

TECHNOLOGY ENABLED CARE



Background Literature

Video Consulting

NHS Wales Video Consultation Service Evaluation
December 2020

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Introduction

Since the COVID-19 pandemic, the recognition and uptake of remote digital healthcare such as video consulting (VC) has accelerated to the forefront of healthcare delivery. At present, VC is used extensively across the United Kingdom (UK) and throughout the National Health Service (NHS). The utilisation of VC, to this extent at least, is a new and innovative method of healthcare practice in the UK, in that its use and acceptance, presents a very different picture today, than it did pre-COVID. Yet, despite its novel recognition and uptake, VC has a longstanding reputation and vast following across many other parts of the world for its pioneering ability to deliver healthcare and offer various benefits and advantages to its attending patients and professionals.

History of Digital Healthcare & Video Consulting

The earliest reported use of remote healthcare began in the 1870s when the telephone consultation (TC) was introduced as a method of healthcare delivery as a practical solution to reduce the demand for face-to-face (FTF) consultations [1]. Documented use of VC however, extends back to the early 2000's, yet despite its less established position within healthcare delivery compared to TC, VC is supported by extensive research demonstrating its use, value and benefits to healthcare recipients across the world [2-4].

For the majority of health-related conditions, FTF is generally the most utilised method of healthcare delivery, whether that be within Primary, Secondary or Community Care [5-7]. In addition, TC is not used, but often in conjunction with FTF, rather than as a direct alternative, in spite of its established cost-effectiveness and improved patient accessibility [8, 9]. However, TC's do have their limitations, in that they are not always an adequate or suitable method of consultation. For instance, it can be said that TC can lack a personal patient-professional connection and, can exclude visual cues which may be essential to performing an assessment or examination, or allow the patients to convey their symptoms effectively [9]. As the development of VC matures [10] to build

upon existing methods of consultation and bridge the gap between FTF and TC, it has become more apparent in recent years that VC is an attractive choice, and often an ideal combination, to provide the reassurance and visual cues that TC alone cannot provide, yet still presents a more convenient method of healthcare compared to FTF [10, 11].

COVID-19 & Video Consulting

During the COVID-19 pandemic, instead of traditional FTF consultations, VC helped fill the gap and support professionals to provide a safer solution to continue providing adequate patient care [12]. This, for many, involved professionals offering VC as a default option, in which they were able to resume a wide range of healthcare activities via VC [13]. FTF still remained available for many appointment types that were clinically deemed unsuitable for VC, and similarly, TC was offered when VC was considered unnecessary [14]. Nevertheless, widespread uptake of VC during the pandemic improved recognition, increased acceptance and contributed to a reduction of clinical apprehension, reluctance and myths surrounding VC, thus contributing to a larger emphasis on its expansion as a longer-term mode of healthcare delivery moving forward post-COVID, whilst increasing the understanding of the importance of reserving FTF and TC for more appropriate consultations [15, 16].

Video Consulting in United Kingdom (UK)

In countries such as Australia, New Zealand and Canada, there is an extensive evidence-base demonstrating high levels of patient satisfaction, reported benefits, clinical suitability and acceptance of VC [17, 18, 19]. In contrast, the UK have been slow to contend with other countries and gain comparable momentum in clinical use, uptake and evaluation [20, 21]. Nevertheless, pre-COVID, the UK was beginning to make strides, with digital healthcare innovations with VC beginning to steadily rise in recognition and uptake in some parts of the UK [22-26].

For example, NHS England initially planned to implement digital healthcare into its own health strategy with a promising Digital-First Primary Care plan, stating that technology is continually introducing new opportunities for the prevention, care and treatment of illness. In 2019, a long-term health plan was published with the view that current VC use would be expanded and routinely used across Primary Care by 2024 [27]. This plan was introduced just as VC was needed more than ever with the emergence of the COVID-19 pandemic [28], witnessing a significant rise in VC uptake during this time [29].

