

# Using digital technology to improve the public's health

A guide for local authorities

# Foreword

The digital world has transformed our daily lives. Ten years ago, for many it would have been inconceivable that we would be shopping, banking and socialising online; that we would have technologies like voice-activated gadgets that can do everything from play music to switch on the lights in our homes; even that the way we watch television would be totally changed. Yet, for many that's the new reality.

But what about the world of public health? One change has been the increasing popularity of health apps. A study in 2015 found there were over 160,000 on the market.

Public Health England (PHE) has been at the forefront of that with its award-winning Change4Life sugar smart app, which uses the camera on a mobile phone to scan barcodes on food, as well as Couch to 5K.

Meanwhile, social media has for some time been an essential tool for communicating with residents. Nearly all councils use Twitter and Facebook to promote the work they do, and these channels as well as platforms like Instagram, WhatsApp and even dating apps like Tinder are increasingly becoming the focus for some very innovative behaviour change marketing.

However, digital public health is about so much more than apps and social media. Up and down the country councils have been working with their partners – both public and private – to innovate and pilot new ways of working.

This includes a text messaging service for pupils to contact school nurses, wearable sensors to prevent falls and one council is even piloting using Amazon Echo to help keep people well in the community.

But digital technologies are not just useful for delivering services, they can also be used to help us plan services.

Technology allows us to gather evidence and data in new, different and more comprehensive ways. PHE has a range of tools, including SHAPE, which allows users to map services against national datasets, while the Local Government Association (LGA) LG Inform service enables comparisons for a range of health data between local areas.

This report reflects a snapshot of what is going on. Five years from now the picture will look very different again. That is the nature of the fast-changing world of digital technologies. It is one we in public health cannot afford to be left behind on.



**Councillor Izzi Seccombe OBE**  
Chairman, LGA Community Wellbeing Board

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# Introduction

In an era of constrained budgets, it is clear making the most of digital technology is essential. It can drive efficiency and deliver value for money in a multitude of ways as well as benefiting the health and wellbeing of individuals.

For example, in Hertfordshire wearable sensors worn during an exercise class have allowed for a quick and accurate assessment of an individual's fall risk instead of a half-hour assessment taking place.

Meanwhile, in London a pilot where pharmacies used a handheld mobile device to test for irregular heartbeats has reduced the time from testing to treatment from 12 weeks to under three. Both of these examples are included in the case studies which feature later in this report.

New technologies are also vital to engaging the public on prevention and putting them at the heart of what we do. An evaluation of the Change for Life sugar smart app following a six-week advertising campaign in early 2016 showed it led to 2 million downloads. A third of parents surveyed reported it had led to reductions in their child's sugar intake.

In fact, PHE has highlighted digital technology as one of the drivers for change in its report *From Evidence into Action: Opportunities to Promote and Protect the Nation's Health*.

## What next?

There is plenty of help at hand. The LGA has produced a suite of publications about how to engage citizens and how to use technology to transform care.

PHE has a digital strategy that sets out the vision for the future, while the Cabinet Office's Government Digital Service also provides support and expertise.

Links to these and more resources are listed in the following section, but there are some simple questions you should ask yourself first of all.

Here's five of the key ones:

- Do you know what your citizens and staff require? Have you identified priority areas with them?
- Do you and your senior stakeholders have a clear vision? And has it been co-designed by service users and citizens?
- Is there political engagement and backing?
- Are frontline staff championing and leading change?
- How are you going to assess the impact of change?

# Ten top tips

1. Start small and iterate widely. This is known as the 'agile approach' to digital development and differs from the normal public health tactic of working towards a predetermined set of outcomes and deadlines.
2. Provide on-the-ground support. When you ask people to pilot new technologies they need easy to access support to troubleshoot and deal with problems.
3. Build digital services, not websites or apps. A service is something that helps people do something. That may be on the internet, but don't make the mistake that this is simply about putting information on the website or creating an app people don't want to download or use.
4. Work out your digital maturity. Before a digital transformation journey it is useful to benchmark where your organisation is by carrying out an audit of skills, capabilities and culture. NHS England and the LGA both have self-assessment tools.
5. Make sure apps are 'sticky'. There are thousands of different health apps out there. The best stick, which means they entice the user in and keep them engaged. Key to that is that they are self-explanatory, use friendly language, offer instant gratification and regular feedback. The 'stickiest' apps also offer something new: so do your research to find out if there is another app offering what you propose, as if there is a similar national app performing well already you may be better to save your resources.
6. Digital-first planning. Digital should be designed as the default option in planning and designing services, not just an add-on.
7. A digital media campaign needs to be outcome focused and driven by well-researched data on what 'pushes and pulls' people towards or away from certain behaviours – just pushing information out on Facebook or Twitter won't deliver the results you need.
8. Remember to think digital when doing your research. Digital technologies offer huge potential in terms of gathering intelligence.
9. Make sure safeguards are in place. If you are using digital technology to deliver services a system may need to be considered to identify and act when people are at risk.
10. When marketing technology remember that people will often be more attracted by messaging that emphasises how change to the technology will help them proactively take control of their lives, rather than if they are encouraged to see it as a sign of frailty.

