



Making Digital Healthcare Happen in Practice

A PRACTICAL HANDBOOK

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Disclaimer

While every effort has been made to include accurate and up-to-date information about legal requirements, IT infrastructure and other resources such as hyperlinked websites, knowledge and understanding are constantly evolving and being updated. Therefore, use the content of the handbook to learn more about how you can adopt or enhance your use of digital healthcare and weigh up the choices, information and guidance for your own circumstances. The content is not a substitute for national advice and guidance from professional or regulatory organisations. Inclusion of named agencies, websites, companies, services or publications in this book does not constitute a recommendation or endorsement.

Foreword

Primary Care remains the cornerstone of the modern NHS. As the demands on the health service become greater through a growing and ageing population, as well as the increasing expectations of the service users, the role of both Primary Care and GPs becomes even more pivotal.

We need to find ways to manage a greater number of patients and provide a more patient-centric service, one that meets the needs of the individual, whilst at the same time ensuring that patients understand and are well-informed partners in the management of their health.

The use of digital technology provides the healthcare system with opportunities to improve health outcomes for a greater number of patients by providing a range of solutions for access to services and information. This will lead to the true transformation of the NHS to meet the needs of the patients of today and tomorrow.

This guide explores the emerging technologies which have been shown to support patient care and considers the potential operational challenges of embracing new technology.

Technical adoption requires more than just new digital solutions. True digital transformation will only be realised with strong clinical leadership and a culture shift in the way we deliver care, a shift toward a real partnership between the patient and clinician.

Dr Masood Nazir
GP & National Clinical Lead – Primary Care Digital Transformation NHS England
January 2018

About the authors

Professor Ruth Chambers OBE

Ruth is an experienced GP, having worked for more than 30 years in different practices. She has also held many lead roles in academia and with the Royal College of General Practitioners and the Department of Health. Ruth has various clinical interests, all focused on disseminating best practice in healthcare. She is always thinking of new ideas, putting some of them into practice, testing out innovations in creative ways and disseminating learning as widely as energy levels and opportunities allow. Ruth is currently the clinical Chair of Stoke-on-Trent Clinical Commissioning Group and clinical lead for the West Midlands Academic Health Science Network's (WMAHSN's) Long Term Conditions Network. Email: Ruth.Chambers@stoke.nhs.uk

Marc Schmid

Marc has had a career spanning over 20 years in media and communications. He worked as a PR adviser to a member of the European Parliament and member of the UK Parliament and has developed a career at a senior level working across communications in local government and the NHS. In these roles, and as a director of a social enterprise, Redmoor Health, Marc has delivered digital projects across education, the NHS and local government for the last 10 years. With most of his attention focused on the health portfolio, Marc has worked across the West Midlands and North-West England developing the use of social media in primary and secondary care settings, as well as training and developing health and social care staff to use digital modes of delivery as part of the transformation agenda. Twitter: @marcschmid

Abdul Al Jabbouri

Abdul is a final year medical student at Keele University. He has always enjoyed an interest in the latest technological advancements in the computer world and has held onto this passion on entering the medical field. Abdul's view is that technology in medicine will change our day-to-day practice for good over the future; he wants to be at the forefront of this exciting potential and share his knowledge.

Paul Beaney BA

Paul graduated from Keele University with a degree in English & Philosophy in 2009 and then began his professional life in sales. Following a career change to healthcare in 2014 he returned to Keele University in 2015 to study medicine. Working with Dr Ruth Chambers since 2017, he has provided input as an evaluator of projects related to Patient Online and the adoption of technology-enabled care services (TECS) in primary care environments. A keen student and collaborator, he wants to help initiatives that can improve health delivery in local communities and he believes that TECS are integral to making that possible.

Preface

We hope that this practical handbook will help frontline teams in general practice and other healthcare settings to really get going with their digital delivery of care. That could be via apps, video-consultations, Facebook or telehealth to provide different modes of clinical consultation or to empower patients to take more responsibility for their own health and wellbeing, thereby preventing deterioration of their long-term condition(s) (LTCs) or improving their lifestyle habits. Alternatively, it might be enabling patients to understand more about their condition through intelligent access to Patient Online or by interaction with trusted information about their condition or lifestyle via apps or recommended websites.

The aims of the learning content in this handbook for clinicians and managers are:

- 1 To enable patient empowerment of their LTC(s) or adverse lifestyle habit(s) via technology-enabled care services (TECS).
- 2 To overcome the challenges and persist with adoption of TECS as a mode of delivery for usual care.
- 3 To strive to deliver best clinical practice via shared decision-making with patients.
- 4 To learn from others' experience of adopting TECS.

This learning resource underpins the digital quality standards we have established to recognise NHS delivery teams/organisations that have shown a commitment to adopt the use of TECS for patients/citizens in relation to LTCs or lifestyle habits. The digital quality mark is being created and promoted by the LTC Network of West Midlands Academic Health Science Network (WMAHSN) with a suite of materials to support frontline practitioner teams, e.g. in general practices, in adoption. These include:

- TECS video tutorials linked to various modes of technology from expert, clinician and patient perspectives.
- Social media toolkit (see Chapter 5).
- Facebook Group to which members can refer and connect with other innovative practitioners/frontline teams.

Acknowledgements

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Chapter 1

Where we are now with technology-enabled care

Digital technology offers great opportunities for transforming health and social care services and associated outcomes, and for improving the experiences of patients or service users and their carers.



If we focus technology-enabled care (TEC) we can show that successful remote delivery of health and social care:

- saves money
- is more convenient
- enhances productivity of NHS or social care teams
- enhances clinical outcomes (so people live longer in a healthier state).

Selecting the right type of TECS for a particular person, or pathway, should result in:

- improved patient empowerment, e.g. self-management, agreed titration of medication, etc. to achieve improved clinical outcomes

- fewer avoidable hospital (re)admissions and visits to A&E, saving NHS or social care resources
- promotion of good patient lifestyle habits, e.g. managing obesity, smoking cessation, tackling alcohol misuse, thus enhancing quality of life and prolonging life expectancy
- enhanced shared clinician and patient management of long term conditions (LTCs), such as chronic obstructive pulmonary disease (COPD), asthma, diabetes, heart failure and hypertension, as well as other health problems like dementia, thus preventing deterioration of those chronic health conditions
- consistent application of best practice in clinical management along patient pathways spanning all health settings: general practice, pharmacy, community care and acute and mental healthcare
- extended availability and accessibility of patients to a variety of technologies including interactive video-consultation, mobile phone texting, fixed or wireless communication via smartphones and tablets, health apps and telephone or email consultation
- enhanced competence and expertise in digital delivery and experience in applying telehealth, as individual health or social care professionals or teams for a range of TECS in local, national and international settings.

But it takes time – and many new TEC schemes can take up to three years to set up, recruit or train the workforce and achieve impact from delivery of the scheme.¹

We need to optimise the power of individuals to take more responsibility for self-care and shared management of their health conditions and lifestyle habits, hopefully aiding prevention and management of any long-term illnesses. This might be via personalised care plans, with technologies being an option to help people track and analyse their own health data, and social innovation with different approaches to peer support, such as via social media. We should make best use of the high rates of Internet access in the UK, currently around 90%.²

TECS are a combination of equipment, information, monitoring and response that can help clinicians and patients to manage a person's health and social care. It should be the drive to improve clinical outcomes for individual patients that dictates whether digital delivery is useful and, if so, what types of remote delivery of care suit the patient's needs and preferences for the resources available. There might be a particular focus on managing LTCs effectively, thereby preventing avoidable deterioration or minimising the consequences of the conditions. This might be through titration of medication, reminders to take medication regularly or attend review appointments, relaying of bodily symptoms, signs or measures by remote means, encouraging improved lifestyle habits, or giving patients (and clinicians) more understanding of their conditions. The essential ingredient to the success of TECS is the dual management plan agreed between patient and clinician – with hopefully more than one clinician involved along the relevant patient pathway – interfacing between all care settings.

Virtual access to patient records

Patient online access to a person's medical records, booking of appointments and ordering repeat prescriptions is available in general practice. Individual patients can request that access to their records is extended to other clinicians.³

People are increasingly choosing to book appointments at their general practice and order repeat prescriptions online. Some want to view their own health records online, including blood test results, appointment records and medical histories. There should be associated benefits from such information-sharing including increased patient safety with fewer mistakes, duplications or erroneous drug doses; hopefully fewer unnecessary phone calls to practices if patients can book or cancel their appointments; and increased ability for patients to make informed decisions about their health and well-being.³ However, there are potential risks too: people might be coerced by family members or friends to share access to their medical records with potential harm and safeguarding issues if there is sensitive information in the content. If online services become the prime way to book appointments, those who are more technologically able might snap up the majority of appointments at the expense of poorer people who live without home Internet access or are not digitally competent.

Some ambulance services share patient records through digital systems with A&E teams and many healthcare providers interact with others in different settings through shared records or multidisciplinary interactions via a Skype 'meeting' with or without the patient present in person.

Telephone consultations

Telephone consultations (via landline or mobile phone) between care practitioner and patient have been in place for decades. Sometimes that is because the patient prefers a phone consultation for convenience; for example, they do not need to take time off work to attend or leave the person they are caring for. Sometimes a clinician might initiate it because they want to feed back test results and discuss the next steps; or modify a treatment or intervention as a stepped management plan; or a GP might initiate a phone call after communication from other care providers such as a hospital consultant or community nurse. There are information and clinical governance issues relating to telephone consultations, including confidentiality, documentation and safety-netting. The clinician initiating the call needs to be sure that they are talking to the 'patient' whose symptoms, treatments or records they are discussing. The clinician will need to practise safe, comprehensive history-taking if they are making a diagnosis or altering treatment. They need to take care to make appropriate levels of decision by phone, when they cannot see the patient or take bodily measurements. If they are relying on a patient's reported measurement, they need to be sure that the equipment and way it is used is reliable and valid. Telephone triage can work well, such as for patients seeking a consultation with, or home visit by, a GP, or for an out-of-hours service. Patients in most need can be prioritised and others fitted around, while patients who would otherwise have had to take time off work to attend the GP's surgery can be safely advised or treated remotely via the phone consultation.

Email healthcare services

If a clinician or carer is emailing a patient or service user, they need to remember that this interaction will not be via a secure encrypted exchange; others might read the recipient's email if it is left unattended or if an incorrect email address is used.

The secure email standard is available at: <http://systems.hscic.gov.uk/nhsmail/future/service/security/index.html>. This includes guidance on policies and procedures relating to NHSmail – for those with or without an N3 NHS connection. The email standard has been developed to support the secure exchange of sensitive information between health and social care organisations using secure email services.

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Chapter 2

Moving to attain the digital quality mark for your practice

Your person-centred culture

In essence, person-centred care is simply the right care for the person's (or carer's) needs and preferences, delivered with dignity, compassion, sensitivity and respect, at the right time and place, with due regard to the person's age and any cognitive impairment.

In addition, it is:

- holistic care that includes physical, mental, emotional, spiritual and social aspects and the person's own perspective and experiences – as appropriate
- shared care: informed, value-based, preference-sensitive and agreed between the person (and carer or family if appropriate) and the care professional
- safe: with informed decision-making balancing potential benefits and risks where there are options for different routes and modes of delivery of care
- designed and evaluated with public, community and patient input and feedback
- proactive and inclusive of health promotion as well as primary, secondary and tertiary prevention
- integral to a quality improvement culture in health and social care.^{1,2}



Self-management support and patient education are core to enabling individual patients to share management of best practice in the care of their LTCs or take responsibility to combat unhealthy lifestyle habits.¹

You will encourage behaviour change via self-management by shared care between the patient or service user and health or care professional in the following ways:

- establishing a shared agenda – what it is that you are both focusing on
- setting goals – agreed by the patient and carer as being achievable and beneficial
- following up how well those goals are achieved, or agree other linked goals if progress is slow or the self-management doesn't work out as planned or – better still – goals are attained so fast that you can agree another set.

