The use of telemedicine to enhance secondary care: some lessons from the front line

Authors: Olwen E Williams,[A] Salah Elghenzai,[B] Chris Subbe,[C] Jeremy C Wyatt[D] and John Williams[E]

ABSTRACT

Digital technologies such as telemedicine have the potential to transform healthcare, but uptake has only recently gained momentum secondary to national policy drivers. This paper reviews the potential benefits of telemedicine in secondary care and explores the use of video conferencing to support the hospital follow-up of older people with chronic disease, identifying a wide variety of issues that need to be addressed for successful implementation. We believe these issues will interest secondary care colleagues considering the use of telemedicine to support or substitute for some outpatient activities.

KEYWORDS: Effectiveness, healthcare, older people, patient satisfaction, telemedicine, video teleconsultation

Introduction

The adoption and normalisation of telemedicine has been slow in healthcare in the UK because of political, organisational and 'ownership' issues,[1] but recent national digital strategies[2–5] addressed this, providing the clinician with a roadmap for delivering digital services. This paper is intended for secondary care clinicians interested in establishing a telemedicine service. It explores the current evidence for barriers and benefits before concluding with a case study summarising the experience of the first author and co-workers in setting up and running a video teleconsultation service for older people living in a remote, rural area.[6]

Authors: [A]consultant physician genitourinary medicine, Wrexham Maelor Hospital, Betsi Cadwaladr University Health Board, North Wales, UK; [B]consultant physician care of the elderly, Ysbyty Gwynedd, Betsi Cadwaladr University Health Board, North Wales, UK; [C]consultant physician acute medicine, Ysbyty Gwynedd, Betsi Cadwaladr University Health Board, North Wales, UK; [D]professor of digital healthcare and director, University of Southampton, Southampton, UK and lead for new technologies, Health Informatics Unit, Royal College of Physicians, London, UK; [E]professor of health services research, Swansea University Medical School, Swansea, UK and director, Health Informatics Unit, Royal College of Physicians, UK

Definition of telemedicine

Telemedicine has been defined by the World Health Organization (WHO) as:

The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities.[7]

In summary, telemedicine embraces the remote diagnosis and treatment of patients by means of telecommunications technology. Confusion often exists between telemedicine (communication via video-conference platform such as Skype), telehealth (remote monitoring of clinical biomarkers) and telecare (remote monitoring via devices, alarms, sensors, reminders), but all are components of technology-enabled care (TEC),[8] a term used by the NHS in England[2] and Wales,[3] or 'eHealth', the term used in Scotland[4] and Northern Ireland.[5] The NHS views all of these innovations as important for progress towards a digitally enabled service.[9] There are many other potential applications of digital technology to patient management, such as monitoring, wearable technologies, online triage, online sources of health information, online booking of appointments, remote consultation, online access to health records and use of apps.[10] However, this paper focuses on remote consultation via video conferencing and does not address other communication modalities for telemedicine identified by the WHO, such as email, telephone consultations or SMS texting.[11]

A 2016 Nuffield Trust report[12] outlines how the digital patient will transform services, and observes that 'this agenda needs to be considered in light of an entire health system. The potential for transformational change comes from patients using digital tools on every step of their health journey – such as access to their entire health record containing secondary and community care information, apps that interface with that record and integrated data sharing across health and social care'. This is also the vision for health and care 2020,[9] which includes a proposed toolkit for commissioning TEC[8] and explicitly outlines the need for measuring the impact, or in other words, how this innovation enhances healthcare.

Olwen E Williams, Salah Elghenzai, Chris Subbe *et al*

Drivers and barriers for uptake of telemedicine

In healthcare, the initial drive for telemedicine[7] was to enhance access to healthcare for those in remote locations, but this is no longer the main incentive. The complex challenge of delivering healthcare to an increasingly frail, older population requires a novel approach. It is likely that video consultations for some patients requiring follow-up will reduce travel time and cost. Both on-demand and pre-planned video consultations can reduce the need for face-to-face consultations, saving time for both patient and doctor, and allowing the latter to focus on patients with complex requirements. There is a potential for the traditional outpatient consultation to become obsolete in some settings. Skype, a zero-cost software-based video tool, which can be used on many devices, offers an accessible telemedicine service – albeit on a non-secure platform. Secure software such as Skype for Business is also available. The ability for clinicians and patients to view medical notes and update them contemporaneously via a personal electronic health record, as highlighted by the Royal College of Physicians,[13] remains extremely important, not only for patient safety but for the success of the consultation.