# Want to know more?

## **LGA Digital Councils pages**

[www.local.gov.uk/our-support/guidance-and-resources/communications-support/digital-councils](http://www.local.gov.uk/our-support/guidance-and-resources/communications-support/digital-councils)

## **Transforming social care through the use of information and technology (LGA report, 2016)**

[www.local.gov.uk/transforming-social-care-through-use-information-and-technology](http://www.local.gov.uk/transforming-social-care-through-use-information-and-technology)

## **Engaging Citizens Online (LGA briefings)**

[www.local.gov.uk/our-support/our-improvement-offer/care-and-health-improvement/informatics/engaging-citizens-online](http://www.local.gov.uk/our-support/our-improvement-offer/care-and-health-improvement/informatics/engaging-citizens-online)

## **The agile approach to digital development (Government guide)**

[www.gov.uk/service-manual/agile-delivery/agile-government-services-introduction](http://www.gov.uk/service-manual/agile-delivery/agile-government-services-introduction)

## **PHE digital strategy Feb 2017**

[www.gov.uk/government/publications/digital-first-public-health/digital-first-public-health-public-health-englands-digital-strategy](http://www.gov.uk/government/publications/digital-first-public-health/digital-first-public-health-public-health-englands-digital-strategy)

## **PHE Fingertips tool**

[fingertips.phe.org.uk](http://fingertips.phe.org.uk)

## **PHE SHAPE tool**

[shape.phe.org.uk](http://shape.phe.org.uk)

## **Government Digital Services (part of Cabinet Office)**

[gds.blog.gov.uk/about](http://gds.blog.gov.uk/about)

## **The A to Z of digital public health (PHE blog 2016)**

[publichealthmatters.blog.gov.uk/2016/07/22/%EF%BB%BFthe-a-z-of-digital-public-health](http://publichealthmatters.blog.gov.uk/2016/07/22/%EF%BB%BFthe-a-z-of-digital-public-health)

## **NHS England digital maturity assessment**

[www.england.nhs.uk/digitaltechnology/info-revolution/maturity-index](http://www.england.nhs.uk/digitaltechnology/info-revolution/maturity-index)

# Case studies

# London

## Creating an online platform to help mental health

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### Summary

Local authorities and clinical commissioning groups (CCGs) across London have come together to set up an online platform to provide help and support to people with mental health problems. The service is interactive so provides a personalised offer to people depending on what they search for.

### The challenge

Two million Londoners experience mental ill health every year – a figure which is increasing all the time.

But despite this large number, many do not get the help they need. An estimated three-quarters of people in the capital with depression and anxiety go without any treatment at all.

There are a variety of reasons for this. Some people may not actively seek help, while others may struggle to access services given the pressures they are under.

Instead, significant numbers rely on the internet and social media, searching for self-help options to help them deal with their mental health problems.

### The solution

Eighteen local authorities and all the CCGs across London came together four years ago to start looking at an online solution to the growing burden of mental ill health – and the London Digital Mental Wellbeing Service was born.

Now known as Good Thinking, it has also been championed by the London Health Board and includes input from NHS England and PHE.

A steering group of local, regional and national experts in public health, mental health and digital innovation has overseen the programme, which went through a rigorous period of testing before its launch in autumn 2017.

The 24/7 online service offers users self-assessment and provides them with advice of where to go for help, whether it be online apps and websites, or if needed, signposting to statutory services.

The service has invested in paid-for Google advertising so it will feature high on people's searches when they use key words such as "can't sleep", "mind racing", "I'm sad" or "loneliness".

The service serves content in an interactive way, so what is offered is tailored to what people have searched for, providing individuals with a personalised journey to self-help and self-care.

Users can publicly feedback on the service, which along with analytics data on users' journeys, means over time Good Thinking will be driven by users themselves.

### The impact

The model was soft launched over a three-and-a-half week period. During the pilot, over 400,000 key word searches on Google, Facebook and Twitter by Londoners struggling to sleep led to 3,500 clicking on to the platform to explore more.

Dr Jeanelle de Gruchy, Director of Public Health at Haringey Council and the chair of the steering group, says: "The service is reaching out to those people who would not necessarily come to the public sector for help or who are not getting support for their problems. We now want to see it really take off and thrive."



“Our intention is to have 50,000 Londoners use the service by March 2018. Reaching out to people through their own online communities means we can reach large, but targeted groups of people with empowering messages and self-help tools that they can trust as well as put them in touch with professionals who can help if needed.”

## Lessons learned

Dr de Gruchy says one of the major challenges has been to ensure that partners remained committed during the long development stage.

“Projects of this sort do take a long time and ensuring everyone retains their enthusiasm and belief takes effort. The fact that members of the steering group largely remained the same has helped. We have had a project team from the start that coordinated the work on a day-to-day basis, although brought in external expertise and support for the IT development and marketing.”

“But you can never lose sight of how important communication is. We had a lot of stakeholders and tried to provide regular updates about what was happening – a difficult task in the world of agile digital development but we strive to continue to improve this. Having chief executive sponsorship from local government and the NHS is another important aspect in steering a project like this. ”

## How is the approach being sustained?

The council and CCG partners each contributed £30,000 to the project, raising over £2 million to see it to launch and then take it through its initial roll out.

But now the team is beginning to look at alternative avenues for funding to ensure it remains sustainable.

“The portal will need to be maintained and updated,” says Dr de Gruchy. “Apps, advice and services are changing all the time. We may bring in a company to do that for us – it is something we have to look at now we have got it going.”

But Dr de Gruchy also hopes the service can provide a blueprint for other digital solutions to health challenges.

“There is no reason why we could not use it as the basis for a similar offer for stop smoking services or to facilitate social prescribing. The work has been done and we aim to build on it.”

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### Summary

Kirklees Council and the local Healthwatch organisation have worked together on a social media-based stop smoking campaign. The campaign targeted the areas of the borough with the highest rates of smoking and led to a jump in the number of people accessing help.

### The challenge

Smoking rates have been falling in Kirklees as they have across the country. But still, too many adults smoke with latest figures showing the smoking rate is above 16 per cent, and behaviour in some parts of the borough seems especially resistant to change.

In the past, Kirklees Council's public health team and Kirklees Healthwatch have worked together to encourage people to stop smoking. These have involved traditional poster campaigns, but they only had a limited impact.

Given that nearly two-thirds of the population are active on social media, it became clear the likes of Facebook, Twitter and Instagram were now important vehicles for public health messages.

### The solution

Last year the two organisations decided to work together in a different way, by running a stop smoking advertising campaign on social media instead.