Shared goals and plans need to be person-centred and co-ordinated across different providers of care, taking into account co-morbidities or various adverse lifestyle habits that the person is hoping to redress. In general, feedback from patients or service users is that they welcome individualised goals that are set to support them to improve their health, and it helps them to feel more in control. This is more about 'concordance' than 'compliance' in that the person understands why the goals need to be set to improve their health and the what and how of doing so, rather than being instructed to simply adhere to clinician-set goals and actions.

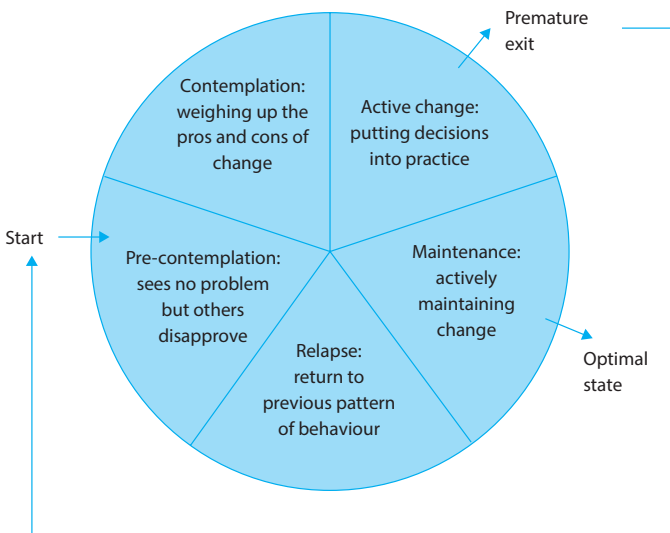
The more up-to-date information that a patient receives about their condition, such as bodily measurements (e.g. blood pressure) and test results (e.g. HbA1c and cholesterol for those with diabetes), in the context of the goals agreed in the shared care plan, then the more motivated the patient is likely to be to strive to attain the agreed health-related goals.



Understanding how to make change happen

Figure 2.1 describes the stages in the cycle of change through which individuals move and how they must be motivated to change so that, potentially, individual users pass through the stages of contemplation (e.g. use of a different method of healthcare delivery such as Skype) and on to the stage of taking action for themselves.¹ They need realistic targets for change that are achievable and do not demotivate them or allow them an escape route ('I knew I couldn't do it'). In this case the cycle of change, as applied to the use of Skype between patient and clinician, needs to be populated with different actions for the individual patient and practitioner, but it is the same progression around the cycle with support and positive experience that maintains the change.

Figure 2.1: Cycle of change



To understand what intervention to use to try to help people to change, you need to determine whether individuals are ready to change or have already taken action. Then you can match your approach or intervention to the stage at which they are.

Clinicians who see the need and potential benefit of using TECS should be willing to select appropriate patients, interact effectively with individual patients and undertake proactive management. Therefore:

- have courage
- be open minded, reflect, rethink
- collaborate and swap or share ideas – develop a shared vision
- find investment – from industry, academia, commissioners, providers (matching their strategies or priorities); make the most of opportunities
- don't give up!

Completing information governance requirements

Check that your clinical commissioning group (CCG) and other local health and social care organisations have endorsed all relevant national requirements relating to IT security, clinical safety, data quality, the use of patient data, data protection and privacy, information standards and other recommended good practice. These will usually have been signed off by the Caldicott Guardian – see Appendix 1 for full details.

Informed patient consent

Consent can be verbal, written or implied; implied consent is non-verbal compliance by a patient with a particular treatment, examination or mode of consultation.

Attaining good quality and standards of digital delivery in your practice

A digital quality mark 'rating' can reward the practice team that demonstrates their commitment to adopting TECS for patients/citizens in relation to LTCs or adverse lifestyle habits. These include:

- telehealth
- video-consultations with patients either in their homes/other private locations or resident in nursing or care homes
- social media (e.g. Facebook, YouTube) with patient condition groups and with practice patient participation groups (PPGs)
- mobile apps
- enabled-access to Patient Online.



The digital quality mark is being created and promoted by the LTC Network of WMAHSN

Adoption of TECS is a complex process with exemplar frontline teams and champion practitioners embedding technology into their day-to-day processes with vast numbers of practitioners/patients being left behind. As a result, the potential uses of technology as an integral element of the usual modes of patient care delivery are seldom realised.

Key elements of the quality mark: the 7 'Cs' relating to TECS delivery for LTCs/ lifestyle habits

- 1 **Competence:** practitioner, manager and patient/carer/citizen – ability in relation to personal use of range of TECS delivery modes for agreed purpose and feeding-in information/acting on advice and information.
- 2 **Capability:** practitioner, manager and patient/carer/citizen – actual best practice in use of range of TECS delivery modes for agreed purpose and feeding-in information/ acting on advice and information in daily professional/everyday life.
- 3 **Capacity:** possess protected and prioritised time for initiating and participating in remote delivery of care that is regarded as a key element of work role (practitioner/ manager) or personal life (patient/carer/citizen) + the IT infrastructure and equipment is available and easily accessed by all service providers and users.
- 4 **Confidence:** practitioner/manager confident that organisational infrastructure is in place in line with code of practice including reliability and validity of equipment and its outputs. Patient/carer/citizen confident that usage of TECS is an integral part of clinical best practice as agreed with clinician, and that their responsible practitioner will access/act on relay of TECS messages or interchanges.
- 5 **Creativity:** practitioner/manager able to adopt and adapt agreed TECS for different purpose or patient/carer group in line with code of practice.
- 6 **Communication:** the sharing and dissemination of digital modes of delivery and associated clinical protocols; evaluation of applications/outcomes/challenges, etc. with a team or organisation; working together and sharing what has worked well and what has not worked so well.
- 7 **Continuity:** at least one practitioner/patient is able to interact via mode of TECS along one pathway for LTC/lifestyle habit; if the practitioner is not at work then cover is arranged as appropriate and pre-agreed with the patient in line with the agreed shared care management plan.

What does the quality mark look like?

It is based on minimum adoption of:

- three modes of TECS delivery available for patients to access for previous six months (at least 10 patients accessing each mode of technology) + at least 10% of patients signed up to Patient Online + associated clinical protocols specifying TECS element + adherence to TECS code of practice (see Appendix 1)

and:

The practice must invest in staff training to support the delivery of TECS

- Staff learning programmes offering a blended approach – some face-to-face and remote learning.
- Using social media to engage with patients and develop their PPGs. Using social media to encourage patients to register on Patient Online.
- Having the necessary infrastructure in the practice to use digital delivery – this includes wi-fi access, and up-to-date equipment.
- Running video-consultations with patients in willing care or nursing homes.
- Using video-consultations directly with patients for clinical delivery.
- Encouraging patients to use selected apps for their LTC(s)/lifestyle habit(s).
- Using other form of telehealth, e.g. Endoscope-i, Florence Simple Telehealth.
- Supporting digital development/upskilling of patients with LTCs or adverse lifestyle habits, or their carers.
- Aiding production of self-care video tutorials for patients.
- Having a clinical champion per practice.

and:

Attainment of key performance indicators³

- Quality: improved medical adherence; increased patient/carer satisfaction; increased patient knowledge of health condition; increased monitoring of people's health, e.g. BP.
- Efficiency: reduction in GP/other care staff home visits; reduction in number of A&E attendances and admissions from care homes; reduction in numbers of ambulatory case-sensitive conditions admissions; reduced numbers of emergency hospital readmissions.

Why evaluate?

You need to check that the changes you're making to service delivery by TECS are worthwhile. This may be through, for example:

- determining whether the service detects a person's health problems or initial signs of deterioration at an earlier stage
- establishing whether the service helps to trigger appropriate patient or service user actions, or rapid clinician/carer responses, which avoid unnecessary health or social care usage
- estimating costs and savings to NHS or social care funds
- identifying ways that the service could be improved in the future.

You could conduct phone surveys or focus groups of your patients or survey clinicians or managers to look in-depth at:

- 1 **Enhanced patient autonomy:** do patients better understand their LTC or the adverse effects of their lifestyle habits? Has the patient remained independent at home rather than enter a continuing care home? Has medication or other treatment been titrated against an agreed care plan?
- 2 **Impact on healthcare usage:** perhaps fewer or no avoidable hospital admissions or trips to A&E; less wastage of medications as patients take them regularly.
- 3 **Breadth of patient or service user engagement:** efficient delivery of healthcare may allow a greater number of people to receive services or reach a different patient group.
- 4 **Impact on clinical outcomes:** real-time (or close to real) monitoring of vital signs and test results may enable more rapid titration of medication (e.g. antihypertensive drugs) or initiation of medication to prevent deterioration (e.g. rescue medication for COPD).
- 5 **Patient or service user satisfaction:** patients, their family or carers may have a more positive experience of care when they are trusted to measure aspects of their health (e.g. blood pressure, oxygen saturations) or well-being (e.g. mental health scores). This may lead to a greater understanding of their condition and factors that affect their well-being.
- 6 **Patient motivation:** for example, persisting with smoking cessation, weight management and an alcohol-free lifestyle through remote encouragement and questioning.

DOING ALL THESE
AUDITS AND EVALUATIONS
ON OUR SLEEP APP IS
SENDING ME TO SLEEP...



7 **Patient engagement:** such engagement may be linked with satisfaction and clinical outcomes.

8 **Professionals' acceptance of technology.**

While maximising the benefit for a unit cost is an important feature, determining the cost-effectiveness of a TECS service may be challenging. However, this is important to measure if you can – as case studies or targeted reviews.

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Chapter 3

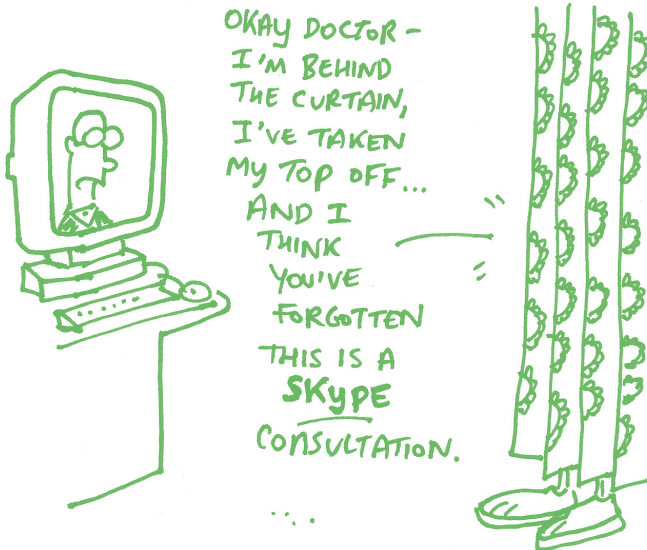
Video-consultation or telemedicine

'Telemedicine' is a term that has varied interpretations. It sometimes relates to the use of sensors and electronic means of communication from one clinician to another to aid diagnosis and clinical management, such as a pre-booked video-conference between GP or community nurse and consultant for a shared patient consultation (the patient may or may not be present too).¹ Sometimes the term 'telemedicine' has a wider application, such as 'distance medicine using information and communication technologies to examine, monitor, treat and care for patients over a distance ... both within and between all kinds of healthcare institutions as well as to monitor and provide support to patients living at home!'¹

The terms 'telemedicine' and 'teleconsultation' include 'the use of video-conferencing facilities (or high-quality webcams) to enable remote consultations between patients and healthcare professionals, as well as peer-to-peer consultations between professionals'.²

Video-consultation can provide a remote facility for clinicians to deliver face-to-face care without the patient attending an in-person consultation. It doesn't directly replace face-to-face meetings but can be used in an integral way for the right person as an alternative to the patient attending a clinic session or the clinician making a home visit.

In practice, the use of video technology may be as simple as two clinicians discussing a case via Skype or as complex as bespoke video technology linking GP practice teams with care homes such as is happening in Staffordshire.



