telehealth'
- 'Telehealthcare'
- 'Telemonitoring'
- 'Telemedicine'
- 'Assistive technology'
- 'Smart homes'

In this report we focus on aspects of remote care which relate to the delivery of two types of service – 'telehealth' (i.e. monitoring an individual's vital signs) and 'telecare' (i.e. monitoring an individual's mobility and general safety in the home). Currently, monitoring in both cases is usually in people's homes, although there is no reason to suppose that, as the technology develops, remote care cannot be extended to the workplace or anywhere an individual moves.

A distinction is usually made between telecare and telehealth because in the UK – as in other countries – responsibility for providing health and social care remain split between different agencies. Currently, telecare is essentially a safety net for vulnerable people, a responsive service whereby social services intervene when a problem is detected. However, in time, it could evolve into a more preventative model, where trends in a vulnerable individual's activities of daily living are used to detect the onset of increased care needs.

Telehealth is essentially a trend management service, allowing patients and care staff to manage particular long-term conditions. Clinical knowledge is required, the relationship between the individual and health service is arguably more pro-active than reactive, and patients have an active role in their self-management. It therefore has a potentially vital role in the creation of more preventative healthcare.

We also need to draw a distinction between telecare / telehealth and 'telemedicine' (see table below). Telemedicine typically involves consultation with a doctor or specialist, at a distance, about a specific condition, for the purposes of diagnosis or referral. The relative simplicity of telemedicine compared with telehealth – an inherently more complex system to set up, involving monitoring people in their own homes, multiple organizations and complex informational and financial relationships – probably explains why telemedicine is now more widespread around the world.

**Notes:**

- v. For a good discussion on terminology see [www.telecareaware.com/index.php/what-is-telecare.html](http://www.telecareaware.com/index.php/what-is-telecare.html)

### Key characteristics of telecare and telemedicine

| Telemedicine   | Telecare   |
|--|--|
| Aimed at diagnosis or referral, usually focusing on specific conditions                        | Brings care directly to the end-user generally in a non-institutional setting    |
| Lots of 'tele-ologies' (e.g. teledermatology, teleradiology)                                   | Focus on monitoring for prevention or safety and security, or advice and support |
| Can work in real time or on a store and forward basis  | Can work in real time or on a store and forward basis                            |
| Essentially a B2B model (i.e. between health professionals, possibly with the patient present) | Essentially a B2C model (patient centred, and always present)                    |
| Few stakeholders, so relatively easy to implement  | Many stakeholders, so far more complex and inherently harder to implement        |

## 7. Annex 2

# The policy background

Since 1998, there have been at least 25 government and other official reports calling for greater use of remote care in the UK. At least £160m of public funding was spent across the UK on initiatives to support uptake over the period 2006-2012.

The largest initiatives have been in England, starting with the Preventative Technologies Grant (PTG) during 2006-8. This was an £80m programme to provide all social care authorities with funds to invest in telecare so that 160,000 older people could 'remain independent at home'<sup>21</sup>. The PTG was positioned as a catalyst for change, giving local service providers in England the push they needed to trial remote care services. However, the funding was not ring-fenced, leading to huge discrepancies in levels of remote care spending and activity, with some organisations progressing well but others making little progress.

Other programmes were set up in Scotland and Wales. Between 2006 and 2011, the Scottish Government made £20m available to run the Telecare Development Programme to increase access to telecare for 44,000 people<sup>22</sup>. In Wales, all 22 local authorities were awarded funding in 2006 to provide 10,000 homes with a telecare service<sup>6</sup>. After a slow start, Northern Ireland plans to introduce telehealth for 3,500 people per year over the period 2012-18<sup>23</sup>.

Following these initiatives, the focus shifted away from providing cash to kick start projects to generating evidence of clinical and cost effectiveness. This was seen as critical in providing support for those making remote care investment decisions and those using it, both clinicians and the public.