In Wales, there were previous small pilot studies testing the use of VC across a range of healthcare services. For example, a pilot study running between 2019 and 2020 in Aneurin Bevan University Health Board tested the use of the 'Attend Anywhere' VC platform for specialist Child and Adolescent Mental Health services (CAMHS). This study demonstrated high patient satisfaction and travel savings, however, professional resistance was a reported barrier [30, 31]. It was not until March 2020 when the emergency announcement issued by the Welsh Government responding to the COVID-19 outbreak was made, that VC in Wales built its momentum, and this was due to the fast-paced implementation of the new NHS Wales Video Consulting Service rolled out by Technology Enabled Care (TEC) Cymru [32, 33] to all NHS services in Wales. Similarly to other countries, Wales observed a significant rise in VC uptake during this time, and shortly after its introduction, the Welsh Government issued a press release that digital interventions are here to stay, thus supporting the continued use of technology such as VC [34, 35]. In addition, the Welsh Government (2020) also ensured that Microsoft Teams was made available to all Welsh NHS staff to enable professional to professional contact and allow more flexibility for remote working [36]. This was later supported by a Welsh Government call for at least 30% of home working to continue post-COVID [37]. This work aligns with Welsh policy and the long-term strategic aims of 'A Healthier Wales' which sets out a commitment to deliver health services to population of Wales in new ways and closer to home [38]

In Scotland, in 2018, the 'NHS Near Me' VC service was launched, and from this, it has expanded throughout Scotland. Professionals within the 'NHS Near Me' programme worked closely with patients (for 6 months) to ensure it was a patient-led service, taking into consideration the 'wants and needs' of patients [39]. The success of this led to the increase of VC use in Scotland during COVID-19 pandemic, which is much higher than in England and Wales, and is believed to be central to its success.

The emerging plans to implement VC across all of the UK [40] were amplified due to the COVID-19 pandemic. There was a need for a rapid transition to using VC, with services having to adapt and utilise VC at a fast pace, rather than rely heavily on FTF and TC [41]. Subsequently, a rise in online VC platforms such as 'Attend Anywhere' and 'AccuRx' were purchased and implemented across all parts of the UK, with more licences issued in April 2020 than ever before [42], with a significant increase in the use of VC during this time [43, 44]. The implementation of VC following COVID-19 was the fastest and most extensive scale-up of any major innovation, particularly digital health, since the establishment of the NHS in 1948 [45].

Interestingly, uptake of different platforms suggest some to be more suited to different care sectors in the UK. For example, 80% of Primary Care practices are now reported to be using 'AccuRx', which enables GPs to send texts, video consult and exchange documents and images with patients when required [40]. Secondary Care however, has been more suited to the 'Attend Anywhere' platform, as it offers the ability to pre-book appointments, allowing the patient to enter a virtual waiting room at a scheduled time – much like it is in person [46].

Professionals Perception of VC

VC in the UK is relatively new to many professionals. Therefore, as the COVID-19 pandemic emerged, professionals were required to learn and adjust to VC at a fast pace [17]. While many professionals embraced the change to digital [47], others remained resistant to utilising it within their routine practice [48]. For some, this stems from previous experience of failed technical encounters during pilot phases, especially within Primary Care [49]. For others, resistance is related to concerns of digital exclusion for certain patients such as technology accessibility, geography and sociodemographic disadvantages [50]. In some specific areas, such as Intensive Care Unit (ICU) services, the use of VC resistance is expressed by professionals regarding their concerns of the lack of empathy via VC and TC methods, compared to FTF [51]. On the contrary, ICU patients and families strongly disagree and advocate that empathy was conveyed appropriately across all types of consultations [51].

In pre-COVID research, it is reported that professional resistance is often associated to how well the implementation of VC is set-up into existing NHS infrastructure [17]. In that, professionals perceive a need for seamless and reliable software, in order for it to reach its full potential [17, 52]. Furthermore, there is a professional need to use VC and TC interchangeably and not to feel forced to choose one type of consultation over the other, in that simultaneously they can produce streamline results [53]. Other professionals report that they are reluctant to use VC as they feel it reduces provision in their remote service area and VC was not an adequate option for their patients [46]. Contrary to this, further UK research suggests that VC has improved the quality of care in some remote areas. Overall, professionals display varying levels of acceptability towards VC [54], however when certain provisions are put in place to reduce professionals' concerns, it generally increases clinical confidence regarding changes in practice, and therefore they are more likely to perceive VC as more positive, and therefore engage with it.