The campaign focused on people who were due to have an operation.

Draft messages were tested by Healthwatch, who visited smoking shelters in hospitals, talked to patients and found that people would welcome a much stronger set of images.

This led to a redesign of the whole campaign. Out went family images of children and parents and grandparents to be replaced by hard-hitting pictures, such as a cigarette in a syringe.

Different adverts were created for Facebook – one targeting men and another women, while versions were created for mobile apps, websites and Instagram. Some included text focusing on clinic locations, while others mentioned reasons to stop.

After careful research, using the local joint strategic needs assessment, it was also decided to focus the campaign on those areas with the highest number of smokers – Mirfield, Cleckheaton, Batley and Dewsbury. Stacey Appleyard, Healthwatch Kirklees's communications and intelligence officer, says: "We decided it was important to tailor the messages. We wanted to make them engaging and get people thinking about their smoking."

### The impact

The adverts cost under £400 to produce and ran for one month during the summer.

Analysis showed more than 50,000 people saw the adverts and over 2,300 reacted to them by clicking on the images to learn more. There was also a jump in the numbers accessing the local Smoke Free website with 80 per cent of those who visited it during the campaign coming directly from the social media adverts.

There were differences in the way men and women engaged with the adverts.

For men, the younger age group – 18 to 35 – were the most likely to click on the adverts, while for women the click-rate was similar across all ages.

Ms Appleyard says: “We were delighted with the impact. It was our first social media campaign and to have achieved the reach we did was fantastic.”

## Lessons learned

Ms Appleyard says to make a success of a social media campaign like this it is important to put time and effort into planning it properly. She says the time spent researching the correct audience – both in terms of age and location can make a big difference.

“If we had targeted the whole of Kirklees it may not have been as successful,” she adds.

She also believes you need to be prepared to be flexible. “As the campaign progressed and it became apparent that younger men were among the groups most likely to engage with the campaign so it may have been useful to have targeted them even more.

“This is one of the distinct aspects of social media, you get feedback very quickly, on a daily basis, and how you react will determine the success of the campaign”

## How is the approach being sustained?

Since the smoking campaign was run, Kirklees has invested in a range of other social media campaigns. Some have been focused on getting users to take part in consultations.

For example, they have recently conducted a consultation on whether to restrict access to treatment for smokers and another on what areas of NHS support to care homes need to be improved.

This winter the annual “Stay Well” campaign is running on social media too.

Another project under way is #changetheconversation, which is part of the West Yorkshire STP process. It is exploring how to develop a different relationship between communities and NHS services where people recognise that it is lifestyle choices not the NHS that will have the greatest impact on health and wellbeing.

Kirklees Council public health consultant Emily Parry Harries says social media projects are now an important part of the armoury. “We’ve worked with Healthwatch a lot exploring how we can use social media to get targeted messages to specific communities. They can be more nimble than council services sometimes are which helps us to learn quickly the best way of targeting messages to specific groups.”

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# London boroughs of Barking and Dagenham, Havering, Redbridge and Waltham Forest

## Supporting people with long-term conditions

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### Summary

Four north east London boroughs are working with the local NHS and private sector partners to trial a range of different technologies to help people with long-term conditions. These include opportunistic testing in pharmacies for irregular heartbeats.

### The challenge

The London boroughs of Barking and Dagenham, Havering, Redbridge and Waltham Forest cover a population of over one million people. There are approximately 69,000 older people living with multiple long-term conditions and another 10,000 people with dementia.

Many of these rely on unpaid carers for their support. In fact, it is estimated that there are over 21,000 people who provide more than 50 hours a week of unpaid care.

Despite this, these groups are heavy users of the health service. One in four patients in hospital beds have dementia and every year there are nearly 3,000 hospital admissions following falls.

### The solution

Care City was set up at the beginning of 2016 by the North East London Foundation Trust and Barking and Dagenham Council. The aim of this social enterprise is to explore new ways of keeping people healthy and regenerating the area across the four London boroughs.

A key programme area is innovation in its role as one of NHS England's five health and care innovation test bed sites. Care City has received funding from NHS England

to help run a series of projects to increase independence, enhance self-care and improve carer resilience for the population.

These projects involve testing innovations which have been clustered around three core themes – dementia, long-term conditions and carers.

Perhaps the most advanced has been the pilot using a Kardia Mobile handheld mobile device developed by AliveCor, which can help diagnose irregular heartbeats, clinically referred to as atrial fibrillation (AF). AF is the most common heart rhythm disturbance.

Care City, collaborating with North East London Local Pharmaceutical Committee, Barts Health NHS Trust, Waltham Forest CCG and Sonar Information, is carrying out a pilot of opportunistic screening for AF in 13 community pharmacies across Waltham Forest.

Pulse checks using the Kardia Mobile device are offered to individuals in pharmacy who are over the age of 65 years.

The device can spot AF in 30 seconds and those with an abnormal result receive a rapid referral to a one stop AF clinic at Whipps Cross University Hospital where a patient will undergo tests and, where necessary, receive treatment.

### The impact

The whole process from testing for AF to receiving treatment has been reduced from the national average of 12 weeks to two to three weeks.

Nearly 700 patients were screened in the first year of the project and of these approximately 7 per cent were identified as having AF.

An independent analysis by University College London concluded it was cost-effective and predicted that if this was rolled

out across England an estimated 1,600 to 1,700 strokes would be prevented each year.

Care City Chief Executive John Craig says he is “proud” of what has been achieved.

“We’re showing how we’re collaborating with technology and all levels of the health and care community with a common endeavour to assist patients to pro-actively manage their health and ultimately save lives.”

“The data we collect from this testing will indicate how many people use the service, leave with a diagnosis and start treatment. It will also help us understand whether the service is good value for the NHS and whether adopting this one stop shop approach further across the UK is an effective and viable option.”

