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Invited review

Covid-19 and the 'new normal': are remote video consultations here to stay?

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Abstract

Introduction: During the UK Covid-19 lockdown, video consultations (telemedicine) were encouraged. The extent of usage, and to which concerns to earlier implementation were set aside, is unknown; this is worthy of exploration as data becomes available.

Sources of data: Sources of data are as follows: published case studies, editorials, news articles and government guidance.

Areas of agreement: Video can be clinically effective, especially where patients cannot attend due to illness or infection risk. Patients are positive, and they can benefit from savings in time and money. Adoption of telemedicine is hindered by a range of known barriers including clinician resistance due to technological problems, disrupted routines, increased workload, decreased work satisfaction and organizational readiness.

Areas of controversy: Despite policy impetus and successful pilots, telemedicine has not been adopted at scale.

Growing points: Increased use of telemedicine during the Covid-19 crisis presents opportunities to obtain robust evidence of issues and create service transformation effectively.

Areas timely for developing research: Examination of telemedicine use during the Covid-19 crisis to ensure that the benefits and usage continue into the post-lockdown, 'new normal' world.

Key words: Delivery of healthcare, remote consultation, videoconferencing, telemedicine, Covid-19

Introduction and background

Over the previous decade, video conferencing has existed as a mature technology (e.g. FaceTime, Skype, Lync, Webex) and used widely in both social and professional contexts. Responding to this opportunity, many innovative individuals within the health professions undertook painstaking practice and service development work to devise clinical protocols for a range of remote consultation interventions, referred to here as telemedicine (see for example Fetal Telemedicine[1]; Telepsychiatry[2]; Teleswallowing[3]). These individuals acted as champions, often seeking external funding and promoting their own work to management, colleagues and professional institutions. Their work focused initially on designing and testing clinical validity and efficacy: could the patient receive (at least) the same standard of care over video as they would face to face? Some work was often necessary with technology providers and internal support services to adapt the products being used. These innovators often assumed that if they could demonstrate clinically efficacy, managers and colleagues would immediately choose to implement their innovation. It was expected that the decision would be largely driven by financial factors. Winning arguments would come from the ability to reduce hospital admissions through more timely intervention, the reduction of staff travel to service users and efficiencies to be gained through 'productionizing' interventions. Rarely was the argument for reducing infection risk used, although it could have been.

Funding was duly made available to these clinical digital champions, often from external bodies such as National Institute for Health Research or Academic Health Science Networks, for pilots and academic partners engaged to undertake the independent evaluation. However, despite a large body of work, progression from pilot to mainstream adoption proved surprisingly limited.[4–8] The reasons can be found in some of the independent evaluation studies and are discussed below; no new data were generated or analysed in support of this review.

In late March 2020, the UK Government imposed 'lockdown' throughout the UK, making it illegal for citizens to leave home unless they had specific, 'essential' reasons, in order to minimize the scale of Covid-19 across the country. During this period, working from home was encouraged 'where possible.' With regards to healthcare, whereas governments in Australia and the US had encouraged the use of technology for remote consultations, and backed this up with substantial funding, the UK government did not[9]—although the Scottish government did accelerate funding for telemedicine.[9] Fisk *et al*.[9] attribute this lack of promotion to an apparent 'general lack of developed services' in the UK.

On March 17, 2020, NHS England directed NHS trusts, GP practices and other providers of NHS services to 'redirect staff and resources' in preparation for the expected rise in Covid-19 cases.[10] This included the postponement of non-urgent elective surgeries and the urgent discharge of patients 'medically fit to leave.' Brief mention was made to video consultation in this document, but only in relation to older and vulnerable people who were shielding, and the redeployment of vulnerable staff. A follow-up directive on March 19 laid bare the coming restrictions in access to healthcare, with face-to-face consultation being discouraged unless necessary, and remote consultation/virtual support being encouraged.[11] Further, information governance regulations, often hitherto regarded as regulatory barriers, were relaxed.[12] Healthcare staff members were permitted to use 'mobile messaging' and 'video conferencing tools such as Skype, WhatsApp, Facetime,' as well as to use personal devices to support remote consultation 'where there is no practical alternative.'[12] Some

professional bodies, the Chartered Society of Physiotherapists[13] for example, developed rapid guidelines on video consultation. And a host of fast-tracked academic papers have advised on how to do video (including, amongst others, 'quick tips' for outpatient video consultations[14]; 'virtual urology clinic'[15]; chronic pain management[16]; video consultations for Covid-19[17]; Telepalliative medicine[18]; Teleurology[19]; cardiac rehabilitation[20]; digital mental health[21]).

Consequently, the use of telemedicine was perceived as an appropriate response to lockdown and resulted in increased use globally.[22] Although telemedicine use is reported to have increased in Scotland,[9] how far it impacted in the rest of UK is yet to be determined.

Nevertheless, a number of questions arise, which are discussed in more detail as follows: (i) Are the reasons for reluctance to use video in the past no longer valid? (ii) Are the reasons temporarily invalid, during the crisis period, but will become important again once this is past? (iii) Can we learn from both the previous concerns and the current usage to implement video consultations effectively in the longer term?