Video Consulting Training

In addition to the provisions suggested above, regarding the enhancement of professional buy-in, the appropriate delivery of VC training is equally deemed as an important requirement [55]. Professionals suggest that initial VC training, and the ability to have follow-up training sessions would ultimately reduce reluctance and resistance, which in turn would increase VC uptake by way of increasing the confidence of professionals [54- 57].

Professionals report initial concerns that without the physical proximity within VC, their skills such as communication, verbal and nonverbal language, and empathy and patience would not reflect via VC as well as they do via FTF. Professionals suggest that with VC training their skillset could be adapted appropriately to meet the needs of VC use [57]. Furthermore, with relevant aspects being undertaken, healthcare professionals can be trained and therefore moulded into proficient VC users [58]. The support and practice from VC training could also improve upon their existing skill set to be more tailored towards VC use [29]. Finally, for rapid roll-out of VC such as the experience of the pandemic, VC-specific training is required to be accessible to professionals immediately [29]. Professionals who have received VC training highlight the importance of VC training and its positive impact on their VC use [46, 55]. For example, professionals using the 'Attend Anywhere' platform in Scotland were provided with VC training, and findings shows that the training allowed them to extend their roles within VC use [46]. Research also suggests the need for VC training programmes for both professionals and patients, in that it would greatly improve VC uptake as it would increase overall confidence and knowledge levels [59].

Patients Perception of VC

International data has demonstrated that VC has enabled an increase in patient access to healthcare in recent years [60]. It has become increasingly more popular with its users and more accessible to both professionals and

patients, yet this is more evident among patients, and their 'want' for it [60]. From the perspective of the patient, an important aspect of the 'want or need' for VC, is that of the benefits it can offer them, such as being more convenient, and saving them time and travel. For patients, the need to be able to establish and build rapport with professionals comparable to a FTF consultation is similarly considered important [61]. Therefore, it's essential that the benefit of convenience and the ability to build rapport are equally inclusive in the delivery of patient care.

Research shows that for patients, VC is reported as highly satisfactory. For example, research conducted in New Zealand during the COVID-19 pandemic, reported 91% satisfaction for the use of VC compared to 86% for the use of TC. Satisfaction levels for FTF did remain the highest at 92%. Nevertheless, 36% of patients expressed concerns surrounding the lack of physical contact, and concerns around VC meeting all of their needs [62]. However, the additional benefits produced from VC such as savings of time and money, a reduction in travel time and exposure to possible COVID-19 infection, reduced level of stress [62], and others reported increased access for those with mobility or mental health problems [63].

Risk, Safeguarding and the issue of Safety

There is an extensive body of evidence highlighting the positive impacts of VC and how it can be best utilised [10, 64, 65] however, an important clinical consideration within the use of VC is 'risk' and how this is managed. On one hand, when considering COVID-19, the risk of infection has decreased significantly because of the use of VC [66]. However, there is grave concern that some clinical aspects may be overlooked or missed, something that is considered by some as more likely in VC than FTF [67]. There are also issues around patients feeling as though they cannot access FTF now VC is available, and therefore it is important to ensure patients are made aware that even though the pandemic has led to inevitable changes in healthcare, this does

not mean that healthcare practices have stopped offering FTF when needed, as this itself may lead to further risk and subsequent consequences [68, 69].

Furthermore, VC consultations need to be conducted in appropriate settings to safeguard patients. Despite the remote attendance of VC, both professionals and patients should obtain a confidential space to hold the VC [70]. A common issue identified during the pandemic, due to the fast-paced roll out of VC across many countries, was the limited accessibility of this space, particularly for professionals, and the adequate amount of resources available to use VC appropriately, such as headphones to ensure patient confidentiality [70]. In addition, there is also a need for professionals to have appropriate guidance on how to conduct VC to ensure safety and safeguarding are adhered to in the same way as FTF consultations [71].

Examples of this may include, patients not disclosing their health problems including the severity of symptoms, or issues surrounding privacy and whether domestic violence, for instance, is an additional consideration. These may make it difficult for professionals to assess the risk and safety of the patient in the same as they would FTF [38].