## Lessons learned

Mr Craig says one of the major focuses of Care City’s work has been to get implementation right.

“What people need to ask when trying out new technologies is ‘how do you translate high-potential digital gadgets into better outcomes and experiences and lower costs?’ While it is tempting for those championing a digital innovation to ask the NHS and local government to ‘just get on and implement’, it is rarely that simple.”

He highlights the detailed work that went into the AF project. Careful groundwork was undertaken to identify the right pharmacists to trial the technology and then to provide on-the-ground support to troubleshoot and a system to follow up patients so their experience could be monitored.

“Health and care services are always messier in practice than in theory,” he says. “To delight patients, change behaviour and make all the right resources and data go to the right place at the right time, innovators must be prepared for surprises and bumps in the road. That’s why our test bed focuses on ‘real world testing’ – putting innovations to work in core health and care services, not simulated or isolated research environments.”

How is the approach being sustained?

The next few years will see a host of new technologies piloted and tested just as the Kardia Mobile project has been. In total, Care City is working with seven technology companies. The projects include:

- HealthUnlocked, a social prescribing tool which enables health professionals to signpost or prescribe local support services and other beneficial resources that relate to holistic needs.
- Kinesis and Gaitsmart, two devices which assess falls risk and mobility using sensors attached to various parts of the body.
- Canary Care, a monitoring and notification system which aims to provide round-the-clock reassurance to family members while allowing older, vulnerable people to stay at home.
- Join Dementia Research, supporting local people to register their interest in participating in dementia research and enabling them to be matched to suitable studies in their area.
- St Bernard’s GPS Emergency Location Service reassures both the individual and their carer/s and family.

As each project progresses, Care City will be looking at how new technologies can be used in combination with the current system.

This approach is about combining the innovations with existing tools, services and technologies to understand how they can have the most impact and be integrated in a sustainable way.

Mr Craig says: “You cannot see these things in isolation. To sustainably improve the wellbeing and resilience of older people, you must take a holistic approach and work with existing services, tools and technologies to understand how the innovations might be integrated most effectively. We strive for this combinatorial approach to maximise impact on our populations.”

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# Leicestershire County Council, Leicester City Council and Rutland County Council

## Using mobiles to engage pupils with school nursing

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### Summary

Leicestershire's school nursing service has set up a text messaging service for secondary school pupils. It has helped the service engage hard-to-reach groups with pupils reporting it makes them feel more comfortable discussing sensitive issues.

### The challenge

Engaging young people in health services is essential. While rates of smoking, drug-taking and sexually transmitted infections are all falling, England still has higher rates than many other European countries.

Meanwhile, obesity rates remain high – one in three start primary school overweight – and mental health problems are rife.

But despite this, services can find it hard to reach out to young people.

The digital age though brings new opportunities to connect with young people.

Research suggests three quarters of children aged nine to 16 have a mobile phone so Leicestershire's school nursing service has been looking at ways to utilise this technology.

### The solution

The service – run by Leicestershire Partnership NHS Trust and commissioned by Leicester City Council, Leicestershire County Council and Rutland County Council – worked with young people to develop a text messaging service for secondary school pupils.

ChatHealth was launched in 2013 and is staffed by school nurses on a duty rota basis from 9am to 5pm during the week in both term time and school holidays.

The message is delivered to a safe and secure web application for the staff to view and pupils using it are guaranteed a response within 24 hours Monday to Friday.

Jimmy Endicott, Leicestershire's mobile media development manager, is delighted with how it has been received.

“The feedback has been great. ChatHealth is all about bringing healthcare to the smart phone generation who live their lives online – they bank, shop and communicate with family and friends online.

“But the health service doesn't typically work in that way. ChatHealth is about challenging that tradition to give people more choices about the ways they can get in touch. We really needed an innovation like this to engage with young people.”

### The impact

The service has proved to be incredibly popular. It is now available to about 65,000 pupils aged 11 to 19 across Leicester, Leicestershire and Rutland.

Those who use it are full of praise. One user says: “It allows us to express ourselves in a way we would with our friends and to know it is confidential makes us open up to other people other than our friends”.

Another says: “Sometimes you have things that are so embarrassing that you can't talk about so if you send a message it allows you to get over that and get the help you need”.

Sarah Fenwick, Leicestershire's lead for school nursing, says it has proved particularly effective with hard-to-reach groups.

“It has helped engage with teenagers who might feel less comfortable speaking face-to-face with nurses about embarrassing or sensitive issues.

“For example, adolescent males are more likely to ask a question by sending a text message. About one in five ChatHealth services users is male compared to one in 10 attending school nurses clinics.”

In fact, it has worked so well that Leicestershire has started supporting other areas to implement the system. Over 30 different places including Sussex, Shropshire, Greater Manchester and Norfolk are now using ChatHealth, meaning it reaches one million young people across the country.

## Lessons learned

In developing the service, Leicestershire recognised it was important to ensure that safeguards were put in place. The service did not want pupils to be contacting the service when they were in the middle of a crisis, but then waiting for a response.

So while a reply is guaranteed in 24 hours, an automated response was built into the service so users are given signposting information of where to go for help if it is needed.

Clear safeguarding procedures have also been developed so that school nurses know when to refer on if a young person discloses they are at risk of harm.

Although evidence shows that in 97 per cent of cases advice and issues have been able to be resolved by text message.

## How is the approach being sustained?

Following on from the success of ChatHealth, Leicestershire has subsequently developed an equivalent service for parents.

It enables them to get help and advice from a public health nurse on everything from diet and nutrition to parenting advice and support.

Meanwhile three websites – Health for Under Fives, Health for Kids and Health for Teens – have been launched. They provide helpful advice, guides and videos on health issues.

For example, Health for Kids, which is targeted at children of primary school age, includes lots of interactive games and quizzes to appeal to this age group. It also has information and advice for parents.