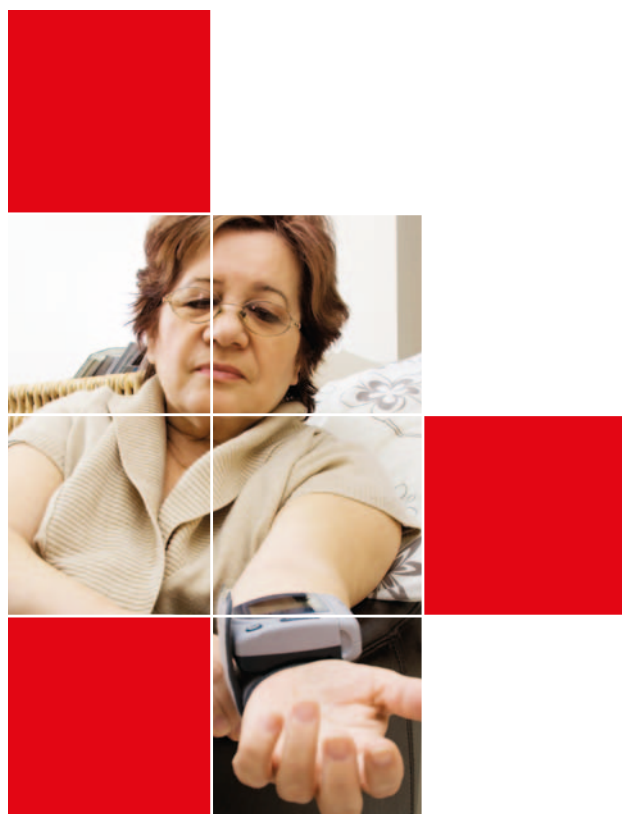
The Whole System Demonstrators programme was therefore established, with funding from the Department of Health, to provide 'gold standard' evidence of whether remote care benefits individual users, can deliver significant health improvements and is a cost effective means of future care delivery<sup>24</sup>. The programme included what is thought to be the largest randomized control trial of remote care undertaken so far, involving over 6000 patients and 238 GP practices across three sites in England. The telehealth part of the trial focused on diabetes, chronic heart failure and chronic obstructive pulmonary disease<sup>25</sup>.

Remote care remains firmly on the policy agenda following WSD. The DALLAS (Delivering Assisted Living Lifestyles at Scale) programme is funded with £23m by the Technology Strategy Board, National Institute for Health Research, the Scottish Government, Highlands and Islands Enterprise and Scottish Enterprise. It aims to establish three to five communities of 10,000 people each or more across the UK showing how assisted living technologies and services can be used to promote well-being and provide high quality health and social care, enabling people to live independently. The *3millionlives* initiative was established in late 2011 as a collaboration between the private sector and health and social care authorities to ensure that 3 million patients benefit from telehealth between 2011 and 2016.



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## The HaCIRIC online library ([www.haciric.org/library/haciric-publications](http://www.haciric.org/library/haciric-publications))

The HaCIRIC website provides access to all publications developed as a result of our research work, as well as links to material developed by others in the field.

These include the following:



### Complex Healthcare Made Simpler

HaCIRIC September 2012: Advances and opportunities in improving healthcare delivery using modelling and simulation.



### Controlling Healthcare Acquired Infection

HaCIRIC September 2012: New learning on how performance management and design can reduce HCAI.



### Adaptability and innovation in healthcare facilities: lessons from the past for future developments

James Barlow, Martina Köberle-Gaiser, Ray Moss, Ann Noble, Peter Scher, Derek Stow: HaCIRIC, The Howard Goodman Fellowship. September 2009 Reviews capacity for innovation in PFI hospital building programme, contrasts it with earlier NHS hospital building programmes and suggests lessons for the future.



### How should we create 21st century healthcare infrastructure to deliver best value?

Our HaCIRIC Insights document, published in September 2011, sets out key findings and expertise developed during Phase 1 of the HaCIRIC programme. The document details how HaCIRIC is expanding the evidence base linking infrastructure and health outcomes, improving decision-making and helping to future-proof healthcare infrastructure.



### Better Health Through Better Infrastructure

This report reviews the Centre's projects and sets out a vision for the future of HaCIRIC.



### Meeting Tomorrow's Healthcare Challenges Today:

HaCIRIC September 2010. Sets out the four big issues on which HaCIRIC is focussing – safer patients, home not hospital, smarter purchasing and better decision-making.



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