It is also important to ensure that all patients can access digital healthcare such as VC, and to consider how best to engage with patients in digitally excluded areas, or with patients with difficulties in literacy and language, to ensure that all socioeconomic groups are equally supported, and to ensure patients are not put at risk of missing out on healthcare because of these barriers [72, 73].

On the contrary, previous research has suggested that VC can reduce risks in some patients, such as surrounding older adults, whereby VCs allowed them to have a better interaction [69]. In rural areas, VC has been less risk adverse, ultimately improving patient health outcomes [71].

Clinical Use & Speciality

The use of VC in different clinical settings and across specialities is considered an under-researched area of VC, in that previous research has generally relied on sample selections of patient groups most likely to respond well to VC – thus providing a bias view of VC in ‘real life’. There are numerous studies demonstrating a high level of suitability and acceptability, to name but a few e.g Ophthalmology in Primary Care report VC far more superior than TC [74]; Dentistry report high patient satisfaction [75, 76]; asthma clinics report usefulness in features such as screen-share and treatment plans; and Physiotherapy report to contribute to improved bodily movements and functioning [67].

However, as mentioned, within VC literature, particularly when targeting speciality specific data, the findings often differ from one study to another, and from one country to another, thus providing an ambiguous representation on where VC clinically works, and where it doesn't work, which casts considerable doubt on its longer-term use and value. Therefore, more in-depth and specialty-specific research is needed across a wider distribution of healthcare settings and countries to ensure that VC is tested in all possibilities (rather than a selected sample). Fortunately, the COVID-19 pandemic presented an ideal playing field to test VC to these limits, thus presenting a much stronger position to provide understanding and evidence-base for both the UK and internationally.

Summary

Overall, VC has enabled the delivery of healthcare to continue during the COVID-19 pandemic, providing both professionals and patients the reassurance and confidence that a wider range of consultations, aside from FTF alone, can produce positive outcomes. While VC was slow in progressing initially, particularly in the UK [20, 21], VC rapidly transitioned across the

healthcare and the NHS [2]. During the COVID-19 pandemic VC platforms such as 'Attend Anywhere' and 'AccuRx' have dominated healthcare delivery in the UK, by being implemented across many care sectors and specialities and thus allowed an extraordinarily rapid scale-up of VC within the NHS, and ability to robustly evaluate its use and value [42]. Professional reluctance is demonstrated in previous literature, but since COVID-19, the general consensus is that VC can enable professionals to support their patients in positive ways, and this has increased confidence in digital healthcare [47]. To ensure the best possible use of VC, VC-specific training is suggested to be implemented alongside VC rollout, for both professionals and patients to gain a better understanding and knowledge-base of VC but also to ensure safeguarding and risks are best adhered to [54, 71]. It is important to note that while technology is expanding continuously, for some patient's technology and in particular technology for VC is not readily accessible, or that VC may not be suitable for every patient or clinical service, however, more work in this area is needed [60, 73]. In addition, previous literature is largely sample selected to suit VC, and therefore to get a more accurate representation of VC, and to understand where it clinically works, and doesn't work, more research is needed across a wide range of healthcare settings, specialities and countries.