Health for Teens is targeted at secondary school pupils aged 11 to 16 and covers everything from lifestyle tips and healthy eating to coping with anxiety or exam stress.

Weekly webchats are held via the website on a range of topics, including emotional and sexual health and relationships so that young people can talk directly to a school nurse.

Health for Under Fives is the most recent one to be developed and provides information and advice to parents from the antenatal stage until their child reaches school age.

The content is produced by the team’s own experts with input welcomed from pupils about what topics they would like to see covered.

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# Blackburn with Darwen Council

## Making the most of telecare

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### Summary

Blackburn with Darwen Borough Council has put itself at the forefront of assistive care technology. It uses both monitored and stand-alone devices to help 2,500 people live independently. Each person is given their own individually tailored package. For some it means they do not need care, while for others it helps to complement that care.

### The challenge

Blackburn with Darwen is ranked in the top 20 most deprived local authorities in England. It faces some significant demographic challenges with the number of over 65s set to increase by over 50 per cent by 2030. Until six years ago, Blackburn with Darwen Borough Council had not got involved in providing telecare as a care support solution, but advances in technology and pressure on the social care budget led the council to invest in new technologies to help keep people safe in their own homes, and so the telecare service was introduced.

### The solution

The council now embraces assistive technology and leads the way in innovatively improving the support it offers to residents, applying a cost effective solution.

Those who may benefit from telecare are referred to the council's social care team who carry out an assessment of need. People can also self-refer too.

There are two basic types of technology – monitored and stand-alone, which is only connected to a family member or friend.

Monitored includes falls pendants, alarms and bed sensors that are linked to the monitoring and response centre run by current provider, Tunstall. When an alarm is triggered the individual is connected through to the Tunstall team who triage to find out what help is needed and then alert either the service user's named responder, the council's social care crisis service or, if it is a medical emergency, the ambulance service.

The stand-alone technology includes GPS tracking technology that is provided to people with dementia, medication reminders, and bed occupancy sensors that alert when a person gets up during the night.

### The impact

Over the past six years the council has seen the numbers using the telecare service rise from a just a handful to over 2,500 as Blackburn with Darwen has put itself at the forefront of the assistive technology movement. Most of them – 1,900 – are provided with monitored assistive technology. The remaining 600 use the stand-alone devices.

But it is not just older people who have benefited from the service. Telecare is available to anyone who has needs over the age of 18.

Due to the communication issues they face, deaf people are placed at a significant disadvantage when dealing with emergencies at home, such as a fire, flood or carbon monoxide leak.

The sensory impairment team has therefore been working with the council's lifeline supplier to provide an enhanced alerting service for deaf residents.



This has been done by linking the telecare lifeline system with specialist alerting equipment for the deaf.

This new system not only helps a deaf person get help if they have a fall at home, it can also alert them if there is an emergency, their baby is crying or if the doorbell, phone or minicom is ringing via a wrist pager.

“The use of this assistive technology helps us to target provision of services to periods of the day that a person may be vulnerable, which is a more effective use of resources and ensures that a person receives the support when they need it the most.”

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## Lessons learned

Joanne Hart-Wike, Team Manager for Moving, Handling and Telecare Services at Blackburn with Darwen, says it is essential to tailor the support around the individual.

“Developing services that focus on building the strengths of an individual, considering the person, their family and the support they have in the wider community is important. Some people they will not have care packages and telecare will enable those people to maintain their wellbeing and live independently; for others assistive technology will complement the care they receive.”

## How is the approach is being sustained?

The nature of telecare means that new products are coming on to the market all the time. Ms Hart-Wike says recently the council has started looking at technologies that can monitor a person’s movements during the day to build up intelligence and trends on their normal movements.

For example, the equipment can show if a person has used an appliance like the kettle or opened the fridge, which would indicate if a person is active in the kitchen.

“Often people can confuse day and night time, especially during periods of illness and winter months,” Ms Hart-Wike says.

### Summary

Staffordshire County Council has been using digital technology to help older people stay independent. Like many councils it has a range of telecare services, but it has also tried to bring technology into the mainstream by encouraging people to consider everyday devices they can buy on the high street.

### The challenge

Growing pressures on budgets and the ageing population has prompted Staffordshire to look at new ways to deliver services to its older population.

According to latest figures, there are 171,000 people aged over 65 – 56,000 more than there was 20 years ago. One in seven of them is frail and in need of support.

The council has responded by promoting assistive technology services.

Through its local providers, it offers people a range of alarms, sensors and aids that can be hooked up to a monitoring service.

These are promoted on a dedicated website – Staffordshire Connects – which helps identify what equipment and technology individuals will benefit from. But focusing on these only achieves so much, says Jim Ellam, the council’s assistive technology project lead.

“The risk is that people see assistive technology as an acknowledgement of failure and old age. It is not viewed positively and people do not embrace it as much as they should, given the benefits. So we have tried to look at ways to take assistive technology to the mainstream.”

### The solution

Alongside the traditional telecare technologies, Staffordshire has also started

to promote simple high street items like fast-boil kettles, touch lamps and rechargeable torches that double up as emergency night lights. The potential of smart phones as assistive technology has also been explored, for example using the reminder function to nudge people into taking their medicines.

Mr Ellam says: “Many of the simple solutions people value the most are readily available on the high street and through internet sites but it’s not necessarily the first thing people or their families think of when they have to manage a sudden deterioration in someone’s health.

“Using this type of technology is a far quicker way to help someone to stay independent longer or making sure that someone can come out of hospital safely.”

To promote the technology that is available the council and its partners have taken a “little box of tricks” around the community and into hospitals to promote what can be done.

The website also includes easy-to-understand demonstration videos and postcode searches to help people identify where they can get help.

### The impact

As Staffordshire has sought to take digital technology to the masses, it has not been possible to quantify just how many people are using it as it is purchased from the high street and online.