Convenience, cost and appropriateness are therefore driving change, but facilitation of uptake requires an understanding of other factors that need to be addressed. These include organisational readiness, political strategy and ownership by clinicians. May *et al*[1] highlighted these issues as reasons for the failure of linear progression in implementing telemedicine in the 1990s. The C@rtref (CARe delivered via telemedicine to rural elderly frail) team[6] experienced challenges and internal barriers to service adoption as a result of organisational change and a lack of robust project management during that period. Other clinicians cite confidentiality, information governance and concerns regarding digital exclusion as barriers.[14]

As the burden of disease and health system usage lie predominantly with the older population, we must consider whether they will find telemedicine acceptable. The C@rtref Future Hospital development site project has focused on this issue.[6] Most studies have concentrated on adults of working age, so unfortunately very few studies have examined acceptability and patient experience in people over 75 years of age. While internet access has doubled in the 60–74 year old age group between 2003 and 2013, 79% of that age group lack digital and technological skills.[15]

However, it is not only older people who may have difficulty with new technologies; it is estimated that there are approximately 20 million individuals who lack digital skills[16] and are potentially at risk of social exclusion due to lack of qualifications (60%), age over 65 years (57%) or disability (49%).[17] Recent figures show that almost two-thirds of people aged over 75 years and a third of 65–74 year olds say they do not use the internet at all, compared with 17% of 55–64 year olds and 5% or less of people aged under 55 years.[18] In Wales, only 37% of the population access healthcare information via the internet.[19] Thus, digital literacy is potentially a serious challenge for the NHS and social care in England and Wales, both in developing strategy and in engaging citizens. Otherwise there is the potential for a minority to be 'digitally excluded'.

Cimperman *et al*[20] have listed seven main factors that influence the uptake of telemedicine in older people:

1 perceived usefulness
2 effort expectancy
3 social influence
4 perceived security
5 computer anxiety
6 facilitating conditions
7 physicians' opinion.

Interestingly, the strongest factor is physician recommendation. This suggests that clinicians need to champion telemedicine, otherwise uptake will be limited.

Telemedicine in the UK

Following a period of innovation and research into telemedicine in the late 1990s,[1] the use of video consultation failed to become mainstream. Thus, there is scant recent data on the application of telemedicine in the UK compared with the USA, where it is estimated that 15 million Americans received some form of TEC in 2016.[21] Questions are being raised in the USA about the true value of telemedicine, its regulation, licensing of the physician, remuneration, healthcare insurance and the risk of conducting high-volume, short consultations of poor quality.[22]

In Europe, the usage of telemedicine is monitored by the WHO European office,[23] with similar findings and concerns regarding the lack of evidence on how telemedicine enhances healthcare. In the UK, there are some excellent examples of telemedicine services developed over the past 10 years, for example the Airedale service.[24] Set up in 2010, Airedale now provides a range of services to care homes, prisons and for end-of-life care. However, while the authors advocate telemedicine on the grounds of promoting 'admission avoidance', published economic evaluations and assessment of patient satisfaction is limited.[25]

In her blog reflecting on a year of Vanguard status,[26] Bridget Fletcher, chief executive of Airedale NHS Foundation Trust, gives a candid view of being an Enhanced Health in Care Homes Vanguard:[27]

One of the greatest surprises has been how well the vast majority of elderly care home residents has adapted to talking with a nurse through a video link. Most have not batted an eyelid at the prospect of sharing their stories over the video link – perhaps showing up some of us in the next generation for our slow adaptation to technology and digital applications.

A retrospective, observational study showed that 24–7 access to a telemedicine hub for 27 care homes apparently reduced the cost of emergency admissions by 39%, but there was a 31% reduction from care homes not included in the study, therefore, other factors must have played a role too. The number of visits to emergency departments dropped by 45% in the study group and by 31% in the control group.[24] Their technology uses a secure video link giving care home staff and patients (mainly older people and individuals receiving end-of-life care) immediate access to senior nurses at the 'hub' (based at the district general hospital), advice and support, and timely decisions about any treatment needed.