References

- 1) Dinesen, B., Nonnecke, B., Lindeman, D., Toft, E., Kidholm, K., Jethwani, K., & Gutierrez, M. (2020). Personalized telehealth in the future: a global research agenda. *Journal of Medical Internet Research*, 18(3), e53.
- 2) Coleman, T. (2000) Using video-recorded consultations for research in primary care: advantages and limitations. *Family Practice*, 17(5), 422-427.
- 3) Liu N, Huang R, Baldacchino T, Sud A, Sud K, Khadra M, Kim J. (2020). Telehealth for Noncritical Patients With Chronic Diseases During the COVID-19 Pandemic. *Journal of Medical Internet Research*. 22(8):e19493.
- 4) Jazieh AR, Kozlakidis Z. (2020). Healthcare transformation in the post-coronavirus pandemic era. *Frontiers in Medicine*. Jul 28;7:429.
- 5) Atherton, H., Brant, H., Ziebland, S., Bikker, A., Campbell, J., Gibson, A., ... & Salisbury, C. (2018). The potential of alternatives to face-to-face consultation in general practice, and the impact on different patient groups: a mixed-methods case study. *Health Services and Delivery Research*, 6(20).
- 6) Willman, A. (2020). A service user evaluation of eConsult use by Defence Primary Healthcare Primary Care Clinicians using a mixed-method approach. *medRxiv*.
- 7) Luo, C., Sanger, N., Singhal, N., Pattrick, K., Shams, I., Shahid, H., ... & Puckering, M. (2020). A comparison of electronically-delivered and face to face cognitive behavioural therapies in depressive disorders: A systematic review and meta-analysis. *EClinicalMedicine*, 24, 100442.
- 8) Gray, R. T., Sut, M. K., Badger, S. A., & Harvey, C. F. (2010). Post-operative telephone review is cost-effective and acceptable to patients. *The Ulster Medical Journal*, 79(2), 76.
- 9) Van Galen, L. S., & Car, J. (2018). Telephone Consultations. *BMJ*, 360.
- 10) Donaghy, E., Atherton, H., Hammersley, V., McNeilly, H., Bikker, A., Robbins, L. & McKinstry, B. (2019). Acceptability, benefits, and challenges of video consulting: a qualitative study in primary care. *British Journal of General Practice*, 69(686), e586-e594.
- 11) Wade, V. A., Karnon, J., Elshaug, A. G., & Hiller, J. E. (2010). A systematic review of economic analyses of telehealth services using real time video communication. *BMC Health Services Research*, 10(1), 233.
- 12) Connor, M. J., Winkler, M., & Miah, S. (2020). COVID-19 pandemic—is virtual urology clinic the answer to keeping the cancer pathway moving? *BJU International*.
- 13) Ramalho, R., Adiukwu, F., Bytyçi, D. G., El Hayek, S., Gonzalez-Diaz, J. M., Larnaout, A., ... & Ransing, R. (2020). Telepsychiatry during the covid-19 pandemic: development of a protocol for telemental health care. *Frontiers in psychiatry*, 11.
- 14) O'Hagan, L. (2020). Doing telephone consultations in my socks. *Journal of primary health care*, 12(2), 113-114.
- 15) Yi, X., Jamil, N. A. B., Gaik, I. T. C., & Fee, L. S. (2020). Community nursing services during the COVID-19 pandemic: the Singapore experience. *British Journal of Community Nursing*, 25(8), 390-395.
- 16) Seguí, F. L., Vidal-Alaball, J., Castro, M. S., García-Altés, A., & Cuyàs, F. G. (2020). General Practitioners' Perceptions of Whether Teleconsultations Reduce the Number of Face-to-face Visits in the Catalan Public Primary Care System: Retrospective Cross-Sectional Study. *Journal of medical Internet research*, 22(3), e14478.

