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Tackling Telehealth 2

How to develop integrated care through the implementation of TECS

Lead author: Dr Ruth Chambers
February 2015

Contents

TECS can become the glue for integrated care

Our first report on telehealth, in March 2014, focused on the challenges being faced by CCGs in commissioning cost-effective services, and aimed to share learning from around the country that would help to break down some of the barriers.

In this second report we take on the debate to examine the transformative role that telehealth, or technology enabled care services (TECS), can play in creating integrated health and social care systems based around the patient.

Professor Ruth Chambers, in the lead paper, aims to define the different levels of integrated care that can be achieved through the effective deployment of TECS, and the figure on page 5 is likely to become a touchstone for health and care strategists as they refine existing services and develop new applications for telehealth.

Her key point is that TECS can be the glue that brings together, and binds together, the professionals and pathways that could do so much more for patients with the effective implementation of these new but often simple technologies.

Indeed, as we see from the range of case studies in this latest report, the patients using Flo to better manage their conditions are rarely being asked to do more than send or respond to a text message on their mobile phone.

Of course most of the early implementations of TECS focus on management of the frail elderly but there are also strong examples here of the Flo system being used to manage conditions in pregnancy, pre-operative white coat syndrome, and mental health issues in younger patients.

As well as the benefits for patients, there are now clear savings being made in direct costs and in terms of staff time, both in hospitals and the community, through the use of TECS. And we are also seeing welcome relief for carers as their burden of responsibility is eased.

So, as momentum builds again, the aim of this second report is to help define, organise, and inspire the implementation of TECS in CCGs and across all health and social care settings.

You can download further copies of this report from the Inside Commissioning website at www.insidecommissioning.co.uk/reports, where the first report is also available. And please do contribute to the debate by adding your comments on the website when you visit.

Colin Cooper

Editorial Director

Inside Commissioning and Haymarket Medical Media

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Simple TELEHEALTH Florence

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Simple Telehealth offers a unique approach to telehealth services, with SMS texting at its heart. The central system is called Florence, affectionately known as 'Flo' to its users, which allows clinicians to remotely interact with patients regarding their healthcare to achieve better and faster health outcomes, improved patient adherence to clinical pathways and increased productivity. Simple Telehealth is developed and owned by the NHS, and the project is led by Stoke-on-Trent CCG.

For further information turn to page 19 or visit the website:

www.digitalhealthsot.nhs.uk

The role of telehealth in the development of integrated care

How can we make integrated care happen effectively via delivery of technology enabled care services (TECS) by health and social care professionals?

The context

We need to understand how health and social care professionals can make technology enabled care really happen, when they are working from different organisations in various settings providing care for the same patient and their condition(s).

The aim of 'integrated care working' features in every local health economy's strategies for provision of care, especially in relation to the care of frail and complex patients. In reality, what is needed is 'continuity of care' that overcomes current contradictory assessments and care plans that act as a barrier to connected and coherent care. Such connectedness requires informational continuity, management continuity and relational continuity, generating a 'connected and coherent series of healthcare events or seamless care'.[1,2]

'Integrated care' seems to be interpreted and defined in different ways. Some regard it as an intervention such as case management or care co-ordination; others as a 'complex strategy to innovate and implement long-lasting change in the way services in the health and social care sectors are delivered.'[3] National Voices has published the 12 principles for integrated care agreed by 130 member organisations from health and social care, to enable integrated care to develop quickly and at scale and to put patients and service users at the heart of care.[4]

In essence, integrated care is 'timely and appropriate access to a network of services that aim to prevent ill health and/or offer to alternatives to care…'. [5]

The Commonwealth Fund has described the components necessary for an integrated system of health and social services which include 'quality measurement and data-sharing tools to track outcomes and exchange information,' where the implementation of TECS will be vital. [6]

There is debate as to the evidence of cost-effectiveness of integrated care, with the conclusions being that some evidence exists for selected integrated care approaches.[3] But it is generally believed that 'closer working between the NHS and social care (designed to) improve productivity and deliver care in the right settings would make a vital contribution to closing the estimated £30bn funding gap the NHS faces by 2020/21 and help local authorities now as their budgets are progressively cut.[7,8]

> **"WHAT IS NEEDED IS 'CONTINUITY OF CARE' THAT OVERCOMES CURRENT CONTRADICTORY ASSESSMENTS AND CARE PLANS THAT ACT AS A BARRIER TO CONNECTED AND COHERENT CARE**

The forthcoming Care Act will mean more people approaching local authorities for assessment, advice, information and guidance, because the Act introduces a new duty for for them to promote wellbeing in all decisions regarding an individual's care needs and sets out clear obligations for co-operation across the health and social care system. Effective integrated care will need to take account of the differing cultures of different organisations, professions and individuals with common goals, agreed working processes, governance and finance systems that enable care providers to collaborate across organisation boundaries.[9,10]

The West Midlands Academic Health Science Network (WMAHSN) vision for 'patient-centric integrated care is to apply innovation to facilitate the building of new models and pathways for key

FIGURE 1: Framework for extent of responsibility for delivery of integrated and connected care via technology enabled care services [TECS] by health and social care professionals Each level assumes that the patient/service user has given informed consent to participate; and that it may be one or more health conditions or any digital health modes of delivery provided.