Discussion

The impact of the current crisis on the provision of non-Covid-19 healthcare has been highlighted with many concerns (for example, affecting usage of emergency care[23]; cancer survival rates,[24] and access to mental health support[25]). Telemedicine is perceived as a possible solution. Telemedicine has already been used to communicate directly with patients in their own homes,[26] as well as for consultations with patients and/or clinicians in other settings, for example, between district general hospitals and tertiary centres[1]; nursing home staff and allied health professionals[3]; care homes and Digital Care Hubs.[27] In these examples, telemedicine was seen as a way to increase access to healthcare for people living in remote/rural areas for whom limited access was the norm; this is now the new normal for most. It is worth noting that patients' views are largely positive, although there exists less systematic research into their experience. Notwithstanding, patients can be motivated by convenience and cost savings, as telemedicine means their personal travel can be avoided.[1, 28] In the current context, patients will likely be motivated by the reduction of risk of infection and by some contact with the health service being better than no contact at all.

The academic literature highlights known barriers and enablers to technological innovations in health settings.[5, 6] Key among the barriers is resistance from clinical users. Recurring concerns by health professionals, who have piloted the use of video consultations, are useful to guide the evaluation of current usage. The major concerns from our research are collated as follows[29]: (i) low confidence that the technology will work, or that support will be provided, (ii) dissonance with professional identity relating to issues of accountability and negative impacts on the staff–patient relationship—not comfortable with video distancing, missing out on body language cues, feeling of being deskilled, (iii) reduced job satisfaction (tiredness, eye strain, missing out on travel 'downtime' between consultations, (iv) fears of job losses, (v) concerns that patients are being offered 'second best' to reduce costs; (vi) concerns that some patients, particularly the elderly, will not be able to use the technology.

Greenhalgh *et al.* [30] identified four elements of clinician resistance to information and communication technology: resistance to 'the nature and justification for the policy' underpinning the innovation, resistance to the sociomaterial constraints of the technology, resistance to compromised professional practice and resistance to compromised professional relationships.

Resistance to policy relates to the underlying case for the implementation of technology. Clinical staff members have often doubted the need for telemedicine and have struggled to comprehend its value to their service and/or practice.[4,8,9] It is important that user stakeholders understand why innovation is happening and what will be the 'relative advantages.'[31] The Technology Acceptance

Model[32, 33] identifies two main factors influencing the adoption of a technology or innovation: perceived usefulness and perceived ease of use. Helping potential users to understand the usefulness of the innovation will help gain their acceptance.

Given the current Covid-19 crisis, one would imagine clinical staff to be more inclined to see video as a solution and be more attuned to the 'relative advantages' and 'perceived usefulness' of remote consultation. Nevertheless, one should not underestimate the importance of providing opportunities for 'sense making' wherein staff can develop shared understandings of purpose, the potential benefits and what is expected from them, which are necessarily absent in such a rapid rollout as we see in the current crisis. Many authors recommend the use of clinical digital champions as facilitators of telehealth implementation.[4, 6] Digital champions can legitimate an innovation by interpreting and disseminating evidence, and influencing stakeholders through enthusiastic promotion to colleagues, senior managers and service users.

Moreover, staff engagement is beneficial for gaining 'cognitive participation' or 'buy-in'[34] and fosters 'a sense of ownership.'[6] Zanaboni and Wootton[8] argue that adoption is 'significantly correlated with adopters' perceptions of the advantages'; telemedicine is successful and adopted 'when it is perceived as a benefit and as a solution to political and medical issues,'[8] which it surely must be at this time. During the pandemic, telemedicine is being used, but we do not know how it is perceived by staff users or whether they see it as a valuable tool for their clinical mission. Moreover, we cannot tell whether this is seen as a long-term service transformation or whether clinical staff will revert to routine practice at the first opportunity.

The sociomaterial constraints of the technology refer to the 'the material properties and limitations of the technology under conditions of expected use.'[30] The Technology Acceptance Model refers instead to 'perceived ease of use.'[32, 33] Technological problems are a known barrier to acceptance.[3, 4, 6, 29] The fact that rollout of new technology in the NHS has been plagued by technical problems is a major issue which cannot be underestimated and is still an issue now.[35] Already stressed staff are extremely wary of technical unreliability and its ability to compromise their overloaded workflows, which are organized so that any delay can be critical. Complex systems that are difficult to use can be problematic and have led users to avoid or reject such new ways of working. In the current climate, where there is not time for trialability,[30] it may be that staff members have no other option than to stick with it and to make it work. Nonetheless, many authors highlight the importance of having easy-to-use, reliable equipment[4, 6, 8, 36] that can be adapted to the local context.[6] The availability of technical support is also recommended.[4, 6]

Another issue, relating to 'perceived ease of use' is the compatibility, or alignment, of the new service to existing practices, pathways and workflows. Technological innovation can disrupt established routines, and a lack of fit between the innovation and normal practice can become a barrier to acceptance.[4–6] Vuononvirta *et al*.[36] have highlighted the intransigent nature of routine practices due to habituation which 'has made them easy and fluent for health professionals.' Consequently, for clinicians, telemedicine is 'almost always more time and trouble than practicing in an ordinary way' due to the 'additional effort and technical expertise required.'[8] Compatibility also correlates with 'perceived usefulness,' and, subsequently, attitudes toward technological innovations; good alignment facilitates use. Therefore, incorporating workflow analysis into system design is recommended.[6] Where a lack of alignment is unavoidable then pathway redesign may be necessary.