- 17) Leng, S., MacDougall, M., & McKinstry, B. (2016). The acceptability to patients of video-consulting in general practice: semi-structured interviews in three diverse general practices. *Journal of Innovation in Health Informatics*, 23(2), 493-500.
- 18) Armfield, N. R., Bradford, M., & Bradford, N. K. (2015). The clinical use of Skype — For which patients, with which problems and in which settings? A snapshot review of the literature. *International Journal of Medical Informatics*, 84(10), 737-742.
- 19) Babbage, D. R., van Kessel, K., Terraschke, A., Drown, J., & Elder, H. (2020). Attitudes of rural communities towards the use of technology for health purposes in New Zealand: a focus group study. *BMJ Open*, 10(6), e037892.
- 20) Devore, P. A., Paulich, M. J., Talkington, S. G., Floersch, N. R., Barton, P. L., & Neal, S. (2007). The slow pace of interactive video telemedicine adoption: the perspective of telemedicine program administrators on physician participation. *Telemedicine and E-Health*, 13(6).
- 21) Harvey, S., Peterkin, G., & Wootton, R. (2010). Eleven years of experience with low-bandwidth telemedicine in a nurse-led rural clinic in Scotland. *Journal of Telemedicine and Telecare*, 16(8), 417-421.
- 22) Scott, J., & Hill, M (August, 2020) The Health Foundation. Frontline Insights on the Rapid Implementation of Video Consultations. What is Needed Now? Retrieved at: <https://q.health.org.uk/news-story/video-consultations/>
- 23) Michie, S., Yardley, L., West, R., Patrick, K., & Greaves, F. (2017). Developing and evaluating digital interventions to promote behavior change in health and health care: recommendations resulting from an international workshop. *Journal of medical Internet research*, 19(6), e232.
- 24) Haberlin, C., O'Dwyer, T., Mockler, D., Moran, J., O'Donnell, D. M., & Broderick, J. (2018). The use of eHealth to promote physical activity in cancer survivors: a systematic review. *Supportive Care in Cancer*, 26(10), 3323-3336.
- 25) Müller, A. M., Maher, C. A., Vandelanotte, C., Hingle, M., Middelweerd, A., Lopez, M. L., ... & Poppe, L. (2018). Physical activity, sedentary behavior, and diet-related eHealth and mHealth research: bibliometric analysis. *Journal of medical Internet research*, 20(4), e122.
- 26) Sherifali, D., Nerenberg, K. A., Wilson, S., Semeniuk, K., Ali, M. U., Redman, L. M., & Adamo, K. B. (2017). The effectiveness of eHealth technologies on weight management in pregnant and postpartum women: systematic review and meta-analysis. *Journal of medical Internet research*, 19(10), e337.
- 27) Department of Health (2019) The NHS Long Term Plan. www.longtermplan.nhs.uk
- 28) Fisher, R., & Asaria, M. (2020). How might COVID-19 affect the number of GPs available to see patients in England? *Health Foundation*.
- 29) Murphy, M., Scott, L., Salisbury, C., Turner, A., Scott, A., Denholm, R., & Horwood, J. (2020). The implementation of remote consulting in UK primary care following the COVID-19 pandemic: A mixed-methods longitudinal study.
- 30) CWTC Cymru Pilot Study. Retrieved at: <https://www.rcpsych.ac.uk/members/devolved-nations/rcpsych-in-wales/covid-19-for-psychiatrists-in-wales>
- 31) CWTC Cymru Toolkit: Step by Step Guide to using Video Consulting in Telepsychiatry (2020). Retrieved at: <https://www.rcpsych.ac.uk/docs/default-source/members/divisions/wales/cwtch-ready-set-go-toolkit.pdf>
- 32) Technology Enabled Care (TEC) Cymru. Retrieved at: <https://digitalhealth.wales/tec-cymru>
- 33) The NHS Wales Video Consulting Service (2020). Retrieved at: <https://digitalhealth.wales/tec-cymru/vc-service>