1 Shared real-time responsibility: ≥ 2 clinicians/social workers, in different organisations/settings share TECS directly (same mode of technology or connected if different) for delivery of an agreed shared care plan of same patient/same condition at same treatment phase. Clinicians/social workers have agreed responsibility via shared care plan agreed by patient, that optimises patient responsibility for their own care.

2 Shared sequential responsibility: ≥ 2 clinicians/social workers, in different organisations/settings interface; so one hands over responsibility to the other for providing TECS directly (same mode of technology or different) for continuing care of same patient/same condition via agreed care plan. This might be by the most senior/expert defining the patient pathway and endorsing the TECS protocol for others to provide with real-time support eg advice in person/by email; with shared care plan agreed by patient, that optimises patient responsibility for their own care.

3 Shared multidisciplinary protocol with one TECS operator: ≥ 2 clinicians/social workers, of different disciplines, in same organisation or setting; sharing (delegated) responsibility for providing TECS directly (≥ 1 mode of technology) for continuing care of same patient/≥ 1 conditions via agreed care plan. This might be by the most senior/expert defining patient pathway and endorsing TECS protocol(s) for others to provide with real time support eg advice in person/by email; with shared care plan agreed by patient, that optimises patient responsibility for their own care.

4 Shared delivery by individual professional with patient/carer: TECS initiated and delivered by health/social care professional who updates other health/social care professional(s) or teams involved in the patient's care ie giving information rather than interactive decision making between professionals. It might be that a patient requested the inclusion of their personal technology such as an app in their health or social care, that the initiating health/social care professional has adopted; with shared care plan agreed by patient, that optimises patient responsibility for their own care.

5 Person selects and purchases own technology to support or improve their own health and/or social care and/or lifestyle habits: they may include goal setting, reminders, records of feelings/bodily measurements etc, action plans, information about best practice. They may or may not share their personal information/record keeping generated by the technology (eg health app) with a health/social care professional.

long-term conditions which are focused on patient need (not organisational structures), are co-ordinated effectively, and deliver against the NHS Outcomes Framework.'[11] Local authorities must also guarantee preventive services that should help reduce or delay the development of care and support needs via continuity of care and inter-professional working.

So the challenge for the implementation of TECS is that technology should underpin integrated care to provide connected services with an obvious main co-ordinator of care to improve service quality/clinical outcomes, enhance patient experience and satisfaction and reduce pressure on all health and social care services as patients/service users take more responsibility for their care/lifestyle habits in proactive ways.[7]

This will mean that integrated care working is designed to happen with interoperability and integration of solutions at a system level, organisational level, functional level, professional level, service level and personal level.[12] This brings other key partners, such as housing and the third sector, integrated into TECS pathways alongside health and social care.

The emergence of new contractual models

New contractual models are emerging through which CCGs can stimulate integration of service delivery: a 'prime' or lead contractor approach or an alliance contract approach that is focused on achievement of outcomes.[13] With a prime contractor model, the CCG retains overall accountability via the commission of the prime contractor, which in turn holds each of the sub-contractors individually accountable. A prime provider could deliver some or all of the care within the contract agreement. With an alliance contract, a set of providers agrees a combined arrangement to deliver services with a CCG and shares risk and responsibility for meeting agreed outcomes with mutual accountability.[13] Either of these approaches could work for commissioning patient-centric TECS by the various providers of care in an integrated way for a health economy. The TECS might be condition specific or generalised to accommodate complex or frail patients, co-morbidities, self-care or rural locations, for instance. An agreed assessment and referral pathway for all modes of TECS (assistive technology, telehealth, telemedicine, apps, video consultation etc) would provide the integration 'glue' and trained navigators might direct and support patients, health and social care professionals, to enhance uptake and quality of delivery.