But Councillor Alan White, Deputy Leader and Cabinet Member for Health, Care and Wellbeing, believes the new approach is having a real positive effect on people’s lives.

“We recognise that independence matters to all of us and it can be a frightening experience when illness and frailty reduce our ability to do the things we have taken for granted like getting washed, dressed, and pursuing our hobbies inside and outside the home.

“Our new approach is helping people understand the range of gadgets, gizmos and emerging technologies that can help us all overcome the barriers to independent living and carry on living our lives independently. Rather than focus on a ‘clever’ gadget, our approach is to understand what the person wants to achieve and then help them to find the solution.”

One of the people who has benefited is Mavis. She felt anxious about living alone after her husband died but invested in a community lifeline unit, which gives her peace of mind at home. Her family also bought her a new smart phone with GPS and an SOS button so if she needs any help when out and about her family can be contacted at a push of a button and get a text message with her location.

Councillor White adds: “Through our approach we are now helping people think positively about using gadgets and smart technology in all aspects of their lives to help them remain independent and in control, and to support and reassure carers. In turn this will reduce dependency on health and care services and prevent people paying out for care allowing them to spend their money instead on living their lives to the full.”

## Lessons learned

Mr Ellam says Staffordshire has worked hard to get people thinking differently about assistive technology.

“It is important to think about how you promote assistive technology. Too often it is viewed negatively so we have focused on the outcomes – what it helps people achieve and why it should not just be a last resort. It is much better if everybody starts to think about what technology can do and how it can help keep them living independently as they age.”

An example of how the council has done this can be seen in the Christmas campaigns that have been run in recent years built around the theme of ‘buying something useful for granny’.

“Instead of the usual slippers or chocolates we have urged people to consider what technology can do. Take the rechargeable torches. They are only about £15. They are plugged in at night and work on a sensor so if the individual needs to get up they throw enough light out for the person to see where they need to go.”

## How is the approach being sustained?

Technology is changing all the time, which means the council is constantly looking to update what it promotes. A big focus at the moment is making use of smart phones, given their popularity, even among older age groups.

“The apps that are being developed and the way they can be used offers so much potential in terms of keeping people well. There is much more that can and will be done” adds Mr Ellam.

An example of this is the Jointly Carers app, which is now offered free to carers in Staffordshire. John is just one of the people who has started using it.

He lives alone and his family who live across the UK help manage his day-to-day care activities and finances. They are in contact with a good support network of local neighbours who help out but they were struggling to easily and confidentially share details of what was needed and who could do it. They met the Carers Hub at a local carers awareness event and have now started using Jointly Carers app, an easy-to-use diary and messaging system which is free to carers in Staffordshire. The app helps share information, tasks and activities securely via their smart phone and tablets making life easier for all.

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# Hampshire County Council

## Pushing the boundaries by using Amazon Echo

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### Summary

Hampshire County Council has made assistive technology a mainstream part of its adult social care work. The approach has helped it achieve substantial savings with 100 new referrals being made each week into the service. It is also not afraid to innovate, becoming the first local authority to use Amazon Echo to help residents.

### The challenge

By 2020, it is predicted 28 per cent of the population in Hampshire will be over the age of 65. A third will have dementia, while one in eight households will be occupied by a pensioner living alone.

That presents a major challenge to the county council, especially with finances becoming ever more stretched. Making greater use of care technology was identified as a way of both saving money and providing valuable support to residents. However, back in 2012 it was rarely used.

### The solution

Four years ago, Hampshire entered a partnership with PA Argenti, a consortium led by PA Consulting, to make greater use of assistive care technology.

Together they co-created a new service where care technology became a mainstream part of the work of social care teams with both older adults and younger adults with disabilities. PA Argenti work directly with care managers to help incorporate technologies including alarms, sensors and medication reminders into the care packages they provide.

The alarms are worn around the neck or wrist and are linked to a 24/7 monitoring centre. There are also fall detectors and epilepsy sensors that can automatically trigger support

As the service has developed, so more technologies have been added.

These include GPS tracking technology for people with dementia who have a tendency to wander away from home.

PA Argenti and the county council have also partnered with the charity, My Life Films, to pilot the use of biographical films as reminiscence therapy for people with dementia.

Anyone referred to the service, or who approaches it for help, is provided with an assessment to identify if they would benefit, and then a tailored package is developed for them. The county council covers the costs for some people, while others self-fund.

### The impact

Over 9,000 people are currently benefiting from assistive technology, with 100 new referrals being made each week.

In client surveys, 94 per cent say care technology has “increased their feelings of safety and security” and 98 per cent would recommend the service to others.

In addition to the improved quality of life, the partnership saved the county council over £7 million net of contract costs in the first three-and-a-half years in terms of reduced reliance on non-personal domiciliary care, delayed admission to residential settings and reduced carer burnout. Director of Adults’ Health and Care Graham Allen says the success has “exceeded expectations”.

“This work has enabled us to achieve significant and evidenced financial benefits, with a service that users love, and that offers significant personal benefit to them and their loved ones.

“Care technology is working at scale now in Hampshire to address challenges and provide support on a range of issues as diverse as dementia, autism, social isolation, as well as supporting people with learning disabilities and disabled children.

“Argenti’s enthusiasm and inventiveness has helped us to deliver a service that both transforms lives, and enables our limited financial resources to go further.”

## Lessons learned

The partnership has been carefully structured so that there is a payment by results component to the contract. PA Argenti is paid based on a number of qualitative and quantitative, outcome-focused key performance indicators.

These indicators focus, among other things, on service user satisfaction, care practitioner satisfaction and the council’s financial savings requirement.

## How is this approach being sustained?

Hampshire County Council and PA Argenti are always looking at new ways to harness the power of technology. This has seen the partnership expand its remit into a number of new areas.

Last year, video conferencing and tablets started being trialled with socially isolated individuals to connect them with family, friends and volunteers.