In our hands in rural north Wales, teleconsultation has been used to improve the review of frail, older patients by giving

them access to follow-up closer to their own home[6] (see case study). This use of telemedicine to follow-up geriatric medicine outpatients at a community hospital site has measurably reduced the need for ambulance resources to transport patients to a district general hospital 60–90 minutes drive away. It has also increased flexibility by replacing scheduled follow-ups with on-demand appointments. Feedback from 87 patients has been very positive, with over 83% stating that they would recommend the clinics to family and friends. Patients have saved on average 64 minutes of travel time (40 miles) to and from the clinics, with 70% of these patients being discharged back to GP care.

Thomas *et al* highlighted the success of Skype consultations in the management of diabetes in a high prevalence area of London in a 2015 toolkit.[28] Diabetes Appointments via Webcam (DAWN) started in 2011 and 62% of patients have accepted a service via webcam from their own homes to their diabetes team. There was an improvement in their glycaemia control and a reduction in the 'did not attend' rate by 12% in young adults.

Evidence on quality of life

Innovative health technology should support the patient pathway. In a scoping review of 91 studies of varied design, Damant *et al*[29] found both positive and negative impacts of telemedicine on older people's quality of life; they also noted that the current evidence does not take into consideration how non-use of digital technology affects the quality of life of older people. Use of telecommunications, such as email or Skype, can have a positive effect,[29] while use of telecare (especially wearables) could be not only stigmatising for individuals with dementia[30] but might also lead to dependency on the monitoring, leading to loss of independence. New work by Greenhalgh *et al*[31] on the National Institute for Health Research-funded VOCAL (virtual online consultations: advantages and limitations) project will provide further insights into acceptability and impact of telemedicine.

Cost-effectiveness of telemedicine

NHS England has asserted that 'Technology can help people use care services less by supporting healthier lives and it can transform the cost of services when they are needed',[9] but there is scant economic evidence for this.[32]

A review of the evidence by the Nuffield Trust[12] focused on the possible transformation of healthcare by digital technologies, identifying seven opportunities to improve productivity and quality. One of these is 'improved access to specialist expertise' using telemedicine – either professional to professional or patient to professional. The review notes that the service may be more costly or lead to increased demand, there is a need to select suitable cases and it requires staff engagement to have impact. In the north Wales project,[6] although some of the cost benefits were realised by patients, there were also savings in travel expenses for the consultant (£1,411 per year, calculated at 42p per mile). While there has been no direct saving of sessional time, the travelling time saved was used to cover emergency care.

Case study: lessons learned from delivering a teleconsultation service

The north Wales project (C@rtref)[6] commenced in September 2014 as a 'proof of concept' project following funding via the Welsh Government Health Technology Innovation Fund. The project attained Royal College of Physicians Future Hospital first wave development site status.

It aimed to explore the acceptability and feasibility of providing a telemedicine follow-up outpatients review for older people with multiple medical comorbidities. Patients aged over 75 years of age with multiple comorbidities living greater than 30 miles from the district general hospital or attending several different specialty outpatients were identified and offered follow-up via video consultation with a geriatrician on an opt-in basis. Patients who accepted the service attended a community hospital with high definition video-conferencing equipment, where a nurse trained in facilitating the video consultation ensured the patient consented and then supported them during the process. Each patient was assigned a frailty score using the Rockwood Frailty scoring system.[33] Outcomes of the consultation were documented as well as any significant patient management changes. The patient completed a post-consultation questionnaire and if a further consultation was planned, they had the option to be seen face to face or 'virtually'. Standard quality improvement methodology using plan-do-study-act (PDSA) cycles[34] was adopted. Metrics included comprehensive patient satisfaction questionnaires with extensive demographic information, the patients' views of the clinics and whether they would recommend the clinics to their family and friends. Data on patients' mode of transport, miles travelled to clinics and miles saved were calculated. To date, over 200 individuals aged between 75 and 104 years have used the facility. The majority were moderately frail as measured by Rockwood's clinical frailty score. The specific outcomes of this 'proof of concept' work will be reported in a future paper.

Lessons learned so far

Co-production
Co-production is essential for success in setting up a telemedicine service because uptake and delivery are entirely dependent on both clinical and patient groups 'buying into' a service model that meets the needs of the majority. User engagement from the outset can be facilitated by working with agencies, such as Citizens Online (**www.citizensonline.org**), that focus on digital inclusion, dispelling myths and anxieties, and providing training and support. We employed a digital inclusion officer who secured community support by working with local community groups, county councillors and the local media.