Video-consultation might be provided via an encrypted connection rather than a non-confidential video interaction via Skype. Skype might be set up between the clinician and a patient who has their own access to Skype via their mobile phone, tablet, computer or other device; or it might be set up for clinician-to-clinician interaction for a remote peer professional meeting or between practitioners in different settings (such as acute hospital and general practice settings). Sometimes connectivity can be difficult, such as in multi-dwelling occupancies or with particular mobile phone services.

Benefits

Telemedicine is enabling health professionals to evaluate, diagnose and treat patients remotely using the latest technology with the following benefits:

- Minimising travel: for patients, clinicians
- Improving networks: for health or social care colleagues
- Remote consultations reduce the spread of infections
- Reducing stress: relieves pressure of the patient visiting a clinic
- Encouraging self-care: video-consultations can be linked to self-monitoring.

Challenges to using video-consultation as a mode of delivery of care

Start with initial internal discussions with IT providers and information governance (IG). Example protocols (see Appendix 2 and www.digitalhealthsot.nhs.uk) have satisfied these types of concerns in CCGs and practices, and include medical defence organisations' considerations. You might adopt or adapt some sections of a document for your own purpose and to fit with local IG and security procedures.

In gaining consent from patients or service users be clear that this form of consultation does not replace existing services but enhances them. Suitable patients may be ones who are repeat non-attenders or are suffering from a LTC where accessing GP services is difficult. Start organising video-consultation clinics as a team. This involves the practice compiling the Skype contact list, messaging the patient to inform them when their consultation will take place and then contacting them at the given time as you would with a telephone consultation. Take a look at the patient information leaflet and consent forms in Appendix 2. The equipment required will include a laptop or PC, a dual screen or a webcam. Check your broadband connection speed beforehand by testing the approach before going live, or have a dongle on standby.

Example 3.1 illustrates how a healthcare team uses Skype.

Example 3.1: GPs pilot the use of Skype with patients

GPs at Cavendish Health Centre in London piloted the use of Skype consultations with patients, with 95% of patients involved saying they 'would use it again'.

Ninety-four per cent reported that they were satisfied or gave a better rating that the consultation had met their medical needs and 78% were satisfied with how long they waited for the appointment.

A broad mix of patients used the service including working people and parents of young children. Two-thirds of patients joined the remote consultations from home but more than a quarter – 28% – Skyped from their workplaces.

Dr Alice Fraser, the lead GP at the pilot practice, said: 'The flexibility that remote working offers means clinicians can make more efficient and productive use of time ... Our patients with mobility or transport problems could get a more detailed consultation via Skype than a telephone conversation might allow, so this service proved especially useful for them.'

While Skype–Skype voice, video or file transfers and instant message interactions are encrypted, calls from Skype to a mobile or landline phone is not. Skype is on the NHS G-Cloud which contains approved software for use by NHS organisations.

Barriers to implementing telemedicine

Setting up telemedicine needs to happen at scale if it is to be effective. That requires planning, engagement and some upskilling with prior agreements on IG, privacy impact assessment, informed consent, medical defence organisation indemnity and protocols, as well as the cost and set up of equipment (encrypted video link or webcams) and upskilling (patient or service user, clinicians, administrators). Concerns about the security of Skype are addressed in Appendix 2.

Form of telemedicine to use

This is entirely dependent on the available budget and support from the IT teams. If you are happy to adopt or adapt the protocols that are available here or don't have a budget to install bespoke equipment, then low-cost options such as Skype and FaceTime have been tried and tested.

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Chapter 4

Apps

Around three-quarters of adults in the UK have a smartphone.¹ They can be used for medical applications coupled with wearable biosensors, and are able to sense, analyse and display vital signs, generate alerts to significant changes or deterioration and highlight escalation of a condition which can then be addressed in a timely way. Attachments that can track heart rhythms or monitor mental health via apps can lead to better health outcomes while being more convenient for the patient, their carer and clinicians.

Health-related apps are often bought or obtained by individuals and uploaded onto their mobile phone or tablet or accessed via websites, as in Example 4.1. Health apps can enhance a person's understanding of their health condition and empower them to manage their health or be more aware of their lifestyle habits and the associated effects on them. Uses of a health app include:

- enabling remote monitoring of a person's adherence to an intervention or medication, or bodily measurements such as their weight
- supporting self-diagnosis or monitoring
- providing professional support and education
- signposting to appropriate services
- sharing visual images and information to enable remote diagnosis
- underpinning of clinical networks.

I LOVE MY
NEW 'MIGRAINE'
APP - IT TAKES
THE HEADACHE
OUT OF REMEMBERING
TO FILL IN A
MANUAL DIARY..



'mHealth' can be defined as 'health-related mobile apps and health-related wearable devices'.² Hundreds of thousands of health apps are available, including those designed to support general health and well-being or monitor health conditions; apps for clinicians or carers; and apps that function as medical devices. Uses for personal wellness and activity tend to be initiated by individual consumers so that there is less need for confidentiality of the data generated. When used for reporting to clinicians or patient/hospital systems, data confidentiality must be preserved.

The NHS in England has an online apps library (see <https://apps.beta.nhs.uk/>) with included apps regarded as being 'clinically safe'. There are European regulations about medical apps. If they are used for diagnosis, prevention, monitoring, treatment; or alleviation of disease, injury or handicap; or investigating, replacing or modifying the anatomy or physiological process; or controlling conception, then a 'CE' mark is mandatory. Apps that are designed for administrative functions, give general guidance or support training are not classed as 'medical' and thus do not require accreditation. Those apps that provide personalised advice and are diagnostic or used for medical purposes are regarded as 'medical' apps and therefore need a 'CE' mark (see <http://dhaca.org.uk/>).

All apps in the UK are regulated by the Data Protection Act 1998 (DPA) and the European Directive on Misleading Advertising.³ If an app is considered to be a medical device it is regulated by the Medicines and Healthcare Products Regulatory Agency (MHRA).⁴ Clinicians are advised that they should not use or recommend medical apps, including website apps, that do not have a CE mark; and clinicians should always exercise their professional judgement before relying on information from an app.⁴

Mobile devices and apps can support a variety of routine medical tasks from viewing X-ray results to tracking symptoms and vital statistics. These apps help clinicians to diagnose, monitor and treat many common diseases such as drug dose calculation, patient education, accessing medical records, and clinical decision support.

You can visit sites of interest by scanning the QR code with your smartphone or using the website address.

ORCHA SITE

ORCHA, the Organisation for the Review of Care and Health Applications, offers a platform of validated apps so the public and professionals have the confidence to use and recommend apps to revolutionise well-being and resources. Their platform aims to allow professionals, patients and the public to embrace apps and at the same time reassure users that they are of sufficient quality and relevance.

www.orchaco.uk



MY HEALTH APPS

My Health Apps brings together healthcare apps – tested and reviewed by patients and service users – looking at changes in confidence, common problems and needs, achievements of targets or goals. It has been trialled by Kirklees Council for promoting self-care and providing support for people with LTCs.

<http://myhealthapps.net/category#MY HEALTH APPS>



A different type of device is the AliveCor mobile ECG which is used in conjunction with a patient's own Android or iOS smartphone or device to record an ECG. It can indicate atrial fibrillation and readings can be shared in real-time with clinicians to aid interpretation and management.

Encouraging self-care

The vast array of personal health information captured by smartphone apps can be used by the patient to gain a better understanding of when they are well and when they need to see a doctor.



When leaving hospital or their GP practice, patients often have very little memory of the advice they were given about their condition and what to do next. Many will often search for advice on the Internet, which can be a dangerous place when it comes to health advice. Apps that help to remind the person about what they need to do can help them to manage their illness and at the same time prevent them from having to seek further medical advice or access unverified medical advice from the Internet. Apps can be used to monitor medication usage to ensure that the person doesn't forget to take it or, as in the iVacc app, can store a record of a family's vaccinations and even send reminders when they are due.

Risks of apps

The content of Table 4.1 describes the different types of risks that can arise with medical apps and what can be done to minimise the risks.

Table 4.1: Different types of risk associated with medical use of apps and scenarios where these could arise.⁵

Type of risk in increasing order of severity	Main stakeholder affected	Sample scenario where this risk could arise	What can be done to manage this risk
Loss of reputation	Professional organisation	App displays sensitive performance data about professional or service.	Good security.
Loss of privacy, patient confidentiality	Patient	Poor security of patient data. Losing phone holding patient data.	Encryption. Avoid holding patient data on mobile device.
Poor-quality patient data	Patient, professional or organisation (e.g. financial data)	App allows incorrect data to be entered into patient record or retrieved from it at handover.	Data validation on entry and retrieval from authenticated source.
Poor lifestyle or clinical decision	Patient or professional	Incorrect patient data used in risk calculation algorithm. Misleading algorithm. Poor risk communication.	Check correct data is retrieved. Check algorithm is properly coded. Use proven health behaviour change methods.
Inappropriate but reversible clinical action	Patient or professional	Poor medication advice.	Test quality of advice on sample data. Provide facility for user feedback and respond to this.
Inappropriate and irreversible clinical action	Patient, professional or organisation (liability exposure)	Bad algorithm controlling insulin pump, surgical robot, radiotherapy machine, etc.	Adopt safety critical software design and development methods. Exhaustively check design and test algorithm and user interface.



Example 4.1: Manage Your Health app

The School of Pharmacy at Keele University has developed an 'app framework' to support the delivery of healthcare messages for people with LTCs. As well as useful health information and a personal log and diary, the app uses an innovative avatar to visually demonstrate health information and advice.

The app can relay updates to users and deliver a rich range of interactive materials on Apple or Android smartphones or tablets. Materials include text, images, interactive quizzes and activities with a 3D avatar giving information relevant to LTCs that users of the app may download. The app also uses augmented reality (AR) for patients with an Android or Apple smartphone or tablet with a built-in camera. The AR content will overlay information on top of the medication to illustrate how best to use the medication; for example, demonstrating good inhaler technique and answering common questions to help the patient's own asthma management, via an avatar.

Generic content helps guide users towards a healthier lifestyle, covering topics such as managing stress, goal setting, exercise, healthy eating, managing alcohol consumption, quitting smoking, coping with financial concerns, etc.

Go to the app stores at: <http://manageyourhealth.info/upskilling-patients-citizens-carers-programme/using-apps-to-support-long-term-conditions/> or visit Google Play Store at <https://goo.gl/n1WswP> or the Apple App Store at <https://appsto.re/gb/nNL-9.i> or Amazon at <http://goo.gl/oyiou1>

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- 3 www.gov.uk/data-protection/the-data-protection-act
- 4 Medicines and Healthcare Products Regulatory Agency (MHRA). *Medical Device Stand-Alone Software Including Apps*. London: MHRA; 2014. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/648465/Software_flow_chart_Ed_1-04.pdf
www.gov.uk/government/uploads/system/uploads/attachment_data/file/610189/Software_flow_chart_Ed_1-03.pdf
- 5 Lewis T, Wyatt J. mHealth and mobile medical apps: a framework to assess risk and promote safer use. *J Med Internet Res*. 2014; 16: e210. doi:10.2196/jmir.3133.

Chapter 5

Social media

A practice team (or any frontline NHS team) will get out of social media as much as it puts in. If a practice wants to engage with patients on health issues and signpost people to services then it will require some investment of time at the start. It will also take a commitment to have more than one member of staff skilled in using it. Once this is in place it doesn't take much time to learn how to use the channels quickly and efficiently. Once your audience is built up, the creative work can begin. This might be generating discussions on DNAs (did not-attenders) and how to minimise numbers of patients failing to turn up; or how to create simple self-care videos explaining what to do if someone has a cold; or the importance of vaccination programmes. A promotion of a young people's heart screening programme at a retail park in Stoke-on-Trent, for instance, proved so popular when advertised across GP Facebook pages that sessions were fully booked within hours. The reach for the advert was over 60,000 with over 500 shares from patients.