"WE MUST USE TECS AS AN ENABLER FOR CHANGE TO ENCOURAGE INDIVIDUALS TO TAKE MORE RESPONSIBILITY FOR THEIR OWN HEALTH, CONNECTED IN A SEAMLESS WAY TO CLINICIANS AND SOCIAL WORKERS

The mandate from the government to NHS England expects particular progress to be made in 'supporting people with long-term physical and mental health conditions, particularly by embracing opportunities created by technology.'[14] The impact of TECS underpinning integrated care will be more likely for people with 'ongoing and complex needs, including frail older people, children and adults with disabilities, people with addictions, those with multiple chronic and mental illnesses' where well co-ordinated care (eg discharge planning) should significantly improve health and wellbeing outcomes.[7,15] Digital technology should give patients and clinicians a greater choice in respect of delivery of care, and adoption of self-care and responsibility; and bring carers relief through patients' increased independence and remote support. But the impact will be even greater if we target TECS at people before their health conditions deteriorate and they require more services and in a way that enables people to take personal responsibility for their own care and lifestyle habits.

We must use TECS as an enabler for change, to encourage individuals to take more responsibility for their own health, connected in a seamless way to clinicians and social carers who work collaboratively to focus on preventing deterioration of the individual's long-term condition(s), promote independence, improve outcomes and minimise avoidable service use.

Ensuring that patients can access integrated care is a key goal for any future reform or development of the health service and NHS England's current strategic direction should drive commissioners and providers to adopt TECS and encourage integration via high quality

commissioning, improving and simplifying procurement, improving information governance, and recommending robust measures and metrics.[16-18]

Proposed integrated care framework for the delivery of TECS

The framework outlined in Figure 1 shows the extent and type of integrated care needed to underpin delivery of TECS by health and social care professionals in the same or different settings.

Note the changes that might be needed at system, organisational, functional, professional, service and personal levels to enable real-life provision of collaborative and integrated care via digital technology. The figure captures the extent of responsibility for the digital interaction with patients/service users and their responsible health and social care professionals working from the same or different settings. The following examples should help to describe the extent of interaction.

1 SHARED, REAL-TIME RESPONSIBILITY

Mrs P is a 30-year-old woman with severe asthma. She is currently on maximal medical therapy and being followed up by both the specialist respiratory nurse (community nurse specialist) and practice nurse at her local GP practice. She has been using Flo to communicate her PEFR (peak flow rate) to these care providers but the patient acts according to the pre-agreed self-care management plan.

One day, she texts that her PEFR is 50% of her predicted value and Flo advises her to increase her preventive inhaler. An alert is recorded on the patient's record on the Flo website so that when the practice nurse and specialist respiratory nurse check the website (for example as part of their weekly routine) they will note this and any subsequent readings texted in. The patient makes an appointment to see the practice nurse that day, in line with the automated Flo text directing an urgent consultation for such a low PEFR/and increased medication (at the weekend the patient would know to use out-of-hours services).

The patient attends the practice and her treatment is further adjusted. She uses Flo over the next couple of days to communicate her PEFR for monitoring purposes. Unfortunately, three days post-assessment her PEFR drops to 35% of her predicted value. The patient phones the practice nurse, as directed by Flo and described in the self-management plan. The practice nurse requests the specialist respiratory nurse to assess the patient at her home that day. The respiratory nurse checks the PEFR readings on the Flo website before the home visit and for the next few days as the patient improves with adjusted medication, meaning the patient remains independent at home. The practice nurse continues weekly monitoring.

2 SHARED SEQUENTIAL RESPONSIBILITY WITH HAND OVER

Mr R, a 70-year-old man who suffers with COPD and has numerous social issues, uses the Health Fabric app to record a personalised care plan. His social worker adds to this every time she visits him so that his personal digital record is up to date. The local GP is asked to see him at home because he is reported to be more confused and breathless than usual and with a cough productive of green sputum.

The GP visits the patient, who is on his own and not making a great deal of sense. The GP knows that the patient uses the Health Fabric app and asks if he can view his records. The GP notes the recent entries made by the social worker who is concerned that over the past three weeks Mr R has become increasingly forgetful and may need his care support increasing.

The GP then realises that although the infection is likely to have contributed to his confusion, the patient has shown a gradual decline in cognitive function which has implications for future management. She completes the Mini Mental State Examination rating scale, referring him appropriately to the local mental health trust for review and confirmation of dementia. The mental health team enrol him on Flo for pre-vascular dementia, to help him optimise daily exercise and smoking cessation. The social worker suggests memory aids, reviews his enablement and potential needs for assistive technology and telecare, then signs him up to the lifeline service which will receive an alert if he falls or presses the panic button for help.