Now, the county council has become the first local authority to start working with Amazon in a trial using a customised version of their Echo device to support people to live independently.

The Amazon Echo is a voice-activated home speaker with wi-fi and bluetooth connectivity powered by Alexa software. Echo users can add new skills to the device and then simply “ask Alexa” to remind them to take medication or check whether their carer is due to arrive. This pilot will be trialled with 50 clients in early 2018.

Steve Carefull, PA Argenti programme director, says the project is just the latest example of the “industry leading” work with which the partnership is involved.

“We are proud to be working with one of the biggest household names. This technology can complement support from human carers and help ensure resources are focused on supporting those with the greatest needs.”

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# Bradford and Airedale Region

## Working with the NHS to provide telemedicine

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### Summary

The health service and local government have worked together closely across the Bradford and Airedale region to provide telemedicine to care home residents and people in the community. Patients and staff can access help and support from a 24/7 digital hub based at the NHS trust. It has reduced hospital admissions and A&E visits.

### The challenge

Providing support to older, frail patients to keep them out of hospital is one of the biggest challenges facing the health and care sectors. Research shows that while only 5 per cent of people aged over 65 who are admitted to hospital stay more than 21 days, that 5 per cent accounts for more than 40 per cent of all bed days.

Care home residents have a particularly high risk of an emergency admission – 50 per cent higher than people of the same age living in the community, research has suggested. But keeping these people out of hospital can require a lot of support.

### The solution

In the Bradford and Airedale area partners from across the NHS and local government have worked together closely to develop digital solutions to supporting older people.

The focus started six years ago with investment in telemedicine thanks to funding from the regional innovation funds via the then Yorkshire and Humber Strategic Health Authority. Staff at care homes can speak to nurses and paramedics at a digital care hub via a secure video connection using Cisco Jabber technology. The technology is on laptops and tablets so can be moved to where the residents are.

The service is run from Airedale hospital and involves care staff from local authority care homes and NHS staff working side-by-side. It operates 24/7 and consultations with doctors can also be arranged where necessary.

The hub also runs another three services – a single point of access for intermediate care services providing up to six-week support programmes to people at risk of being admitted to hospital or post-hospital discharge, the Gold Line service for end-of-life care and a telemedicine support service to prison and youth offender institutions.

### The impact

Research has demonstrated significant results, showing admissions from care homes receiving the services have dropped by at least a third, while A&E attendances have fallen by almost half.

Telemedicine has proven to be incredibly successful and popular. It is now available to over 500 care homes, some of whom are outside of West Yorkshire as the video consultations allow the staff at the digital care hub to provide support further afield.

Between them they make in the region of 3,000 video calls every month.

Mrs Buchan says: “The hub is making a real difference in supporting care home staff care for their residents. Data consistently shows that at the end of the video consultation with a health professional at hub that 90 per cent remain in the home with appropriate care wrapped around them – proof that telemedicine leads to a better use of resources, better outcomes and, crucially, a better patient experience.”

One of the homes that uses the service is Herncliffe in Keighley. Deputy matron Beverley Clarkson, says staff have been very

impressed with the service and they have used it to get advice for patients who have had falls, developed infections and needed palliative care.

“I think the service is a brilliant idea,” she says. “Lots of our clients get very distressed at the thought of going into hospital so anything that helps us care for them here is good.”

## Lessons learned

Mrs Buchan says what has become clear over the years is the importance of having an integrated clinical IT system for patient records. Bit by bit this has been achieved in Bradford and Airedale by installing the SystmOne system across the local health and care economy. It allows social care, GPs, community services and the hospital trust to have shared access to the same information covering treatment, existing conditions, allergies and current medication.

Mrs Buchan says: “You need integrated care records otherwise you are trying to make something work with the limited information held within the summary care record or scanning care plans into our clinical system.

“We have been rolling out SystmOne across the local area’s health and social care services for a number of years. GPs were the first to use it and the digital care hub (formerly known as the telehealth hub) has been using SystmOne since its inception in 2011. It is absolutely key to get the whole view of the patient.”

## How is the approach being sustained?

The Airedale partners have experimented with providing telemedicine direct into people’s homes. The pilot was focused on those receiving end of life care. While it did not prove successful financially, Mrs Buchan still believes it will be something that will be used in the future.

“The problem was it proved too expensive to set up the secure connection,” she says. “In a care home you might have up to 100 residents – you get the economies of scale – but at home it is just for one person.

“We have also tried using Skype, but it is not something that works particularly well for us at the moment. Caring for patients at end of life means we need to have a solution which is cost effective but provides guaranteed quality and service availability.”

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### Summary

Staff running chair-based exercise classes have started to use sensors and tablets to assess the falls risk of clients and helping them tailor exercise programmes. The programme has been used in care homes and is now being tested in community settings.

### The challenge

Keeping active later in life is essential for your physical health and for reducing the risk of falls. But activity levels decline as people get older.

In Hertfordshire, care home providers work together through the Hertfordshire Care Home Providers Association (HCPA). The organisation is commissioned by the county council and NHS to run chair-based exercise classes in some of the local care homes. The aim is to build up the strength of residents and reduce the risk of falls.

But to get information about falls risk or an individual's capability to help properly tailor an exercise programmes requires a detailed assessment that can last well over 30 minutes.

### The solution

Two years ago, HCPA, the council and local NHS started to look into way of using technology to improve the way these classes were organised.

The HCPA bought two devices – known as Quantitative Timed Up and Go (QTUG) – to help monitor the movement and strength of individuals and their risk of falls.

The devices are made up of a tablet which links wirelessly with two medical-grade sensors – about the size of iPod nanos.

These are strapped just below the knees during a walking assessment and are able to measure criteria such as gait and stride length.

With the sensors attached, the older person starts off in a seated position, stands up, walks three metres and turns around, walks back and sits back down again. The data is then compared to average data for someone of that height, age and weight to assess them for falls risk. A bespoke exercise programme can then be developed.