Patient champions and representatives should be made familiar with all aspects of the planned patient pathway – their opinion is invaluable. Patient information leaflets and an option to take part in a demonstration consultation should be available. Adopting an 'opt-in' approach is essential, as some patients will desire to see their clinician in person. Use of a short, validated patient experience questionnaire is important in order to inform how the service can be adapted to meet patient needs. It is also a powerful tool in motivating clinicians to continually adapt, in line with PDSA cycles. Neither age nor frailty score were

Olwen E Williams, Salah Elghenzai, Chris Subbe *et al*

barriers to acceptability of telemedicine consultation; however, the patient group all 'opted-in' to use this service. None have requested to revert to face-to-face meetings; however, the clinician has arranged to assess a minority of patients in person.

Clinician engagement is also essential. Our consultant body felt that the service was only acceptable for review/follow-up patients and chose to see new patients at an initial face-to-face consultation with an option for telemedicine follow-up. We experienced a mixed response from different consultants: uptake was brisk by those who routinely travelled long distances to outlying clinics, while some specialists who routinely need to examine patients (eg rheumatologists) felt the service was not acceptable. Clinicians from all other specialties who are delivering outpatient services for a newly opened prison are adopting video consultation for follow-up appointments.

Documentation

Telemedicine lends itself to supporting a variety of settings, both in planned and unplanned care. However, whatever the setting, documentation of the consultation is essential. We developed a paper-based proforma for the consultation as we are not currently using electronic patient records. This was integrated into the patient record and was suitable to send to the patients' GP. The patients' paper notes were with the doctor at the time of the virtual consultation. We developed bi-lingual patient information, letters of invitation to consultation, consent forms and questionnaires (Box 1).

Ideally, the consultation should be added to the electronic patient record, which can then generate a consultation summary to be sent electronically to the patient's GP.

An advertising service is essential not only to 'recruit' but to 'normalise' the service. We felt that it was important that family and carers were aware of the video consultation as they might get concerned if their relative started to tell them about 'the man on the TV'. The letter inviting the patient to the video consultation has to be explicit about the place and nature of the 'visit'. We had people travel to the consultants' office by mistake in the early days of the project. The booking clerks must also be aware of the nature of the service so that they send the appropriate letters to patients.

We have not recorded the consultations, but still do require participants' consent. If recording is judged necessary, the options are to record by video and audio or only audio. Audio recording might be more appropriate in the unplanned care setting to have for future reference, while a video recording is feasible in the outpatient setting. Storage requirements for this data must be taken into consideration.

Box 1. The 'paperwork' accompanying telemedicine consultations

> Patient information leaflet

> Posters and social media advertising the service

> 'Outpatient' telemedicine appointment letter

> Consent form

> Patient episode documentation, preferably a summary that is suitable for both the patient record and to send to their GP

> Patient satisfaction questionnaire

Technical aspects

A variety of equipment from smart phones to high-definition video carts can be used, but choice will be setting dependent. In gerontology outpatients, the sensory needs of the patient must be considered, and will probably require a large screen with good sound. We found that a 42-inch screen was the smallest acceptable size. This needs to be high definition, with a moveable camera that will pick up fine movement and skin colour to aid clinician assessment. It is possible for the clinician to video conference using an iPad, laptop or desktop. These must have 'sound' function or the use of a headset and microphone. Consultation time should not be any longer than that set for a face-to-face consultation. We initially built in an extra 10 minutes for each consultation but reduced this once both the clinician and outpatient nurse at the remote location became familiar with the process.

The physical environment

Consultations should be carried out with the clinician in a suitable private location, such as an outpatient room. There need to be minimal distractions, with low possibility of interruption from mobiles or landlines, in particular. If the location is the clinician's office, care must be taken to remove any pictures, posters or calendars that may be of a personal nature – pictures of the clinician's children for example. The patient ideally should be in a 'clinical' room with a colour scheme that does not impact skin colour; our preferred colour scheme is pale blue. A telemedicine service in Australia imposed a dress code for patients, as some individuals who were videoconferencing from their home presented themselves in a vest and underpants.[35] In the unplanned setting it is hard to predefine any of these requirements.