3 SHARED MULTIDISCIPLINARY PROTOCOL WITH ONE TECS OPERATOR

Mr C has hypertension. He is using Flo to communicate ambulatory blood pressure readings on a weekly basis to the GP practice. He is currently on ramipril 5mg once daily. The practice nurse reviews the readings he texted to the Flo website, noting that the patient's BP is regularly at 150/95 mmHg. When looking through previous readings it appears that the BP has been gradually increasing. She discusses the readings with a GP who also looks through the digital record of ambulatory blood pressure measurements and proposes a change to medication. The patient is then contacted by phone by the practice nurse to discuss increasing the ramipril to 10mg once daily. Mr C is independent and social care is not involved in assessment of his need for telecare or other assistive technology.

4 SHARED DELIVERY BY INDIVIDUAL PROFESSIONAL WITH PATIENT/ CARER

Miss M is a 30-year-old woman with a past medical history of severe depression. She has contacted the medical centre because she feels her mood is lower and she does not have the energy or the motivation to come to the surgery to see a doctor. She is offered the option of a video consultation via Skype with one of the doctors (having previously signed an informed consent form). Later that morning she is contacted by a doctor via a booked video appointment. He notes that the patient is slumped in a chair looking tearful with downcast eyes. She denies suicidal ideation but her high PHQ-9 score is suggestive of severe depression. The doctor contacts the community mental health team to arrange a further review that day.

5 PERSON SELECTS AND PURCHASES OWN TECHNOLOGY

Mrs O has been trying to lose weight for many years with yo-yo dieting and regaining of weight. She signs up to a weight-loss app and manages to lose 10kg over a three-month period. She brings the graph showing the downward trend to her next diabetes review with the practice nurse and they discuss her weight-loss goals.

Dr Ruth Chambers, James Davies

“ CHANGES MIGHT BE NEEDED AT ORGANISATIONAL, SYSTEM, FUNCTIONAL, PROFESSIONAL, SERVICE AND PERSONAL LEVELS TO ENABLE REAL-LIFE PROVISION OF INTEGRATED CARE VIA DIGITAL TECHNOLOGY

Case studies showing multiple implementations of TECS across a variety of settings

1 HYPERTENSION - IMPLEMENTING FLO SIMULTANEOUSLY ACROSS 14 PRACTICES

Stafford and Surrounds CCG

Having already tried and tested the Flo system, we decided to move ahead with a 'big bang' approach to diagnosing hypertension and train a non-clinical facilitator in every practice, meaning that the CCG would have 14 telehealth experts across GP practices to help, promote and support the roll-out of the project.

All 14 practices sent a clinical and non-clinical representative to a facilitated training session and each practice had online access to Flo so they could register their practice and become familiar with the system.

Adoption of the Flo system was one of the main objectives of the local Innovations Collaborative. The collaborative had a team goal of one patient registered with Flo per 1,000 population within the first three months of the project following training and launch. Achieving this target would result in 145 patients being registered with Flo in the first quarter and the system quickly becoming embedded within all local GP practices.

A team approach was adopted and the overall target addressed by all 14 practices - meaning that if one practice was struggling, they would be supported by the other practice teams.

The practice reports for the first three months of using Flo indicate that of the 174 patients who submitted their BP for the full week - having been signed up to Flo after an opportunistically high BP had been noted in surgery - 72 of these had BP higher than 135/85. This equates to a positive diagnosis of hypertension for 41% of this patient group.

The timely and effective diagnosis of hypertension using Flo has resulted in treatment being initiated for the most appropriate patients only, providing confidence to the clinician and the patient. The Stafford practices fully embraced the Florence project, registering 379 patients over a six-month period. The hypertension protocol has been successfully embedded into the CCG's practices, and feedback from practices, patients and clinicians has been extremely positive.

Case Study Lead: Paul Meredith, Innovations Lead, Stafford and Surrounds CCG (Paul.Meredith1@nhs.net)

2 CREATING AND MAINTAINING CLINICAL ENGAGEMENT USING THE FLO SYSTEM

Buckinghamshire Assistive Technology Joint Commissioning (BATJC)

The joint commissioning team is an initiative by Aylesbury Vale CCG, Chiltern CCG and Buckinghamshire County Council, seeking to develop the adoption of technology across the health and social care economies of Buckinghamshire.

In order for wholesale adoption to occur, they recognised that they must firstly engage with clinicians and patients on the frontline and 'organically' grow the idea and the use of technology.

Flo provided the commissioning team with a tool with which they then facilitated engagement with clinicians and patients alike. Within a short time period a significant take up of the Flo approach was achieved, alongside a better understanding of the benefits of effectively using simple, low cost technology in patient-focused clinical pathways.

More than 75% of GP practices in the county have now engaged with the dedicated telehealth project manager. Two dedicated workshops demonstrated the emergence of clinical champions, the positive influence they are having on their practices and how they are now looking at how they can incorporate other ways of using technology more effectively.