This technology was used in 19 care homes over six months in 2015 and then another 10 took part in 2016 when Fitbits were also used to monitor heart rate. Funding for the pilots was provided through the Better Care Fund and NHS England's vanguard programme with the council and local NHS also providing some money.

### The impact

In the first pilot the falls risk reduced in 15 of the 19 care homes for residents who took part in more than half of the classes. There was also an unexpected mental health benefit for residents. Their confidence and wellbeing levels, measured using self-reported scales, also increased with residents reporting feeling happier as a result of the classes and progress made.

Michelle Airey, HCPA integration programme manager, says: "I think the key is that the class tutors were able to spend more time focusing on the exercise classes and the residents doing them rather than carrying out a falls assessment.

"They can be incredibly time-consuming but just by using a good piece of technology the instructors were able to build it into the class and got immediate information on the individual's capability and risk of falling."



## Lessons learned

Ms Airey says the pilots have made them think about the best way to offer exercise classes in care homes.

“One of the problems you face running exercise classes in care homes for this cohort of people is that it is not always possible for them to make a regular class. They may be unwell or simply not able to make that set time.

“That is why we saw that a number of people were only able to make less than half the classes – and when that happened the benefits of the support declined.”

In response HCPA is looking to train care home staff to run the classes themselves.

“It would be good if they could put the classes on or provide some opportunities for exercise when it was appropriate for the residents and that is something we are thinking about now,” adds Ms Airey.

## How is the approach being sustained?

This year saw HCPA take the technology out into the community with funding support provided by NHS England through the Harnessing Technology Fund.

This has been focused on the flexi-care housing sites that HCPA runs.

Residents at these sites live independently, with care built around their needs.

Classes using the QTUG technology started being run at these venues in April 2017 and will continue through to March. The hope is they will get over 100 people completing the 20-week programme.

Ms Airey says: “These people will be more active and we want to see what the benefits are when they are given this support. So far the signs are encouraging, but we will have to wait and see. Once we have finished we can look at what has worked best and where we can target the resources.

“But my advice to anyone thinking about using technology is don’t just put it in for the sake of it. You need to consider whether it is going to fix something or help develop something that cannot be done. There must be that added value.”

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### Summary

Hull and Wakefield have used PHE's online SHAPE tool to work out how best to invest money in dental services. SHAPE has allowed officials to map where practices are against areas of high deprivation as a proxy for poor oral health.

### The challenge

Overall access to NHS dentistry continues to increase. But problems still persist.

During 2016/17, 60 per cent of children aged 0 to two years did not access services in Wakefield and Hull. Access figures are better for slightly older children, with about one fifth of three to five year olds not accessing the care that they need to enjoy good oral health.

In more deprived areas, where oral health tends to be poorer, lower proportions of children access primary care dental services. In Wakefield and Hull over a third of five year olds experience tooth decay. This is significantly higher than the England and regional averages.

### The solution

To help tackle inequalities in children's oral health, NHS England has launched a new national pilot called Starting Well. It is targeted on the 13 areas with highest rates of tooth decay in young children. Two of these are Wakefield and Hull.

The programme has two levels and involves working with existing practices. The first level sees dental teams adopting a preventive approach to the care that they provide and involves accepting new child patients, having an oral health champion, team training and audit.

Level two includes all that plus a commitment to work with communities and the children's workforce such as health visitors and children centre staff, to reach out to families to encourage access to services by young children.

In Wakefield and Hull working groups were set up, including representatives from the local authority, PHE and NHS England, in spring 2017 to explore how best to tackle the issue. The decision was taken to use PHE's SHAPE tool to identify the areas where need was greatest

SHAPE (strategic health asset planning and evaluation) is an online platform that supports the planning of services by mapping physical assets and national datasets across a health economy.

Using SHAPE, the working group was able to create a heat map showing where dental practices were located, the areas of highest deprivation – which was used as a proxy for tooth decay – and the 15-minute walking radius from the practice. Knowledge of public transport links and soft intelligence were then considered.

Sally Eapen Simon, PHE's Yorkshire and Humber consultant in dental public health, says: "We wanted to help stakeholders have a shared understanding of need and think about where investment might be made to address inequalities in access. Already we can see there are areas of high deprivation where access to services by families with young children is more of a challenge.

"Improving access to services for children, with a focus on reaching out to those who have not engaged with services previously, provides the opportunity for regular examinations, prevention interventions and evidence based advice to optimise children's oral health."

## Lessons learned

Dr Eapen Simon says: “Deprivation is considered a good proxy risk factor for oral health. Unfortunately, we did not have tooth decay data at ward level in the either area. Local authorities commission oral health surveys and the potential to use larger sample sizes would have provided us with data at a ward level. In this way, we could have potentially mapped the tooth decay and additional data using the SHAPE tool.”

She also says with more time and funding, they could have gone into even more detail.

“We could have looked at the location of children’s centres and nurseries, for example, to give us an idea of where children and families were in local communities.

“A collaborative approach between partners and making best use of local intelligence is key to help us address oral health inequalities and improve oral health in children locally.”

## How is the approach being sustained?

The pilot has now been launched and tenders have gone out to local dental practices inviting them to apply to take part in Starting Well. Following an evaluation process, which will include sense checking information with the SHAPE tool, the practices taking part should be identified by the end of the year with a view to them starting the work in early 2018. The programme will then last two years.

By using SHAPE in this way, PHE associate director Barbara Coyle says it has prompted ideas about other ways it could be developed and deployed.

“The tool has great value in supporting the re-design of existing services or developing new ones to meet the needs of local people. This way of intelligence gathering could be of real use in supporting the wider healthcare commissioning agenda.

“The work in Wakefield and Hull has stimulated us to develop a specific component in SHAPE which will focus on dental care and will bring together data on dental activity and outcomes with demographic data and travel time analysis.”

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