It is important for a practice to develop a communications channel that is not hindered by network issues. The 2017 cyberattack crippled general practices and hospitals throughout the country. Phone lines were down, websites couldn't operate and online bookings were not working. In the West Midlands, those practices that used Facebook were able to send out information quickly to their patients with instructions to share it across their personal networks. As they went into the weekend and more services came back online, practice staff were posting these updates to their patients by accessing their practice Facebook page from home. These practices have developed a useful weapon against future cyberattacks by building a social media presence into their business continuity plans.

A further reason for practices to use social media is to provide a landing page with accurate and useful patient information that counters the patient-generated pages that are now popping up. With patients accessing Facebook on their own devices whilst waiting for appointments they can create a profile for the practice whether it likes it or not. These unofficial pages are invariably negative and can display rather unpleasant comments about the practice, not to mention a running commentary between the person and their friends about why they're there. Some of these unofficial pages may have photos of the practice uploaded by more creative patients and to the untrained eye they look like an official page. The choice for any practice is therefore clear – would you rather have a Facebook page created by patients that is the first place a person lands on or one that you can manage?

Northern Staffordshire CCGs have been supporting their GP practices to use social media to engage with patients. The programme, which includes training and support materials, has resulted in over two-thirds of practices regularly using a form of social media. The most popular form of social media used has been Facebook but other channels include Twitter and YouTube. Some have supported the channels by producing short self-care videos by GPs on topics such as stroke prevention and asthma management. Topics discussed on Facebook range from simple health messages to the publication of DNA data, and consultations on appointment and telephone systems. Posts are scheduled to go out in the evenings and moderation of the site is managed through set times across the week.

Get started: develop your social media strategy using the five 'Ws'¹

So where do you begin? First, you need to develop a basic social media strategy that allows you to focus your social media intervention and allow time to evaluate its effectiveness. Look at our simple five 'Ws' approach which, once completed, will enable you to get the best out of using social media.

WHY are you using social media? Are you clear on the outcomes you want to achieve?

WHAT evaluation measures do you have in place to measure your activity? Social media may be free to set up but it can take up staff time to manage, moderate and measure.

WHICH groups are you targeting?

WHERE will you find them? There's no point creating a platform where most of its audience is 25+ years old if you want to engage with 16-24-year-olds. Do your research.

WHO is going to set up and manage these channels and moderate them? Ensure that a few staff have the skills to manage the pages as necessary.

Be creative

Using social media to engage with patients is simple once you've established who your audience is and what you want to achieve. What social media won't do is simply share your content with thousands of people without you having given some thought to what you are communicating. The most effective way of doing this is for you to put yourself in the shoes of your patient and imagine what they would be likely to read and share. Organisations frequently make the mistake of assuming that all content is treated the same and therefore just by posting something you can circulate this to thousands of eager social media users. This is simply not the case. Only content deemed to be of interest to the user will make an impact. For example, posting a link to the minutes of last month's practice PPG meeting will have little impact. But, explaining how many appointments have been lost by people failing to turn up and the result this is having on services will spark a discussion and, in turn, ensure your reach is bigger. Similarly, structuring your social media activity around events and topical issues will help. If there is a lot of media focus on 'flu, then updates on 'flu vaccines, clinics or general health tips will have more impact. Some of the best practices have created calendars of issues and schedule their posts in advance. This could include health and diet tips in January when people are making New Year resolutions to lose weight.

The key to success is creativity. Social media brings a personality to an organisation and some familiarity which will help soften any negative attitudes that may exist. People are less likely to be hostile to an organisation if they feel as though they are addressing a person. This is why organisations like Tesco and Virgin Trains spend a lot of time developing their social media profile as part of their customer services.

Social media can contribute to behavioural change by making information more accessible and personalised with motivational messages or reminders based on targets or goals. Dr Welton, a GP at Trent Vale Medical Practice in Stoke-on-Trent, recorded short stroke awareness videos which include signs of stroke, side-effects of stroke and lifestyle choices. This handy advice is provided through the practice's public Facebook page and has had impressive engagement results.

Creating advocates

The real success of using social media in healthcare can be seen by the creation of advocates. One of the most powerful impacts of social media in any organisation is when users begin to respond on its behalf. These posts are far more powerful than anything the organisation itself can do and will only happen once a proper relationship has developed. That's why a great deal of time and effort needs to be spent on generating conversations and, most importantly, responding to posts. There are some excellent examples of patients defending a GP practice when complaints are posted about too few appointments, or glowing praise for practice staff in response to negative posts about customer service. A disgruntled patient will be posting negative comments anyway regardless of whether the practice is using social media or not. By engaging with social media, a practice can try and manage the complaint and take it offline. This approach is adopted by companies such as Nissan who invest a great deal of time and energy in turning owners into advocates by creating brand loyalty. By capturing positive experiences through social media and nurturing relationships, advocates can be developed. But obviously if there is a barrage of complaints then you must check whether there is an underlying problem causing it – and rectify it.

Dealing with difficult posts

Avoid the temptation to simply delete any negative comments or, worse still, get into a public tit-for-tat. Take a grown-up approach and understand that just because someone posts a negative comment it should not automatically be removed. Constructive criticism is no bad thing and a response acknowledging the complaint and pledging to look into it, can be powerful in terms of developing advocates. The simplest way of managing negative posts is to contact the complainant directly by messaging them and inviting them to make the complaint in person. By doing so you are asking them to consider whether they are serious or not, as well as reassuring them that you are taking their complaint seriously. Critics can be turned into advocates simply by responding to a complaint effectively. When you speak to any practice that regularly uses Facebook they will tell you that they see more positive and neutral comments on their pages than negative ones, so don't be put off. Therefore:

Do	Don't
<p>Put a disclaimer on any account where you speak about your job role or the NHS, stating that the opinions are your own and not those of your employer. This includes Facebook if you identify on there that you work for the NHS.</p> <p>Understand that this disclaimer will not protect you from your public comments being taken out of context, as the Press Complaints Commission recently ruled.</p> <p>Understand that as soon as you make a post in your work capacity on your personal account, you have crossed the line in relation to the professional guidelines.</p> <p>Think about your posts from a patient's or service user's perspective. Is this something they would be interested in reading and sharing with their friends?</p> <p>Ensure that staff using social media have had some training and are comfortable using social media.</p>	<p>Assume that hiding a comment behind a privacy setting means it will never see the light of day. It's easy for people to take a screenshot with your words in black and white.</p> <p>Tag inappropriate photos on Facebook which are public (and if they're not, beware of the 'friends of friends' sharing setting).</p> <p>Disclose any confidential data or patient information online.</p> <p>Make disparaging remarks about people you work with or the public you come into contact with at work, even if your privacy settings are closed.</p> <p>Post anything privately that you would not be happy showing to your line manager or saying to your line manager's or colleague's face.</p>

Using social media for practice PPGs

The role of the PPG is changing. With the focus on community-led services, PPGs are becoming a key part of the local community, signposting people to local support services. A practice may only regularly see a third of their registered patients, so if they want to get information to all about services that can help keep them healthy, then having a network linked into local communities is invaluable. But PPGs often find it hard to recruit members and may not be representative of the practice's patient population. So many practices are now using Facebook to recruit new members as well as operating closed private Facebook groups where they can conduct their PPG business in a more accessible way. This approach has opened the door for younger people, especially young parents, to get involved as balancing a young family with attending face-to-face meetings can be a problem.

Practice concern

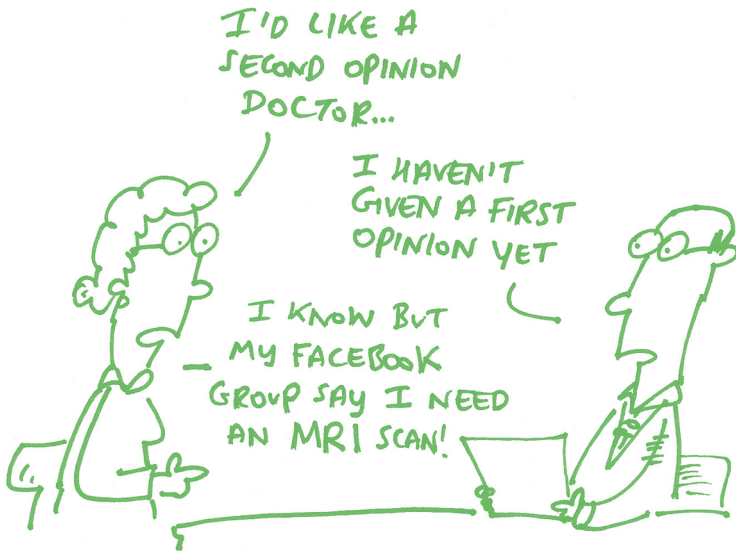
Will social media not open the floodgates for people to criticise our organisation? How will we moderate negative posts? How will I find the time? These types of questions commonly arise during discussions as to whether a practice or other NHS organisation or local authority should embrace social media and regard it as a key channel with which to engage service users. Senior managers may offer a multitude of excuses as to why social

media shouldn't be used – security risk, reputational risk, too time consuming, the domain of the young, etc. But while you should understand the risks, and accept that social media should never replace all other modes of communication, it will be detrimental to any organisation if it simply ignores the advantages of using social media to engage with its users. Take YouTube for example. Many health and social care organisations ban staff from accessing YouTube. However, YouTube can be a powerful tool that disgruntled patients use to get their voices heard.

Whether an organisation wishes to use social media or not, there is always a chance that it will appear there anyway. It may then be on a site over which the organisation has no real control or ability to engage service users. Having your own well-planned, helpful social media profile can counter this by offering both happy or disgruntled patients and service users not only a helpful medium to speak about their experiences but one which affords the NHS or local authority a right of reply. Therefore, listen to patient feedback; monitor online forums and references to your practice, organisation or name; respond appropriately online, respecting patient confidentiality; and seek to have inappropriate comments removed. Don't allow well-meaning but unqualified amateurs to offer health advice to others. In one private group created by patients living in Lancashire, members discussed sharing medication when one person's medication had run out. Box 5.1 shows a snapshot of a question asked by a patient in a popular asthma Facebook group; those using the group must be able to see a disclaimer advising them not to act on non-clinical advice.



Not only might poor advice or bad practice result in increased demand being placed on an already stretched health or social care system, but it can present a risk of malicious interference or use by people wishing to sell unlicensed medical products such as diet pills or herbal remedies. The good side of this is that these patient-led community groups offer a powerful peer-to-peer support network where patients provide real-life commentary on their experiences for the benefit of others.



At the Royal Stoke University Hospital, clinicians have developed closed Facebook patient groups for invited patients with multiple sclerosis, atrial fibrillation or cardiac rehabilitation. Facebook has also been used to advertise new services or consultations, as described in Box 5.2.

Box 5.2: Using social media for service redesign

In Staffordshire, the CCGs and health and care partners have been using a closed Facebook group to engage with new parents about the future shape of maternity services. Invitations to join the group were promoted across all the GP practice public Facebook pages, with adverts targeted to ensure only people who recently used the services joined the group. Within just two weeks 150 patients joined the group and began to interact with health professionals on maternity services. The insight data and comments were then fed into the system-wide redesign process.

One exciting development in the use of Facebook is for closed groups and patients with LTCs. There are numerous condition-specific groups on Facebook which people can join. Some are moderated with an admin role acting as gatekeeper and others have free and open access. These groups are frequently used by patients as peer-to-peer support as well as a source of information about their condition. One difficulty with these groups, however, is that there is often very little clinical input into the content circulated. As a result, there are examples of patients arranging to meet up to share medications when one patient has run out during a Bank Holiday and people circulating dubious and often damaging health-related information.



It is for this reason that in the West Midlands, clinical teams have begun to create their own groups for patients but with the added benefit of them having control over all the clinical information that is discussed in the group. These groups offer a valuable method for patients learning from other people experiencing the same condition, as well as access to information circulated in the groups by clinicians. These groups already cover multiple sclerosis, atrial fibrillation, stroke and cardiac rehabilitation and will shortly be expanded to include Parkinson's disease, pancreatic cancer, asthma and epilepsy.