The joint commissioning team are also working closely with other areas of health and social care, looking at innovative ways to utilise Flo. This includes mental health services, looking at ways of supporting community based counselling services; with the adult community health team, looking at ways of using Flo and other forms of technology in the community setting; and with secondary care, working with the tuberculosis team on how Flo can support patients under their care. In summary, Flo has been the driver to clinical engagement in Buckinghamshire.

Case Study Lead: Dr Tom Davis, GP clinical adviser, Buckinghamshire Assistive Technology Joint Commissioning (tom.davis@nhs.net)

2B HYPERTENSION PATIENT WITH ANXIETY

This case study demonstrates the use of Flo in a clinical setting, benefitting a patient and an individual surgery.

Mrs M is a 55-year-old woman well known to the practice. Previously diagnosed with hypertension, she has demonstrated significant levels of anxiety related to monitoring of her BP readings. Prior to Flo, she made regular calls to the surgery, had multiple consultations and recorded vast numbers of readings – all adding to her health anxiety related to her hypertension diagnosis. At first she was apprehensive about Flo but was happy to engage once the system had been explained and she had had an opportunity to explore the patient information.

For two months of using Flo, Mrs M continued to take multiple readings but slowly her levels of engagement have reduced as she has gained confidence in the system. Flo has enabled her to see that her overall control is good and that her healthcare professionals are able to access the data to inform her care. Her anxieties have reduced and so have the number of contacts with the surgery. She is now more confident to self-manage her condition but knows also that Flo will relay advice should she need to involve her healthcare team.

This case demonstrates an immediate ability to review the 'real' blood pressure control of this patient and that lowering patient anxiety levels is linked with further improvements in blood pressure control and fewer unnecessary GP consultations.

3 ELDERLY PATIENT WITH COPD AND HEART FAILURE IN A RURAL LOCATION

County Health Partnerships, Nottinghamshire

This case study concentrates on an 85-year-old man (patient H) with COPD and heart failure who lives alone in a rural location, with no health centre available in his village.

He is housebound, his closest family live approximately 30 miles away (daughters) and they visit him five days a week. He is able to mobilise independently with a frame but also has a carer visit once a day, to ensure he is up and dressed, assists with his breakfast, and prompts medication from a blister pack.

The patient's weight is stable, BP is within normal range, oxygen saturation ranges from 95% to 99% when well, pulse average is 80 regular, and he has a tendency to low temperature of 35.5 (it often

takes a while to warm the hand for an accurate oxygen saturation reading). His chest is noisy, with good air entry to all zones, and he has a productive cough that generally produces a white sputum.

H will at times have episodes of low mood and at these times his needs change. He states that he is going to die, that his daughters should be with him 24 hours a day, that he is frightened and that he cannot breathe. These incidents have been occurring for about four years, during which his family would seek medical assistance. Depending on the time of day, the following scenarios would occur:

Out of hours An ambulance with paramedics would attend. H would refuse to sit up, saying he is unable to move. Temperature and oxygen saturation rate would read low (cold hands), he would be noisily and heavily breathing with increased respirations, resulting in hospital admission.

GP visit If attended by a new GP registrar or an out-of-hours GP, the visit would result in antibiotics and steroids or hospital admission.

Matron visit The matron would take considerable time to reassure, ensuring his hands are warmed prior to taking oxygen saturation rates (can take 30 minutes), check sputum colour, listen to chest, check weight, observe changes, check peripheral oedema, check respirations temperature and BP.

Once H is aware that observations are within the normal range, after much reassurance that he is okay, he will suddenly feel much better, his breathing will ease and he will regain his mobility.

Crisis visits were frequent and lengthy, approximately twice a month and up to 90 minutes, on top of the weekly routine visits by the matron team. We have since introduced the Flo system with H's consent and his daughters take his readings once a week and when he is feeling unwell. With education and support they can now tell when H needs medical attention. H has BP, pulse, oxygen saturation rates, temperature and weight readings taken. They are aware how long it takes to warm his hands for accurate readings. They also monitor his cough and are aware of sputum colour-change.

H now responds to the reassurance from his daughters when told his readings are in the normal range. The daughters are reassured by Flo that the readings are within normal range for H and that Flo will relay advice if they are not.

This means reduced hospital admissions, reduced paramedic and GP call-outs, and reduced matron crisis calls. H and his family have improved quality of life through their confidence in the support they are receiving. H has long-term conditions and is nearing end of life. He wishes to stay at home to live independently and now is less likely to be taken to hospital due to avoided crises.