Useful tools

Digital stethoscopes and ophthalmoscopes can be used, but do require some practice to obtain the best results. Our experience did not find the stethoscope ideal as there was a significant amount of background noise picked up, distorting the chest and heart sounds. In the unplanned setting, the use of iPads has been trialled with excellent results.[23] The tablet computer, by being transportable, can facilitate a consultation at the patient's bedside, enabling the clinician to gain an overall impression of the wellbeing of the individual. Infection control issues can be overcome by using 'wipeable' covers for the devices.

Security and quality of the internet connection

Digital information governance and security is paramount. Service users need to be made aware that Skype is not secure unless it is used behind a network address translation (NAT) service. QIPP Digital Technology provide guidance on this.[36] In Wales, the Skype for Business service is encrypted and secure, so can be used with laptops, smart phones and tablets and can support multidisciplinary teams working in the community. It will be extended to include organisations outside the NHS, such as community services, care homes etc. Clinicians will be able to include patients in those calls provided the patient has a broadband connection where they live.

Our experience is of video consultations from one NHS facility to another on a pre-arranged time and date. The

clinician uses their laptop and there is a high-definition video cart at the remote site. However, using Skype for Business, an electronic link can be emailed to patients to dial in to a pre-arranged video consultation on their device wherever they are. This allows flexibility for both patient and clinician.

The quality of the internet connection is important. Bandwidth should be adequate to avoid 'drop-out' (loss of connection), but lagging of sound and picture during a consultation can be an issue. If a connection is lost, staff at the remote site must be familiar with the procedure to adopt. Access to a telephone is essential so the consultation can continue, and it is important to have prompt IT back-up.

Conclusion

There is a paucity of robust evidence that telemedicine enhances healthcare, but it has obvious potential in some contexts. The C@rtref service highlighted that telemedicine was both an acceptable and feasible tool for follow-up consultations in frail and older people. Positive feedback from service users was a major driver and reinforced the clinicians' enthusiasm, highlighting the need for engagement with potential service users. User evaluation and economic evaluation assessment should be in place at the start of implementation. Commissioners of telemedicine services need to ensure that they evaluate not only the volume but also the quality and the impact of the digital services they fund, while clinicians wishing to set up a secondary care telemedicine service are invited to consider the common-sense lessons harvested from 3 years of experience running a real service in Wales. ∎

Conflicts of Interest

The authors have no conflicts of interest to declare.

Acknowledgments

References

1   May C, Harrison R, Finch T *et al*. Understanding the normalization of telemedicine services through qualitative evaluation. *J Am Med Inform Assoc* 2003;10:596–604.

2   National Information Board. *Personalised Health and Care 2020: using data and technology to transform outcomes for patients and citizens – a framework for action*. London: National Information Board, 2014.

3   NHS Wales. *Informed health and care: a digital health and social care strategy for Wales*. Cardiff: Welsh Government, 2015.

4   NHS Scotland. *eHealth Strategy 2014–2017*. Edinburgh: The Scottish Government, 2015.

5   Health and Social Care Board. *eHealth and Care Strategy for Northern Ireland: improving health and wealth through the use of information and communication technology*. Belfast: Health and Social Care Board, 2016.

6   Royal College of Physicians. *Future Hospital development site: Betsi Cadwaladr University Health Board*. London: RCP, 2015. www.rcplondon.ac.uk/projects/outputs/future-hospital-development-site-betsi-cadwaladr-university-health-board [Accessed 2 May 2017].

7   World Health Organization. *A health telematics policy in support of WHO's health-for-all strategy for global health development: report of the WHO group consultation on health telematics, 11–16 December, Geneva, 1997*. Geneva: WHO, 1998.

8   NHS Commissioning Assembly. *Technology enabled care services: resource for commissioners*. NHS England, 2015. www.england.nhs.uk/wp-content/uploads/2014/12/TECS_FinalDraft_0901.pdf [Accessed 2 May 2017].

9   Department of Health. *Digital strategy: leading the culture change in health and care*. London: Department of Health, 2012.

10 Castle-Clarke S, Imison C. *The digital patient: transforming primary care?* London: Nuffield Trust, 2016.

11 World Health Organization. *Telemedicine: opportunities and developments in member states. Report on the second global survey on ehealth*. Geneva: WHO, 2010.

12 Imison C, Castle-Clarke S, Watson R, Edwards N. *Delivering the benefits of digital health care*. London: Nuffield Trust, 2016.