The important factors in setting up these groups are that the staff need to be trained to manage the groups safely and as simply as possible. There also needs to be clear instructions for patients that no personal information will be discussed or consultations given. It must also be made clear that any inappropriate behaviour will result in the patient being excluded from the group. Once these reassurances are in place the groups are allowed to thrive and they have become a valuable method for patients accessing self-care information at a time that is convenient to them.

Reference

1 www.digitalhealthsot.nhs.uk/index.php/clinicians-learning-centre/resources/documents/toolkits/gp-practice-social-media-toolkit

Chapter 6

Telehealth

What is telehealth?

Telehealth 'directly involves clinicians as an integral part of the service. ... It is used for regular monitoring of vital signs so that unusual activity can be detected before the person's situation becomes critical. Telehealth is an important tool for prevention and anticipatory care.'¹

The term 'e-health' is often used as an umbrella term that includes telehealth, electronic medical records and other components of health IT.

The success of a telehealth application used to reinforce information in a person's management plan is down to the way in which that communication changes the user's understanding, beliefs and behaviour in relation to the management of their health condition or improvement of their lifestyle habits.

Using telehealth for care of long-term conditions

Most clinicians recognise that despite their best efforts, patients are for one reason or another unable to absorb all the information that the nurse or doctor would like to give them in a clinic visit. With a condition like COPD, patients worry about their oxygen level (if they have a pulse oximeter to measure it) or the colour of their sputum or extent of breathlessness, and yet lack the confidence to manage on their own.

Telehealth readings can signal an impending crisis and enable the patient to seek help in advance of the deterioration of their condition; as well as their overseeing clinician(s) responding to relayed alerts. Patients may learn to recognise triggers that tend to derange the measures of their health that they are recording – such as stress triggering a raised blood pressure, or a rushed activity lowering their oxygen saturation level (SATS); then they can learn to avoid creating these triggers. Dual management plans agreed between the patient and their clinician(s) can allow the patient to initiate an intervention as previously agreed with their GP or practice nurse. For example, those with COPD can start taking standby prednisolone and/or antibiotic medication when there is a recognised deterioration in their condition.

Types of telehealth equipment

The type and range of telehealth equipment should match patients' needs and preferences and be justified by the risk of deterioration of their LTC(s); potential for a change in medication to prevent deterioration; and availability of other interventions to reverse that deterioration and maintain them in better health.

Telehealth is delivered in many different ways across the world. Associated home-based sets of equipment typically include one or more of weighing scales, sphygmomanometer, pulse oximeter, glucometer and ways of asking or relaying information about the patient's symptoms and condition, and how they are feeling. More specialist additions are ECG, urine analyser or coagulation meter. In the UK, popular telehealth methods are:

- 1 SMS texting. The Flo simple telehealth approach has been taken up across the UK (and further developed in the USA and Australia) for clinical management, such as for hypertension, asthma, COPD, smoking cessation, cancer, pain, etc., as well as reminders for medication and reviews.²⁻⁵ The clinician signing up the patient seeks their informed consent as well as their pledge to adhere to the agreed dual management plan and look after and return any associated equipment (e.g. pulse oximeter, sphygmomanometer). See www.simple.uk.net
- 2 Some telehealth systems are connected via telephone landline or mobile phone to a non-clinical triage (response) centre which requires specialist installation; others relay recordings via encrypted wireless and patients can take the equipment home or to work or away on holiday. Community matrons, mental health or district nurses may be contracted to respond appropriately to alerts from the triage centre if patients' transmitted readings are outside predetermined ranges; or they may monitor or act on the readings at regular intervals as part of a care package.

Portable and personal ECG monitors have been trialled for the early detection of cardiac ischaemia and arrhythmias generate alarm messages about the patient's heart function to a central web server that transmits messages in turn to the responsible clinician.

Telehealth can be developed for a specific purpose such as the Modz for diabetes self-care. The children's version is designed as a motivational aid to keep blood glucose levels stable – as in Box 6.1.

Box 6.1: mHealth for diabetes self-care

The readings from this touch screen blood glucose meter are sent automatically as text messages to a mobile phone (e.g. parent of a child) and wirelessly to the Modz web cloud service where they can be accessed via the patient's healthcare team via Android and iOS devices. All test results, quantity of insulin or medication taken, meal contents, and exercise done can be logged and stored in the meter. The innovative design for children with diabetes is an 'Angry Birds'-themed game-like monitoring system which motivates the child to achieve improved blood glucose levels through adhering to self-management guidance and plans. See www.good4health.co.uk/index.php/lifewatch-telehealth-monitoring

Widespread rollout of telehealth: Flo simple telehealth as an example

The evolution of the simple telehealth mobile phone texting service Florence (or Flo) has been developed in Stoke-on-Trent and the intellectual property is owned by the NHS. The evolution of Flo has been driven by widescale trials of clinical applications, such as those focused on improving clinical management of hypertension.²⁻⁵

Flo is different to other types of telehealth in many ways because it is simple. Using text messaging, the only equipment required for many uses (e.g. reminders) is an ordinary mobile phone; although for some conditions monitoring equipment such as a sphygmomanometer may also be lent to patients. Flo sends reminder and advice messages to patients, asks the patient questions and, for some conditions, asks the patient to text in

their readings, such as those relating to their blood pressure. All text messages to and from Flo are free for the patient, as the NHS pays the cost. Patients love the support that they get from Flo and become more confident about co-managing their condition and less likely to contact their clinician unnecessarily.

Flo requires commitment from the patient to make some effort to improve their own health, whether by making lifestyle changes or better adhering to treatment, or by regularly sending in texted responses to questions or readings of vital signs. Flo reinforces a dual management plan agreed between the clinician and the patient, but is not a substitute for normal clinical care in any primary, community, acute hospital and mental healthcare setting. Patients gain more understanding of their condition through Flo, are more confident about their condition, do not feel the need to consult their clinicians as frequently, and their condition becomes more stable as they learn to adhere to advice or agreed interventions which previously were quickly forgotten.

Box 6.2 contains more examples of simple telehealth applications with Flo for long-term conditions.

Box 6.2: Nottinghamshire-based Flo simple telehealth case studies

Sian Clark

Hypertension

Fraser is self-employed and was identified as being hypertensive during a health check. He was very anxious about the amount of time he would need to take off work in order to attend GP appointments. Fraser and his GP used Flo to monitor and titrate his medication. Flo was used to get baseline readings before anti-hypertensive medication was prescribed and then to relay blood pressure readings after Fraser began his medication.

Flo also prompted Fraser to book a telephone consultation with his GP to review his blood pressure readings. The GP reviewed the readings on his Flo clinical dashboard prior to the telephone consultation with Fraser and assessed his medication. Flo continued to request readings from Fraser until he was stable and then the frequency of requests was reduced. The titration of Fraser's medication was rapid, due to the availability of blood pressure data for his GP. He had no time off work, which reduced his anxiety, and felt confident in managing his blood pressure depending on his readings, supported by the self-management plan that Fraser and his GP agreed.

COPD: increasing use of rescue medication and averting hospital admissions

Patients using the Flo COPD protocol report that they feel much more in control of their health, are less anxious and know exactly when to take their rescue medication without having to contact their nurse or GP. Clinicians have highlighted that patients on this protocol would previously have been more likely to be admitted to hospital with an exacerbation. Flo is highlighting early exacerbation and enabling early intervention, and therefore keeping these patients out of hospital.

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Chapter 7

Wearable technology

In a never-ending world of constant developments, the range and use of wearable technology for self-monitoring of health is moving fast.

With ever-increasing numbers of people buying wearable technologies in an endeavour for better health, many practitioners in health and social care settings will encounter patients asking questions about their wearable 'tech' or wanting to share the updates being generated. People who purchase wearable tech are usually health conscious and want to understand their body better and take control over their health.

Wearable tech refers to any item of technology that someone can wear. We're focusing here on wearable products that are bought or used with the intention to improve health. Wearable tech has been around for a long time; insulin pumps for example have been used for years. In the past decade, there has been a rapid expansion in the market for wearable tech that specifically targets health-aware consumers. With the promise of improved health outcomes sales have boomed worldwide.

The personal fitness app market has flourished, supported by development of wearable technology such as the Apple Watch and Garmin Vivosmart. However, fitness apps are predicted to reduce in importance and in five years' time will no longer be in the top app category in terms of business potential for developers.¹ The app categories that have the highest expected market potential in the near future are remote monitoring (53%) and consultation apps (38%).

One common product is the Fitbit. A slim, often waterproof, watch-like bracelet that can monitor heart rate, sleep patterns and calories burnt with GPS tracking built in. This item is typically bought by a person (or their loved one!) who likes to stay active; with the aid of a Fitbit they can look at past trends for their biometric measures and current performance, and set targets. This data can motivate or sustain behavioural change. But caution is needed and the relayed information should be interpreted with medical intelligence – see Box 7.1.

Box 7.1

Sheila was on long-term betablockers for atrial fibrillation and she bought a Fitbit as she planned to become more active. She saw that her heart rate was only 60 beats per minute, and tried an increased dose of betablockers as she wanted to be fitter and knew that athletes had lower resting heart rates. By clinically reducing her heart rate she thought that she would become more fit. When she came to the GP surgery to ask for her betablocker drugs to be increased on repeat prescription, her heart rate was only 40 beats per minute. Sheila obviously misunderstood why fit athletes tend to have lower resting heart rates. As a result of receiving her Fitbit readings without expert explanation, Sheila's incorrect actions could have had dire consequences if she'd had a heart attack.

Smartwatches tend to have additional functionality. Popular smartwatches like the Apple Watch and Samsung Gear are widely used. As well as health and fitness uses they contain features such as calendars, messages and email notifications. Most require pairing with a smartphone to be fully functional, which make them a more expensive buy. Data collected is usually fed into a workout app that helps the owner track their data.

In the past, phone manufacturers like Samsung included a heart rate monitor on their mobile devices. Like heart rate monitors in smartwatches and Fitbits they often do not indicate regularity of the heart rate. This may give a falsely reassuring picture when an irregularity of their heart rate is not noted.

Interestingly, wearable tech has made previous science fiction, science reality. Google is developing a smart contact lens that gives a real-time measurement of blood glucose levels from assessing the tear glucose and transmitting this data by an antenna that is thinner than a human hair. This information can be displayed on a smartphone or an external device. In future, this could be directly linked to an NHS database so it can be seen by health professionals. Google is even considering adding a small LED light that can change colour to notify the wearer when glucose levels are abnormal. With the added benefit of abolishing painful finger pricks it will become a much more convenient method for patients to use to control their diabetes, with hopefully better compliance.

Box 7.2: Wearable diagnostic device that can improve management of COPD and avoid deterioration

This wearable diagnostic device for chronically ill patients bridges the gap between personal and professional uses. Using a digital biosensor, the app can record biometric data of people suffering from COPD, then relay that data to their HealthSuite digital platform using the patient's mobile device. This connects to an existing sensor, the HealthPatch, a cloud-based service that allows both patients and doctors access to real-time, round-the-clock health data.

Physical activity and inactivity, respiratory function, heart rhythm and heart rate variability are all monitored. The data is then retrievable via two apps, Philips eCareCompanion and eCareCo-ordinator, making it possible for doctors to monitor patients remotely. The HealthSuite digital platform allows patients and doctors to access more and better data presented in a user-friendly app. See www.usa.philips.com/healthcare-innovation/about-health-suite

A future where multiple devices connect with each other over the web should aid people's healthcare as with the example in Box 7.2. Communication of multiple devices over the Internet is called 'the Internet of things'. For example, an insulin pump could be connected wirelessly to a Google contact lens and release the right levels of insulin without any patient input. The patient would then only have to replace the insulin pump whenever it ran out.