Case Study Lead: Patricia Charnley, community matron (Patricia.Charnley@nottshc.nhs.uk)

4 SUPPORTING 25 RESIDENTS OF A CARE HOME WITH FLO

County Health Partnerships, Nottinghamshire

As part of the NHS agenda to prevent hospital admissions, and the aims of the local Care Home Agenda, the matron team has been giving monthly support to a care home of 25 residents by supporting the staff, triaging and seeing patients, and treating as needed.

Flo had already been used successfully with individual patients and it was decided to roll out the system for all residents. The chosen protocols related to BP, oxygen, pulse and weight monitoring. All residents were given leaflets and a verbal explanation, consent was gained from the residents who wished to participate and the relatives were also involved in these discussions. All 25 residents agreed to participate, the equipment was delivered and staff were trained and evaluated.

Each resident was supplied with the equipment required – an individual mobile phone and telephone number - and a personalised plan set up. The staff were advised by Flo when readings were not within parameters and when to seek medical attention. The residential staff believed the training they received and the implementation of Flo gave them a greater awareness and they felt even more supported by the matron team.

There were many positive outcomes from this initiative:

- Staff felt that medical/nursing staff at the GP practice had greater confidence in them when they called regarding a problem.
- Residents appreciated having individualised monitoring of their health.
- Families felt there was more support and that staff had more confidence dealing with medical issues.
- Problems highlighted via Flo ensured that proactive care can be introduced early to help avoid crises.
- Monitoring enabled medication reviews to be supported by healthcare data.
- Changes to medication while in secondary care can be monitored so that any changes needed after discharge can be acted upon.
- Reduced call-outs, telephone calls and crisis interventions from the community matron, paramedics and GPs.
- Avoidance of hospital admissions.
- Increased quality of life for the patient and their relatives.
- Residents are able to remain at home for end of life care.

Case Study Lead: Patricia Charnley, community matron (Patricia.Charnley@nottshc.nhs.uk)

5 TACKLING PRE-OPERATIVE 'WHITE COAT' HYPERTENSION
Sherwood Forest Hospitals NHS Foundation Trust

Hypertension is the most common avoidable medical condition for postponing anaesthesia and surgery. However, 'white coat' syndrome is a phenomenon in which patients exhibit hypertension only during a clinical visit and so needs to be identified in order to reduce cancelled operations.

The Flo telehealth system has been utilised in the pre-operative assessment unit to support care delivery and tackle this issue. The patient is provided with a portable automatic blood pressure machine, and they receive reminders to send a text with their blood pressure reading twice a day for seven days. The assessing nurse can then retrieve the readings from a secure web base and establish a plan of care, either to proceed with surgery or commence the appropriate treatment.

The work incorporates NICE guidelines on Clinical Management of Primary Hypertension in Adults (2011). The cost of supplying the blood pressure monitor and using Flo is £3.15 per patient.

The clinical outcomes of this initiative are:

- Improvement in identification of pre-operative risk factors such as ischaemic and haemorrhagic stroke, myocardial infarction, heart failure, chronic kidney disease, cognitive decline and premature death.
- Patient self-care, ensuring more appropriate, speedier and accurate referrals to GPs.
- Increased vital signs monitoring.
- A more integrated approach to patient care within the multidisciplinary team.
- Engaged staff members in innovation and telehealth.
- Increased clinical productivity.

The non-clinical outcomes of this initiative are:

- Prevention of short notice cancellations of surgery.
- Increased surgical bed occupancy.
- Fully utilised theatre time.
- Reduction of strain on NHS resources (reduced clinic time/efficient staffing).
- Savings for patients (time off work, car parking).
- Financial savings.
- Improved patient satisfaction.

The success of this innovative use of Flo in the acute setting has attracted visits from another local acute hospital pre-operative team who are keen to deploy the system in a similar way.

Case Study Leads: Carol Turner, senior ODP (Carol.Turner@mansfieldandashfieldCCG.nhs.uk), Kelly Crutchley, deputy department leader, registered nurse in pre-operative assessment (kellycrutchley@sfh-tr.nhs.uk)

6 MANAGING GESTATIONAL DIABETES IN PREGNANCY
City Hospitals Sunderland NHS Foundation Trust

An older mother of two children with a past obstetric history of a poor foetal outcome and difficult labour was seen within the combined antenatal diabetes service at the hospital. Medical evaluation at booking confirmed morbid obesity, smoking status of 20 pack years, and strong family history of type-2 diabetes.