In normal times, rigorous planning for implementation would be recommended.[6] In the current situation, systems will have had to be adapted, rolled out and staff trained in a very short time, within an already stressful situation. This can only have been achieved through the significant diversion of resources and management priority. Support from senior staff and strong leadership has been identified as a key enabler of innovation.[4, 5] Greenhalgh *et al*.[5] highlight the importance of an organization's readiness for innovation, pointing to factors such

as good leadership and managerial relations; slack resources and the encouragement of risk-taking, as opposed to organizations that are under pressure due to limited resources, 'weak leadership and managerial relations' and an aversion to risk-taking. It may be that services that quickly transitioned to telemedicine resembled the former rather than the latter. However, the usefulness of the technology is at the forefront of the corporate mind, as video consultations may have proved to be critical to maintaining core services safely.

Furthermore, several studies have highlighted the altered staff–patient relationship caused by telemedicine; this is often viewed negatively.[3,4,36] Many health professionals view face to face consultation as the exemplar of good care; any change to this is felt as threatening. Undoubtedly, consultations requiring physical examination are unsuitable for telemedicine, yet many consultations involve only talking. During the lockdown, most face-to-face consultations were suspended meaning no consultations at all. Notwithstanding, staff have voiced concerns about the impact of telemedicine on the staff–patient relationship, communications can be interrupted by problems with equipment which then inhibits conversation; staff miss face-to-face contact with patients and the satisfaction it brings.[3,4] Evidence is still emerging, but it seems that the level of care has been reduced, particularly for the elderly and those with long-term conditions.[37] Some of this could be due to the diminished efficacy of video consultations, or indeed to reluctance to use it, and this needs to be researched in due course.

This brings us to the last question and the crux of this paper: how can we go from here to the successful implementation of video consultations for the long-term? The crisis has provided a golden opportunity for large scale usage to be researched and for the findings of earlier research to be revisited. Some of the barriers may prove to be overstated. In the light of experience, professional users may find that the technology is more useful and easier to use than they had feared. However, some issues will not go away and will become glaringly obvious when studied at scale. There is no doubt, for instance, that working at home and sitting in front of a screen all day, alone, is more tiring than interacting with colleagues in a work environment. We have all experienced the eye strain, muscle ache, restlessness and inability to concentrate after long sessions. These concerns require creative approaches, as do the real concerns over job roles and ways to support digitally challenged users (staff members and patients). However, there is an opportunity to gather the evidence now and start the conversation.

Fisk *et al*.[9] argue that the 'Covid-19 outbreak was a major "jolt" to the National Health Service, that had been and remains, in part, reluctant to embrace telehealth.' Innovation should not be left to 'champions' who are prepared to defend and refine their ideas until they are grudgingly accepted. It should be the responsibility of senior management and all layers of staff, recognizing that the process involves building an evidence base and addressing problems in an open and transparent way. These concerns should still apply during the current crisis and in the longer term.

However, what has radically changed in the new world is 'perceived usefulness.' Health professionals—and perhaps more particularly, senior management—recognize that the service level can only be maintained safely by using video. Where compromise is necessary—due to the patient's circumstances or the need for physical care—it places the health professional at greater risk of infection. Suddenly there is a compelling reason to overcome all the issues and 'perceived usefulness' trumps 'perceived ease of use.'

This is laudable and necessary during the crisis, but there is a real possibility that the use of video will be part of the 'new normal.' Whilst this will be welcomed by patients, there needs to be an open discussion with professionals. Research has shown that there has been much passive resistance to video consultations and technology enabled care, and that some of the objections can be mutually overcome if managers and staff members work together. For example, the lack of confidence in using the technology can be overcome by a greater investment in service design, training and safe experimentation by staff and service users.[29] The issue of job loss concern and dissonance with professional identity

are both related to service transformation, in which new roles are emerging and older ones being discontinued. Only by open and respectful discussion can this be done fairly: a process that has been almost impossible under the austerity ideology of the last 10 years.

Conclusion

The Covid-19 pandemic crisis has meant that video consultations are being rolled out globally. In the UK, whilst the Scottish government accelerated its funding to support innovation, the UK government was slower to react on this front.[9] NHS England has encouraged health providers to use video consultation and guidelines have been rapidly written, but we do not know yet the extent of roll out. Nevertheless, the efficacy and acceptability of telemedicine has been evidenced in many evaluations and so now is the ideal time to develop capability so that telemedicine becomes an integral part of health service delivery. Whether telemedicine remains a significant part of service delivery in the future will depend on how useful it is perceived to be over the longer term and if there is a genuine benefit.

Authors' biography

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