Then there is assistive technology to support the independence of vulnerable people. Clinicians should be aware of the range of wearable tech and how it can be used, as well as its risks and benefits. But we can't learn how to operate every piece of kit and advise patients how to act upon relayed information like an instruction manual. Some tech devices skew data and may capture bodily measurements differently from each other and are not necessarily reliable. Other unforeseen consequences are when such self-monitoring devices induce competitive urges which are not healthy – such as losing too much weight or undue lowering of the heart rate as in the example in Box 7.1.

Traditionally, weighing scales have always given us the weight of an object. Now some can give us the BMI, heart rate and body fat percentage. Although they may have large margins of error they can be useful if an individual would like to record progress in their exercise plan. They tend to be relatively affordable with prices starting around £100 and can be a good incentive for people to start taking control over their weight.

The use of wearable technology can be a massive aid to health professionals. In the same way that computers have revolutionised many aspects of healthcare, wearable tech will revolutionise the way we interact with and monitor patients in the future. It is an exciting time to be alive and witness the rapid advances in this field. We must, however, be aware of the limitations of every technology and not become over-reliant on it. There are more examples of pertinent wearables at www.wearable-technologies.com/2015/04/wearables-in-healthcare/

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Chapter 8

Patient Online

What is Patient Online?

Patient Online enables practices and patients to communicate by the Internet, providing several significant services as remotely available options. Once someone has registered, Patient Online is accessible by smartphone, tablet and laptop from anywhere with an Internet connection, via apps or desktop websites. As not everyone wants to use or has access to the Internet, Patient Online services are provided as an alternative to, and not as a replacement for, traditional phone-in or face-to-face services.

You may come across the term 'GP online services' to describe Patient Online in some national communications which can cause confusion. This different descriptor is used because a large public survey revealed that people don't consider themselves patients unless they are being actively managed by secondary care.¹



What is it for?

Broadly speaking, Patient Online is about bringing the NHS into the 21st century and offering routine services in a digital format that people have come to expect in society. Primarily, Patient Online provides the use of three main services traditionally restricted in general practice to face-to-face or telephone interactions. These comprise: the booking or cancelling of appointments with GPs; re-ordering repeat prescriptions; and viewing a person's own medical records including test results.

Patient Online enables people to access relevant personal medical information, such as health conditions, allergies and medications, and supports them to better understand and have easier reference to their personal medical details. Additionally, access to this online

service can make consultations more effective because it offers patients the chance to come along better prepared.² By doing so, patients can become more active partners with clinicians, taking more responsibility for managing their health conditions and adverse lifestyle habits.

The provision of Patient Online services is in line with the shift towards person-centred care and empowering patients to take more control of their healthcare. Increasingly, primary care is becoming focused on managing patients with chronic health conditions, putting greater strain on already busy GP practices. As of 2012, patients with long-term conditions made up 50% of all GP appointments.³ One of the strategies employed by the NHS aimed at relieving some of the pressure on primary care is making services available online. Many people struggle to manage their health condition(s), especially if they have one or more co-morbidities. Increased access relieves some pressure on patients by giving them a resource to refer back to, helping to make self-care or shared management easier.

How can you as a clinician encourage someone to sign-up?

- If a patient is suitable, discuss the option of signing-up to Patient Online with them during or after their consultation. Explain the features that would be of most benefit to them, given their health status and enthusiasm.
- Help the patient register for transactional services (repeat prescriptions and booking appointments) with support from an administrator in your practice team if needed and assess the patient's suitability for accessing their records and test results, especially if they have a long-term condition. For example, when arranging a blood test encourage the patient to sign-up so that they can see their results remotely.

You can become better informed about how to promote Patient Online and the ways it can benefit practice teams and patients at: www.england.nhs.uk/patient-online/support/patient-material/

Why should you encourage your patients to sign-up?

Well, access to Patient Online services should result in:

- improved patient satisfaction – a key component of adherence to medication or other interventions⁴
- improved patient safety – better access to lists of their medication and instructions from their care team⁴
- increased convenience for patients – they can access transactional services out-of-hours and when it suits them
- patients who are better informed – improving their ability to self-manage and have more effective consultations with practitioners.

Myths/challenges

'Patient Online will create more work for me and my practice.' In a recent systematic review,⁴ practitioners' fears about increased workload due to providing online access were found to be 'largely unwarranted' as administrative and routine tasks lend themselves to being done efficiently online, and it reduced lengthy consultations where patients had requested to

see their medical records in person.

'Most of my patients are too old to use online services.' Whilst some patients lack the capacity to perform online transactions, they are in the minority. As of 2017, 78% of over 65-year-olds use the Internet, paying their bills and shopping online, so why should accessing their healthcare be different?⁵ For those with difficulty using the Internet, it may be appropriate for them to use Patient Online with guidance and support from a carer/family member. Regardless, it is important that we continue to offer online services to all patients and are willing to advise on its use and benefits.

Case study

Ingrid is a 70-year-old patient with a long-term condition and she discusses how having access to Patient Online has improved her self-management of her condition. The main benefits she describes are: being able to go back over information given by her practitioners in the consultation; being able to access her information independently of her practice wherever she is by using her mobile phone; and being able to have more intelligent consultations with her healthcare team. In her own words, Patient Online has enabled her to become a 'partner' with her doctors and nurses.

Watch Ingrid's story here: www.nhs.uk/video/Pages/patient-online-24-7-access.aspx

Patient Online platforms

Currently, there are four main software providers for general practice facilitated by Clinical Commissioning Groups, each with associated apps, websites and services enabling the use of Patient Online. Additionally, there are subsidiary providers coming online that are free to use that may be more tailored to suit some individuals. It is worthwhile becoming familiar with the ones that are supported by your practice and others that your patients may prefer to use. Some of the different platforms can be explored here:

www.nhs.uk/nhsengland/aboutnhservices/doctors/pages/gp-online-services.aspx

By having a range of alternatives to refer to, you are better able to recommend an app or website that is suited to certain patients, depending on which features they would find useful. For example, patients who already use wearable fitness devices might be attracted by apps that provide tracking and sharing of blood pressure, heart rate and body fat percentage, etc., alongside access to Patient Online services. Features like these will not only encourage and promote shared health management by your patients, but also help health professionals to see the bigger picture of their patients' lives.

Dos and don'ts

Do:

- Explain the benefits of transactional services offered by Patient Online.
- Explain the benefits of having access to test results and medical records.
- Promote Patient Online to older as well as younger patients, especially those with long-term conditions.

- Ask your practice receptionist to mention Patient Online to patients as they come in and recommend that they sign up.

Don't:

- Assume that people over a certain age will not be interested without asking them first.
- Think that it's not your job to encourage uptake of Patient Online. It works in everyone's interest.
- Assume that people will sign-up and access Patient Online of their own accord.
- Believe the myth that Patient Online creates more work for practices, without looking at the evidence.



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Chapter 9

Assistive technology

Assistive technology (AT) includes any item, piece of equipment, product or system, whether acquired commercially, off the shelf, modified or customised, that is used to increase, maintain or improve the functional capabilities of individuals with cognitive, physical or communication disabilities.¹

Telecare or AT maintains or improves the well-being and independence of people with cognitive, physical or communication difficulties. This might include jar openers, bath seats or stairlifts, and electronic sensors and aids that make a home environment safer or which may link to a triage system where alerts can be relayed to social or healthcare teams.^{2,3,4} When a telephone network is included, the AT might be termed 'telecare', when the monitoring of care relates to personal safety, security and home environmental risks via communication over a distance by telephone (mobile phone or landline). A non-clinical triage centre can monitor users' responses in real-time and trigger direct help if agreed thresholds are breached. In other systems, the monitoring might be automated and overseen intermittently. Telecare also includes the use of electronic sensors and aids to make the home environment safer so that people are more secure and are able to live independently. For example, someone can wear an emergency cord around their neck that can be pulled when they require help which activates a camera in their house to locate the person and transmit their situation via video to a carer or family member so that they can view what's going on. Another descriptor is provided in Box 8.1.

Box 9.1: Activity monitoring to keep someone safe

Linda lived alone. Her neighbours reported hearing her leave her house late at night, looking for her daughter. Her daughter lived locally and visited her mother every morning before work. Frequently, she found her mother sitting in the lounge in her nightwear when she arrived. An activity monitoring system was installed with Linda's agreement. It showed Linda going to bed at a regular time but sometimes when she woke to use the bathroom she would not return to bed but leave the house and return 30 minutes later to sit in the lounge until morning came.

She already had a community alarm; therefore, a bed exit sensor and lighting system were installed. In addition, a linked door exit alert and a standalone memo minder were placed in the hall near to the front door. Immediately, the bed exit sensor and lighting system demonstrated its effectiveness in guiding Linda to and from bed; but occasionally Linda would approach the front door.

Her daughter had recorded a simple reassuring voice message which said, 'Mum, go back to bed; I will see you in the morning.' This played back to Linda as she got close to the door and the system showed her returning to bed. In the event of her staying out of bed for longer than 10 minutes or exiting the house, the call centre would be alerted and could respond with a voice prompt via the base unit.

Maximising the benefits for as many stakeholders as possible

The benefits of full implementation of AT are represented by the acronym H-E-L-P-S M-E, as shown in Table 9.1.

Table 9.1: H-E-L-P-S M-E⁵

Health and well-being	<ul style="list-style-type: none"> • Better proactive management of mental health – early intervention before escalation. • Better medicines optimisation. • Improved outcomes in reduction of falls. • Increased social inclusion and reduced isolation. • Support for people with mental or learning impairment, cognitive function, e.g. memory problems, budgeting. • Enabling people to access other opportunities in areas they value and to be more independent.
Effectiveness (quality of service, process improvement, HR)	<ul style="list-style-type: none"> • Improved perception of services through what are seen as additional elements (rather than reductions) by service users, families, carers and care management. • Career development path for professionals ranging from National Vocational Qualification (NVQ) to postgraduate levels of study, on-the-job stimulation and challenge, and opportunities to improve outcomes for people. • Better support for carers so that they can continue to provide care for longer.
Legal (policy, regulatory)	<ul style="list-style-type: none"> • Better compliance with well-being, prevention and assessment components of the Care Act.¹ • Meet specific requirements as outlined in supporting regulatory information. • Use of technology can be fun.
Pleasure (increasing fun, employment, education, training)	<ul style="list-style-type: none"> • AT can increase opportunities to work, take up education and train, through increased independence or by supporting outcomes in both functional and instrumental activities of daily living.
Safeguarding (security, health, safety)	<ul style="list-style-type: none"> • Improving people's security, e.g. through safer walking with GPS devices, better compliance with medication, or safer moving and transfers. • Better visibility in people's patterns of daily living to ensure that vulnerable people are sleeping and eating; providing solutions where routines fall outside of safe and normal patterns.
Management (flexibility, decision-making, management processes, strategic fit)	<ul style="list-style-type: none"> • More flexible responses to rising need where provision of technology reduces a person's dependence on resources or others' face-to-face support for which it can be hard to recruit and retain staff. • AT lifestyle monitoring systems aid safer, more accurate, and usually more cost-effective outcomes to assessments.
Economic (efficiency, income)	<ul style="list-style-type: none"> • Increased efficiencies through use of AT, so preventing, delaying and reducing unnecessary home care spend, enhancing supported living and residential care placements. • Increased competitiveness as a provider, where a provider markets its offer on the basis of greater use of AT. • Income through commercial offers generated.

Lack of uptake

Reasons for the lack of uptake of AT include:⁶

- 1 Lack of awareness of what telecare and telehealth equipment is available and how it might be used.
- 2 Difficulties in discussing AT with potential service users and their families.
- 3 Lack of integration into processes as part of initial assessments and ongoing reassessments or reviews.

Telecare uptake remains very low. Traditional telecare (the most basic level of a pendant or pull cord system with a community alarm) is taken up by less than 3% of the population of people over the age of 65 years, who could otherwise benefit from AT. Nationally, community equipment in general is supporting just 40% of the population who could benefit.⁷ Not using some of this equipment means that, for some, carers' lives are more difficult, and service users are missing out on opportunities for an enhanced quality of life, and both service users and caregivers are at risk of an injury or further decline in their independence or well-being that might have otherwise been avoided.