At 20 weeks gestation, following a formal diagnosis of gestational diabetes, the patient consented and was enrolled on the Flo programme. Flo provided support in the form of reminders and encouragement in achieving goals for blood glucose assessment, weight targets and adherence to lifestyle modification. With the adjustment of oral medication and insulin outside of the usual clinic environment a healthy foetal growth was achieved. In turn, this provided the woman with reassurance and resulted in four fewer visits to the ante-natal service.

This case highlights the versatility of Flo technology in addressing the needs of both parties. For clinicians, this was a high-risk patient with significant risk factors for a further poor outcome, including diabetes, smoking, morbid obesity, hypertension, and potential pre-eclampsia. Flo provided a high degree of safety and observation of all key parameters during pregnancy.

Patients were able to maintain normality, avoid the economic costs of frequent hospital visits, and de-escalate any anxiety and concern based on previous experience, while maintaining safety and a high degree of vigilance through remote monitoring. This ultimately ensured a good outcome, high level of treatment satisfaction and enhanced the patient's understanding of their condition.

The clinical benefits for this patient included achieving target blood glucose profiles, achieving a 4kg weight loss over a five-month period, effective titration of therapy remotely via text messaging and significant reduction in cigarette consumption (from 20 a day to 3 a day), due to reduced anxiety levels evoked by the knowledge of good foetal wellbeing and safety.

The evaluation confirmed an improved healthcare usage over a 20-week period reducing the routine four appointments to one appointment, with an overall cost saving over a 20-week period of £320 based on a single visit cost of £80 per patient.

Case Study Lead: Dr Rahul Nayar, consultant in diabetes and endocrinology (Rahul.nayar@chsft.nhs.uk)

7 MENTAL HEALTH RECOVERY FOR PATIENT IN RESIDENTIAL CARE

Staffordshire and Stoke-on-Trent NHS Partnership Trust

This case study is based upon new protocols to adapt the Flo system for use in mental health services nationally for the first time.

A 40-year-old woman (Miss C) had been placed in a residential home due to mental illness. All other options had been exhausted and this was a large investment in a package of care that proved to be ineffective. Miss C had difficulties in remaining compliant with her medication and displayed a high DNA rate for appointments.

The patient's mental health and rehabilitation needs were reassessed. She was introduced to Flo and transferred to a 24/7 mental health supported living scheme. Miss C received two daily messages as prompts for medications and appointment reminders. She was also sent ad hoc messages to provide general advice and positive reinforcement, allowing contact with Miss C without the need for one-to-one visits.

The outcomes from this initiative are:

- Improved satisfaction with care.
- Compliance with medication and appointment reminders, and a reduction in DNA rates.
- Improved physical health and mental wellbeing.
- The patient's life no longer revolving around the provision of services.
- Greater patient-led focus

With regards to Miss X they observed greater compliance with medications and subsequent improvement and stabilisation of mental health, plus a reduction in DNAs with associated cost savings. There were also cost reductions associated with accommodation and staff time. Ultimately, the patient moved into her own flat and began independent living. Shortly afterwards she started voluntary work and has since been discharged from mental health services and remains stable.

Case Study Lead: Donna Cantrell, advanced nurse practitioner

8 PATIENTS WITH VASCULAR RISK FACTORS AT HIGH RISK FOR MILD COGNITIVE IMPAIRMENT/DEMENTIA

North Staffordshire Combined Healthcare NHS Trust, Stoke-on-Trent CCG

In November 2013 a Flo pilot was developed by the trust's mental health and vascular wellbeing team in conjunction with the CCG. The pilot was conducted with eight patients from the community who met the criteria of having been referred to the team and who were at high risk for mild cognitive impairment/dementia (MCI/D). This was the first time that Flo had been piloted with patients with vascular risk and at high risk for MCI/D.

A key aim was to find out whether text messaging was useful in helping patients to self-manage their vascular risks by stimulating positive behaviours. Seven out of eight patients received a generic wellbeing text on alternate days at 11am over a six-week period. They also received a text related to self-management of a specific vascular risk factor on the same days at 4pm.

One patient struggled with mood and was sent a daily request to rate their mood on a scale of 1 to 8, where 1 signified 'least anxious' and 8 signified 'most anxious'. When the patient replied, they

received a text from Flo to say 'well done' and relay advice on how to maintain their positive mood, or a text advising what they could do to improve their mood.

Although all participants were made aware that Flo messages were delivered via a computer system Flo was personified, and given human characteristics, with patients reporting: '*You feel like somebody cares*', '*It's like a friend.*' Understanding what prompts patients to make this very personal connection may provide valuable insights for further development of Flo in mental health contexts.

EXAMPLES OF TEXT MESSAGES:

'Try something new. Set yourself a challenge. Take up a new (or old) hobby, learn a new skill. Be creative! This can help improve your mood. Thanks Flo.'