13 Royal College of Physicians. *Personal health record (PHR) landscape review: final report*. London: RCP, 2016.

14 MacNeill V, Sanders C, Fitzpatrick R *et al*. Experiences of front-line health professionals in the delivery of telehealth: a qualitative study. *Br J Gen Pract* 2014;64:e401–7.

15 Damant J, Knapp M. *What are the likely changes in society and technology which will impact upon the ability of older adults to maintain social (extra-familial) networks of support now, in 2025 and in 2040? Future of ageing: evidence review*. London: Government Office for Science, 2015.

16 House of Lords Select Committee on Digital Skills. *Make or break: the UK's digital future*. London: House of Lords, 2015.

17 Ipsos MORI. *Basic digital skills: UK report 2015*. London: Ipsos MORI, 2015.

18 Ofcom. *The communications market report*. London: Ofcom, 2014.

19 Ofcom. *Communications market report: Wales*. Cardiff: Ofcom, 2015. www.ofcom.org.uk/research-and-data/cmr/cmr15/wales [Accessed 2 May 2017].

20 Cimperman M, Makovec M, Trkman P, Stanonik M. Older adults' perceptions of home telehealth services. *Telemed J E Health* 2013;19:786–90.

21 American Telemedicine Association. www.americantelemed.org/home [Accessed 2 May 2017].

22 Beck M. How Telemedicine is transforming health care. New York: Wall Street Journal, 2016. www.wsj.com/articles/how-telemedicine-is-transforming-health-care-1466993402 [Accessed 2 May 2017].

23 World Health Organization. *From innovation to implementation: ehealth in the WHO European Region*. Copenhagen: WHO Regional Office for Europe, 2016.

24 Hex N, Tuggey J, Wright D, Malin R. Telemedicine in care homes in Airedale, Wharfedale and Craven. *Clinical Governance: An International Journal* 2015;20:146–54.

25 Cruickshank J, Paxman J. *Yorkshire and the Humber Telehealth Hub: project evaluation January 2013*. London: 2020health.org, 2013.

26 Fletcher B. *Lessons from a Vanguard: one year in*. London: Nuffield Trust, 2016. www.nuffieldtrust.org.uk/blog/vanguard-one-year-in [Accessed 2 May 2017].

27 NHS England. *New care models: the framework for enhanced health in care homes*. Leeds: NHS England, 2016.

28 London Strategic Clinical Networks. *Improving the management of diabetes care: a toolkit for London clinical commissioning groups*. London: NHS England, 2015.

29 Damant J, Knapp M, Freddolino P, Lombard D. Effects of digital engagement on the quality of life of older people. *Health Soc Care Community* 2016; doi:10.1111/hsc.12335. [Epub ahead of print]

30 Greenhalgh T, Proter R, Wherton J, Sugarhood P, Shaw S. The organising vision for telehealth and telecare: discourse analysis. *BMJ Open* 2012;2:e001574.

31 Greenhalgh T, Vijayaraghavan S, Wherton J *et al*. Virtual online consultations: advantages and limitations (VOCAL) study. *BMJ Open* 2016;6:e009388.

Olwen E Williams, Salah Elghenzai, Chris Subbe *et al*

32   Scott P. Exploiting the information revolution: call for independent evaluation of the latest English national experiment. *J Innov Health Inform* 2015;22:244–9.

33   Rockwood K, Song X, MacKnight C *et al*. A global clinical measure of fitness and frailty in elderly people. *CMAJ* 2005;173:489–95.

34   1000 Lives Improvement. *The quality improvement guide: the improving quality together edition.* Cardiff: 1000 Lives Improvement, 2014.

35   Banbury A, Parkinson L, Nancarrow S, Dart J, Gray L. *Using telehealth for videoconference groups for health literacy and self management skills in older people with chronic disease: process and procedures.* London: King's Fund, 2015. www.kingsfund.org.uk/sites/files/kf/media/Annie%20Banbury%20THLP%20DHCCV%20Final.pdf [Accessed 2 May 2017].

36   QIPP Digital Technology. *A brief guide to Skype remote consultations.* NHS, 2012. www.networks.nhs.uk/nhs-networks/qipp-digital-technology-and-vision/documents/QIPP%20DT%20Skype%20Factsheet%20v1.pdf [Accessed 2 May 2017].

Address for correspondence: Dr Olwen E Williams, Department of Sexual Health, Wrexham Maelor Hospital, Wrexham LL13 7TD, UK.
Email: olwen.williams@wales.nhs.uk