We therefore need more personalised care solutions for TEC for individuals that take account of a person's physical and cognitive abilities and their personal or sociocultural situation. A person's care should be supported by technology and health and social care teams, rather than dominated by a technological package.

MY CONSULTANT, GP,
NURSE AND SOCIAL
WORKER ALL USE
TECHNOLOGY TO HELP
ME MANAGE BETTER -
BUT I WONDER IF
THEY TALK TO
EACH OTHER?



Who can benefit from Assistive Technology?⁷

Barnsley Assistive Living Technology Service (led by Jayne Birch-Jones) has described very well who they expect to benefit from the assistive technology support they offer the local population:

- **Patients recently discharged from hospital**
To integrate with existing services (reablement and intermediate care) to avoid the need for rehospitalisation.
- **Older people living alone**
Risk management in their own homes, increased confidence relating to accidents and security.
- **People with a dementia**
Reminders and sensors to detect dangerous situations.
- **People with learning disability**
Opportunity to maximise independence through electronic aids and emergency detection.
- **People with physical disabilities**
Remote control devices with risk management to provide easier access to emergency services in the event of accident.
- **People with increased frailty**
Safety net of support and long-term monitoring of the progression of their condition.
- **Chronic disease or LTC sufferers**
Supported self-care and expert patient programmes with easy access to 24-hour support services to avoid unscheduled use of hospital services.
- **People with mental health problems**
Rapid support at times of crisis and help to achieve compliance with medication therapies.
- **People with sensory impairments**
Sensors to help compensate for reduced senses and management of risk through improved user interfaces.
- **Tenants in sheltered housing schemes**
Extends existing community alarms to include a range of automatic environmental sensors.
- **Extracare housing tenants**
Supports independence by managing risks without the need for 24-hour care services.
- **Hostel dwellers with history of substance abuse**
Lifestyle monitoring to support rehabilitation programmes and protection from hostile parts of society.
- **People with complex support needs**
Assessment of lifestyle and problems through activity monitoring.

- **Informal carers of any of the above groups**
Continuous emergency monitoring to provide respite.
- **People at risk of domestic violence**
Silent and rapid access to emergency services.
- **People at risk of abuse from bogus callers**
Increases confidence by providing continuous access to support and emergency services.

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Other resources to view

- GPS shoes: www.youtube.com/watch?v=Feutw61nhPA
- *Alive Inside*: www.aliveinside.us/
- Hft Virtual Smart House: www.hftsmarthouse.org.uk/
- AT Dementia site: www.atdementia.org.uk/
- Web-based assessment for falls: <https://cele.coventry.ac.uk/fallcheck/?page=about>
- www.dlf.org.uk/factsheets/telecare
- <http://asksara.dlf.org.uk/> run by the Disabled Living Foundation
- www.livingmadeeasy.org.uk/
- www.hft.org.uk/Supporting-people/Our-services/Personalised-Technology/

Appendix 1

Technology Enabled Care Services Code of Practice¹

All NHS and social care organisations must endorse and adhere to national requirements relating to IT security, clinical safety, data quality, the use of patient data, data protection and privacy, information standards and other recommended good practice. These include:

- 1 Information governance – defining standards, engaging staff, building professional capability.²⁻⁸
- 2 Clinical governance.^{9,10}
- 3 Legal and regulatory obligations and compliance with standards, i.e. Privacy Impact Assessment and Standard Operating Procedure (e.g. for video-consultation).^{11,12}
- 4 Procurement of technology, equipment for TECS such as medical devices and third-party contracts relating to delivery.¹³
- 5 Health and safety.^{14,15}
- 6 Quality management.¹⁶
- 7 Care Quality Commission – information security and governance.¹⁷
- 8 NHSE requirements and priorities.^{18,19}
- 9 Identification of patient by NHS number.²⁰
- 10 Upskilling staff (clinicians, managers, administrators) to raise competence and confidence in TECS within own organisation and networking with others in connected ways; and oversight of staff, professional and manual competence in line with agreed responsibilities.¹³
- 11 Shared care management between clinicians and selected/signed-up patients and citizens with synchrony between all organisations in the health economy for shared care management plans over all relevant care pathways, and delegated authority and responsibilities at organisational and individual patient levels. Valid, trustworthy, relevant and up-to-date data must be available when and where needed, accessible swiftly and securely for staff as well as within and between organisations.¹⁶
- 12 Patient consent/opt out if or when it is proposed that patients' personal confidential data is being used for purposes beyond their direct care (unless there is a mandatory legal requirement or an overriding public interest).^{4,16}
- 13 Patient safety, reinforcing adherence to pre-agreed interventions between clinician and patient with underpinning delivery protocols focused on specific selection criteria for involving patient groups, that avoid unintended consequences of TECS that might otherwise have put patients at risk.^{21,22}
- 14 Medical and other clinical or social care provider indemnity, for clinicians/social care workers delivering care via TECS instead of alternative modes of care delivery.²³

- 15 Security of transmission of care via TECS (e.g. Skype), underpinned by protocol describing patient selection criteria, setting, patient consent, etc.
- 16 Measuring and demonstrating impact; collating evidence of positive outcomes (e.g. improved clinical outcomes, avoided healthcare usage such as hospital admissions, enhanced patient convenience, improved patient satisfaction, enhanced safety for vulnerable patients, increased independence of patients or citizens) and unintended consequences (safety risks, extra costs from, for example, more workforce input).
- 17 Contract management of performance.
- 18 Monitoring and alerts.
- 19 Reliable infrastructure for everyday relaying of TECS and associated equipment needed, such as for bodily measurement by patients.
- 20 Involving patients, citizens and carers in the type and remit of TECS that is commissioned or provided by the organisation.
- 21 Improve and sustain cyber security.⁴
- 22 Security standards for NHS mail in line with ISB 1596.²⁵
- 23 Sustainability and Transformation Partnership (STP) priorities and co-ordinated delivery of care.

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Appendix 2

Example practice protocol for video-consultation with patients in their own home or a nursing/care home

Clinicians in any health or social care setting can adapt this example protocol to individualise it to their care setting, specialty, experience, availability of equipment and infrastructure, and purpose.

Stage 1: Practice organisation and set up

The practice manager or clinician affirms that the medical defence organisation covers this activity.

It is the responsibility of the individual clinician to decide on the suitability of using Skype or video technology (as opposed to face-to-face consultation in the surgery or patient's [care] home setting, or telephone or email consultation) per presenting complaint for each patient.

- **Nursing or care home:** The XX organisation will set up the video-consultation equipment in each nursing or care home that has agreed to participate.
- **Individual independent patients:** IT should be set up in one consulting room in the practice that is designated for Skype or video-consultations (the practice manager confirms which room), utilising a spare screen monitor if one is available or a webcam. If necessary, your IT service provider should lift the firewall from practice computers once the Privacy Impact Assessment/Standard Operating Procedure documents are endorsed by the CCG's Caldicott Guardian.
- **Skype security:** The practice needs to avoid people being able to search randomly for doctors or practice nurses as individuals without a clinician's invitation to a booked consultation. Go to 'tools', 'options' and then 'privacy'. This will also help the practice avoid falling prey to a phenomenon called 'vishing' (short for 'video phishing'). You can also block specific users in the 'options' menu.
- **Training:** The video pilot lead supported by XX will upskill the practice team including clinicians who will use the video-consultation technology. Training will include set up, selection criteria, informed consent, etc., with the appropriate paperwork.
- **Evaluation:** Each clinician will capture information about the patient's video-consultation using the data collection form for the first XX patients.

Stage 2: Prior to video-consultation

2.1 Patients might measure biometrics

Prior to the video-consultation or during it and by arrangement, e.g. blood pressure, temperature, weight, oxygen saturation, pulse rate, blood glucose, sputum colour, peak flow. The clinician should ensure that any equipment used is valid and reliable, and that the patient has been trained to take that measurement in a reliable way (e.g. sphygmomanometer, peak flow meter).

2.2 Inclusion and exclusion criteria proposed for patients who might consult remotely via video link between the practice and nursing/care homes

The practice team will trial these potential criteria for selecting patients to conduct remote consultations. After three months, the selection criteria will be modified to take into account clinicians' experiences. It is the responsibility of each clinician to select patients for video-consultation depending on their symptoms, signs, cognition, support, confidence and preferences.

GP or practice nurse with an independent patient in their own home or the patient's chosen private setting

Inclusion criteria:

- Children aged between 13 and 15 years with parental consent.
- 16 years of age and above.
- Routine review by the practice nurse or GP of any chronic condition, including:
 - asthma
 - diabetes (including follow-up for insulin initiation)
 - depression (mild/moderate)
 - anxiety (mild/moderate)
 - smoking cessation (follow-up)
 - hypertension review (with home blood pressure monitoring readings)
 - COPD review
 - epilepsy review
 - weight management.
- Medication review.
- Low-risk patients requesting a consultation for any symptom (see following Stage 3).

Exclusion criteria:

- Children aged 12 years and under.
- Acute deterioration of the above chronic conditions.
- Any condition requiring face-to-face clinical assessment or clinical examination.
- Intermediate- to high-risk patients for specific symptoms (see following table of risk).

GP or practice nurse with resident registered patients in nursing/care homes

Inclusion criteria:

- 16 years of age and above.
- Any chronic health condition for routine review, including:
 - asthma
 - diabetes
 - depression (mild/moderate)
 - anxiety (mild/moderate)
 - smoking cessation (follow-up)
 - dementia (mild/moderate)
 - hypertension review (with home blood pressure monitoring readings)
 - COPD review
 - epilepsy review
 - lifestyle habit review.
- Medication review.
- Intermediate- or high-risk patients judged to be reasonably well and alert, requiring a consultation for any symptom that care home staff can assess and convey basic vital signs reliably, e.g. heart rate, temperature, oxygen saturation levels, blood pressure readings (see Stage 3 for further details).
- Review of rashes.
- Urinary infection which has already been proven by urine dipstick.

Exclusion criteria:

- Low- or intermediate-risk patients who care home staff feel are distinctly unwell (and, for instance, will need clinical assessment of heart and lungs).
- High-risk patients where it is not possible to monitor vital signs.

Distinguishing between high- and low-risk patients:

- The risk is based on the potential significance of the presenting complaint given their past medical history or care home staffs’ description of the patient’s symptoms.

Low risk	Intermediate risk	High risk
<ul style="list-style-type: none"> • 0–2 co-morbidities. • Co-morbidities that are present must be of low significance in terms of patient longevity, e.g. osteoarthritis (OA). 	<ul style="list-style-type: none"> • ≥3 co-morbidities of any significance. • Co-morbidities present must not be directly related to presenting complaint. 	<ul style="list-style-type: none"> • ≥3 co-morbidities of any significance. • Co-morbidities that could be related to presenting complaint. • Current or previous diagnosis of cancer. • Age >90 years. • Poor mobility. • Dementia.

Stage 3: Conducting the video-consultation

2.3 Patient who lives in own home

The GP or practice nurse explains to the patient how the remote consultation will take place and gives them a copy of the information leaflet (see Section 2.5). If they want to proceed to plan a future video-consultation, the GP or practice nurse obtains written, informed consent at a preceding face-to-face meeting (see Section 2.6).

Once the patient has provided informed consent they will need to give the clinician or practice staff their Skype ID details so they can be added to the list of Skype contacts that the practice holds. To do this they search for the patient’s name in the Skype search bar and send them a request to be added to the list of practice contacts. Add individual patient’s details rather than wait for them to accept the request, to ensure they are the correct person. Advise the patient that they should set up Skype at their end in a private area to ensure that only people they are happy to overhear or view their consultation are nearby.

Ask the patient to book a video-consultation with a specific clinician in the reserved appointment slots or book them in yourself. To make a Skype call ensure that you’ve got a webcam plugged in; then click the green video call button to start a Skype video call.