'Stopping smoking can help you feel better, and you will have more money to spend on other things that you enjoy. Flo.'

'Skipping breakfast can make you feel tired, hungry and more likely to choose high calorie snacks. Thanks Flo.'

'Pace yourself by sipping alcoholic drinks slowly and concentrate on the taste. Space your drinks out - have a soft drink or glass of water in between. Thanks Flo.'

'Walking is good for you, take the dog for a walk or find a local park and go walking with a friend. Flo.'

Analysis of individual narratives supported the view that Flo aided at least modest behaviour change. In the case of one participant a significant change in smoking was linked specifically to Flo texts.

At the end of the pilot, seven of the participants had increased their overall score on the Warwick-Edinburgh Mental Well-being Scale from between +4 to +18. In clinical practice, Putz et al (2012) suggest that an increase in score of between 3 and 8, or greater, can be considered indicative of a 'meaningful' positive change in mental wellbeing.[19]

The team highlighted that text messages are not only a 'normalised' and non-stigmatising medium for communication and information transfer but may also provide a means for supporting this group of patients to self-manage their condition. The text message medium delivers short, essential information that makes retention easier for people experiencing memory problems and cognitive impairment.

The set-up and roll out of Flo text messaging represents a relatively low cost addition to service provided by the team. An important benefit is high acceptability of Flo text messaging to patients with MCI/D and vascular risk. Flo has potential to add value that extends beyond individual patient gain into areas such as shortening the time of face-to-face therapy sessions and extending applications of Flo to appointment and medication reminders.

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Profile: Simple Telehealth and Florence, or 'Flo'

A simple, available and responsive communication process between patients and clinicians, using mobile phones

Simple Telehealth offers a unique approach to telehealth services, with SMS texting at its heart. The central system is called Florence, affectionately known as 'Flo' to its users, which allows clinicians to remotely interact with patients regarding their healthcare to achieve better and faster health outcomes, improved patient adherence to clinical pathways and increased productivity.

The approach is aligned to the national TECS strategy[20] to increase the take up of tele/digital health services and is supportive of the need to move our health economy towards a more preventive and proactive approach, reducing the reliance upon expensive acute services.

Florence offers a simple, available and responsive communication process between patients and clinicians, taking advantage of mobile phones as the perfect information link between healthcare professionals and patients, in the knowledge that there are now more mobile phones than people in the UK.

Low-cost telehealth solution based on common technologies

The Simple Telehealth approach is ultra low-cost, based upon common technologies and equipment. Typically, the annual cost to a CCG covering all general practices in their area, to support around 750 patients a year, is £14,000, inclusive of two bundles of 37,500 text messages. Text messages for patients and practices are free.

Further bundles of texts can be purchased via a pay-as-you-go service by the CCG. Some low-cost equipment, if not already available within practices, may need to be purchased for the use of patients, for example blood pressure monitors.

Deployment of the approach is simple, web-based, and accessible from any location with an internet connection, requiring no software downloads or equipment to be installed. Once the licence is live, the licensee receives support from a Simple Telehealth facilitator and access to the online community, offering resources, shared experiences, documentation, FAQs and more. Further intense support is available on a day rate basis. Currently there are more than 50 CCGs holding licences for the GP practices within their areas.

More than 1,000 clinical protocols to fit the needs of patients

The approach is simple to use both from clinician and patient perspectives. Following identification of an appropriate patient, the clinician will need to spend around 10 minutes explaining the arrangement to the patient, securing their informed consent and commitment to their shared management plan; then registering them and their mobile telephone number on the Simple Telehealth system. The clinician selects the appropriate clinical protocol(s) for the patient from the library from more than 1,000 options. Protocols can be modified, new ones developed and also tailored to suit the patient by the clinician, for example the timing of medication reminders.

Simple Telehealth is developed and owned by the NHS, and the programme is led by Stoke-on-Trent CCG.

For further information visit:
www.digitalhealthsot.nhs.uk

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SIMPLE TELEHEALTH

Simple Telehealth offers a unique approach to telehealth services, with SMS texting at its heart. The central system is called Florence, affectionately known as 'Flo' to its users, which allows clinicians to remotely interact with patients regarding their healthcare to achieve better and faster health outcomes, improved patient adherence to clinical pathways and increased productivity. The Florence system is ultra low-cost, very simple to use by both patients and clinicians and is easily deployed. Patients send key information using their mobile phones, and the system then flags automated text responses to reassure the senders or suggest corrective actions. Clinicians can monitor patients remotely, send reminders or important information.

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For further information see page 19 or visit: www.digitalhealthsot.nhs.uk

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