Useful things you can do on a video-consultation:

- Resize the screen – click and drag the corner of the video screen to make it bigger or smaller.
- Move it around – click and drag the video of yourself around your screen.

- Instant message (IM) at the same time – click the 'show messages' link at the top of the video to IM while you're on the call. If you are having any problems with Skype, visit <https://support.Skype.com/> where you can access more tips and ask questions.

If there is no Skype connection with the patient or they do not answer when the clinician initiates the Skype connection, the clinician will leave a message (press the '+' symbol and click on 'video message').

The clinician should be clear from the start that they are allocating a fixed amount of time and that they will contact the patient, not the other way around, at a booked time. This will ensure that there is no expectation on the patient's part that they can use Skype for other issues. If a patient does contact the practice by Skype, simply decline the call.

2.4 Video-consultation between GP or practice nurse and staff or patients in a care/nursing home

The guidance is similar to that described in Section 2.3. The practice clinician or nursing/care home staff can gain written informed consent from individual patients (so long as they can understand the process). If the patient is unable to understand the request for informed consent, the care home staff can do so on their behalf (in a similar way to care home staff deciding when a patient requires a home visit from a GP).

The consulting area for video-consultation in the nursing or care home should be private, e.g. the patient's bedroom. The room should be well lit to ensure the patient's image is clear.

If the video session is already connected and paused from a previous patient, a care home staff member will recommence the call and clarify that the next patient's privacy is assured (i.e. the previous patient has left the room). The care home staff will end the video-consultation session once all patients have been seen and discussions between the GP or practice nurse and care home staff have been completed.

Stage 4: During the video-consultation

Throughout the entirety of the video-consultation you will provide usual best practice clinical management, careful active listening, frequent checking for understanding and an interested response.

If during the video-consultation it transpires that a face-to-face consultation should take place, this should be arranged in an appropriate timeframe. The clinician should write up notes of the consultation in the usual way in the patient's medical records. They should not make a video recording of the consultation, unless they're prepared to gain further specific informed patient consent and adhere to the detailed national information guidance and confidentiality requirements.

Remote consultation checklist for clinician or practice team

	Practice staff* or clinician** action
1 The patient*** has received an explanation of the use of Skype/video for a remote consultation with the clinician.	Practice staff – any
2 A copy of the remote consultation patient information leaflet has been given and explained to the patient.	Practice staff – any
3 Any concerns about remote consultation have been addressed.	Clinician
4 The remote consultation patient consent form has been given and explained to the patient.	Clinician
5 The remote consultation consent form has been signed by the patient or their representative.	Clinician
6 The clinician has prepared his/her consulting room to maximise privacy.	Clinician
7 The patient is undertaking the consultation from their home or chosen private setting (or care home) at a pre-agreed time that is booked into the specific clinician's appointment list.	Patient*** (and care home staff)
8 The Skype call is instigated by the clinician at a date/time which has been agreed with the patient (or care home staff). The clinician logs onto the Skype system and searches for the patient's Skype ID and then clicks the video call button.	Practice staff – any
9 On answering the Skype call, the patient should acknowledge whether or not it is appropriate to undertake the consultation.	Patient
10 The clinician will introduce themselves to the patient and: <ul style="list-style-type: none"> • confirm that the patient is happy to take part in the remote consultation, making it clear that if a physical examination is required, the clinician will arrange a face-to-face consultation in the practice or care home • the patient's identity should be checked by asking them to confirm their name and date of birth. 	Clinician
11 Prior to concluding the consultation, the clinician will clarify that the patient understands the outcome of the consultation and has no further questions.	Clinician
12 The clinician will record the bodily measurements provided by the patient together with the observations and outcomes of the consultation in the same way as a face-to-face consultation is recorded in the patient's electronic primary care record. Any agreed actions are carried out.	Clinician
<p>*Practice staff is any member of the practice team including administrator, receptionist, manager or clinician by arrangement; **Clinician is the GP or practice nurse initiating and conducting the Skype/video-consultation; *** The term 'patient' used here means patient participating in Skype/video-consultation or their carer/family.</p>	

2.5 Patient information sheet

Why are video-consultations being introduced?

To provide you with more regular access to your GP or practice nurse so that you can talk about any non-urgent health concerns or questions.

What is a video-consultation?

It is a conversation that happens between you and your GP or nurse – you can see and hear each other without being in the same room or building. It uses video technology to allow you to see and hear each other. Lots of people use it all over the world to talk to family and friends who do not live near each other.

What is Skype?

Skype is the programme that allows you and your GP or nurse to be able to hear and see each other. It works over the Internet.

Is Skype safe and secure?

As with all information transmitted across the Internet, the security of Skype isn't 100%, but it is more secure than sending an email or posting a letter, so we believe the benefits outweigh the risks.

What happens if I don't want to talk to my GP or nurse in this way?

If you do not like this method of communication it can be stopped at any time. It is your choice whether or not to use it and we will answer any questions you may have before it is used and ask you for your written consent.

How will I be prepared for my video-consultation?

We will arrange to contact you at your Skype address at a set time which will have been arranged between you and the practice staff. When the GP or nurse starts the consultation with you, he/she will introduce themselves, check that you are happy to proceed and check your name and date of birth. At the end of the consultation they will check that you have understood the conversation and ask if you have any questions. After the video-consultation has finished, the GP or nurse will write or type the outcome of the consultation in your medical record as usual.

What are the benefits of video-consultations?

- They provide convenient and increased accessibility to your clinician (e.g. GP or practice nurse).
- They enable you to discuss any health concerns or worries you might have.
- They give your clinician an opportunity to treat any health issues in a timely manner.
- They reduce avoidable visits to the surgery or A&E.

What are the potential risks of video-consultations?

There are potential risks but these are very small and the benefits of using video-consultation have been assessed as outweighing the risks. These risks include, but may not be limited to:

- information transmitted may not be sufficient (e.g. poor quality of video) to allow for an appropriate medical decision to be made by the clinician. If so, a face-to-face visit with the clinician will be arranged
- although highly unlikely, security can fail, causing a breach of privacy of confidential medical information.

2.6 Patient informed consent for video-consultation

Practice

Patients under the care of XX practice can access a clinician via a video-consultation. The remote consultation will provide you with the opportunity to speak to, and see, your clinician; have your health needs assessed on a remote basis; and discuss any existing health issues and other matters. The video-consultation is set up to meet national recommended standards to ensure data privacy for you as an individual patient.

My rights

- I understand that the NHS privacy and confidentiality policies and procedures relating to my medical information also apply to video-consultations.
- I understand that the video technology used by the clinician is encrypted to prevent unauthorised and unlawful access to my personal confidential data.
- I have the right to withdraw my consent to the use of video at any time.
- I understand that the clinician has the right to withdraw his or her consent for the use of video-consultation at any time.
- I understand that the remote consultation will not be recorded.
- I understand that the clinician will not allow any other individual who is not directly involved in my care to listen to, or watch, my video session.

Patient consent to the use of video-consultation

- I have read and understand the patient information provided regarding video. I have had the opportunity to discuss this information and all my questions have been answered to my satisfaction.
- I hereby give my explicit consent for the use of video in my medical care and authorise the clinician to use video to undertake remote consultations.

Patient name:
Date of birth:
Address:
Patient's Skype identity details:
Signature:
Date:

In the case of the patient not being able to give consent, the patient's name and address should be completed above, in addition to the section below:

Name of patient's representative (e.g. carer/family, care home staff member):
Capacity of representation (e.g. lasting power of attorney for their health and welfare; parent of a child under 16 years of age; responsible care home staff member):
Representative's address:
Home's Skype identity details:
Representative's signature:
Date:

Appendix 3

Teleconsultation: NHS and social care organisational guidance – example from Nottinghamshire, Nottingham City Health and Care Services

Jayne Birch-Jones

Teleconsultation guidance: best practice and checklist	
Date of Issue: XXX	Guide No.: YYY
Approved by: Records and Information Group [RIG]	Approved date: TBC
Replaces/Supersedes Guide No.: None	Distribution:
Scope: All who wish to use video-conference technologies to carry out patient or citizen remote consultations.	

1 Information Governance:

- a Any deployment of a new way of working or change in process which involves the processing of personal and sensitive data must be approved by your organisation's Information Governance manager.
- b A Privacy Impact Assessment must be carried out as part of the implementation of this way of working for every service.
- c The patient or citizen should receive appropriate information relating to the consultation and associated risks to allow them to make an informed decision on consent to use the technology for this purpose (stakeholder engagement).
- d Any information should be in a suitable format for the specific group of patients or citizens, e.g. large print might be considered for some groups of patients in nursing home care. Reference can be made to NHS England's accessible information standard.
- e In making a decision in relation to consent there should be a consideration of patient or citizen capacity in line with professional assessment standards, organisational policies on consent and assessing capacity and the Mental Capacity Act 2005 requirements.
- f When organising the consultation, consideration must be given to the environment in which it takes place. This should be secure, confidential and accommodate any special requirements the patient or citizen or care professional might have, such as good lighting, appropriate space and comfort in the surroundings. You should also ensure that you maintain the patient's or citizen's privacy and dignity at all times.
- g The appropriateness of all consultations should be risk assessed in line with recommendations for current practice in carrying out telephone consultations.
- h As part of the agreement with the patient or citizen they must be made aware of potential risks relating to the consultation, e.g. any technical considerations when using public networks or non-corporate use of equipment at the patient or citizen end.
- i It should be noted that the relevant Information Governance Toolkit requirements and standards apply similarly to use of any other equipment and should be adhered to.

2 Information Security:

- a Prior to any live service commencement (and as part of the Privacy Impact Assessment process) there must be Caldicott Guardian and Senior Information Risk Owner sign-off (or equivalent organisation governance for approval).
- b Recording of consultations is generally not advised. If recording is requested by the patient it is essential that additional advice is sought on the management and storage of the recorded files. The patient would be obliged to agree that recordings at the patient end should only be for personal or domestic use and further distribution could infringe the privacy rights of staff members without their consent.
- c As part of the service deployment, all IT equipment used should be considered for suitability, including appropriate endpoint security and protection. All IT equipment

used should be organisation owned, have appropriate encryption and virus software installed and included on the asset register. Use of personal equipment is prohibited.

d When selecting a video-conference tool or solution the following requirements must be appropriately met:

- i No residual data must be left on IT equipment.
- ii Encryption standards must conform to NHS Digital requirement which is currently 256 AES. (see: <https://digital.nhs.uk/cyber-security/policy-and-good-practice-in-health-care/encryption/good-practice-guide>)
- iii An independent security software assessment should be in place for any video-conference software used that validates it meets the organisation's system level security policy, has appropriate encryption, appropriate key management, identity management and appropriate technology to prevent 'man in the middle' attacks.
- iv Where consultations are intra-organisation, there should be internal administrative functions to support strong management of user policy.
- v Where consultations are extra-organisation, steps should be taken to ensure user policy is applied wherever possible.
- vi part from consultations that take place with the patient or citizen directly in their own environment, all kit should be corporately owned, managed or configured.
- vii It is advised that the organisation's annual risk assessments should include use of new and evolving technologies such as teleconsultations; this could include penetration testing.

e It should be noted that the relevant Information Governance Toolkit requirements, particularly in the 300 series, apply and should be adhered to.

3 Custom and Practice (Standard Operating Procedures):

- a When deploying video-conferencing technology to support consultations, a Standard Operating Procedure should be developed to ensure that users are clear on the process and appropriate assessment stages. Staff should be provided with the appropriate equipment training, where necessary, and in all circumstances ensure that they complete and remain in date with Information Governance training at all times.
- b Staff must ensure that they are aware of and comply with organisational Information Governance and Information Security policies.

In line with professional body recommendations, records management processes must be in place to ensure contemporaneous and contiguous records are kept. Advice on this aspect is available from the relevant professional bodies. It is advisable for the organisation to amend its Records Management policy to reflect this change in the way of working.

Review date: XXX	File location:
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