- 34) Welsh Government (2020, 7th June). *Digital Services Introduced in NHS Wales during Coronavirus Are Here to Stay* [Press release]. <https://gov.wales/digital-services-introduced-nhs-wales-during-coronavirus-are-here-stay>
- 35) Johns, G., Khalil, S., Ogonovsky, M., & Ahuja, A. (2020). Video consulting contributes to carbon neutral healthcare. *BMJ*, 371.
- 36) Donnelly, J., Miller, A. N., & Strawser, M. G. (2020). Resilience in the face of crisis: Organizational response to developing faculty elearning literacy in a global pandemic. *Journal of Literacy and Technology*, 21(2), 37-55.
- 37) Welsh Government (Sept, 2020) Press release. Aim for 30% of the Welsh workforce to work remotely. Retrieved at: <https://gov.wales/aim-30-welsh-workforce-work-remotely>
- 38) Welsh Government (2019) A Healthier Wales: Long Term Plan for Health and Social Care. Retrieved at: <https://gov.wales/healthier-wales-long-term-plan-health-and-social-care>
- 39) Eaton, L. (2019). The long road to patient co-production in telehealth services. *BMJ*, 366, l4770.
- 40) Thornton, J. (2020). Covid-19: how coronavirus will change the face of general practice forever. *BMJ*, 368.
- 41) Macdonald, G. (2020). Establishing 'Far End' practices in the wake of COVID-19. *BJGP Life*.
- 42) British Government, (2020). *Video Consultations For Secondary Care*. NHS.
- 43) Clarke, G., Pariza, P. and Walters, A., (2020). *How Has COVID-19 Affected Service Delivery In GP Practices That Offered Remote Consultations Before The Pandemic?* The Health Foundation.
- 44) Howgego, G., Sharma, I., & Kalu, P. (2020). The rules for online clinical engagement in the COVID era. *Journal of Plastic, Reconstructive & Aesthetic Surgery*.
- 45) Wherton, J., Shaw, S., Papoutsis, C., Seuren, L., & Greenhalgh, T. (2020). Guidance on the introduction and use of video consultations during COVID-19: important lessons from qualitative research. *BMJ Leader*, leader-2020.
- 46) Wherton, J., & Greenhalgh, T. Evaluation of the Attend Anywhere/Near Me video consulting service in Scotland, 2019-20.
- 47) Reardon, J., Yuen, J., Lim, T., Ng, R., & Gobis, B. (2020). Provision of Virtual Outpatient Care during the COVID-19 Pandemic and Beyond: Enabling Factors and Experiences from the UBC Pharmacists Clinic. *Innovation in Pharmacy*, 11(4), 7-7.
- 48) Newhouse, N., Lupiáñez-Villanueva, F., Codagnone, C., & Atherton, H. (2015). Patient use of email for health care communication purposes across 14 European countries: an analysis of users according to demographic and health-related factors. *Journal of Medical Internet Research*, 17(3), e58
- 49) Donaghy, E., Hammersley, V., Atherton, H., Bikker, A., Mcneilly, H., Campbell, J., & McKinstry, B. (2019). Feasibility, acceptability, and content of video consulting in primary care. *British Journal of General Practice*, 69(suppl 1).
- 50) Thiyagarajan, A., Grant, C., Griffiths, F., & Atherton, H. (2020). Exploring patients' and professionals' experiences of video consultations in primary care: a systematic scoping review. *BJGP open*, 4(1).
- 51) Kennedy, N. R., Steinberg, A., Arnold, R. M., Doshi, A. A., White, D. B., DeLair, W., & Elmer, J. (2020). Perspectives on Telephone and Video Communication in the ICU during COVID-19. *Annals of the American Thoracic Society*, (ja).
- 52) Ventola, C. L. (2014). Mobile devices and apps for health care professionals: uses and benefits. *Pharmacy and Therapeutics*, 39(5), 356.

- 53) Drennan, V. M. (2019). Skill-mix change in general practice. *The British journal of general practice: the journal of the Royal College of General Practitioners*, 69(685), 380-380.
- 54) Sutherland, A. E., Stickland, J., & Wee, B. (2020). Can video consultations replace face-to-face interviews? Palliative medicine and the Covid-19 pandemic: rapid review. *BMJ Supportive & Palliative Care*.
- 55) Greenhalgh, T., Wherton, J., Shaw, S., & Morrison, C. (2020). Video consultations for covid-19.
- 56) Seuren, L. M., Wherton, J., Greenhalgh, T., Cameron, D., & Shaw, S. E. (2020). Physical examinations via video for patients with heart failure: qualitative study using conversation analysis. *Journal of Medical Internet Research*, 22(2), e16694.
- 57) Jiménez-Rodríguez, D., Santillán García, A., Montoro Robles, J., Rodríguez Salvador, M. D. M., Muñoz Ronda, F. J., & Arrogante, O. (2020). Increase in video consultations during the COVID-19 pandemic: Healthcare professionals' perceptions about their implementation and adequate management. *International Journal of Environmental Research and Public Health*, 17(14), 5112
- 58) Portnoy, J., Waller, M., & Elliott, T. (2020). Telemedicine in the Era of COVID-19. *The Journal of Allergy and Clinical Immunology: In Practice*, 8(5), 1489-1491
- 59) Walumbe, J., Belton, J., & Denny, D. (2020). Pain management programmes via video conferencing: a rapid review. *Scandinavian Journal of Pain*, 1 (ahead-of-print).
- 60) Johnston, S., MacDougall, M., & McKinstry, B. (2016). The use of video consulting in general practice: semi-structured interviews examining acceptability to patients. *BMJ Health & Care Informatics*, 23(2).
- 61) Fatehi, F., Martin-Khan, M., Smith, A. C., Russell, A. W., & Gray, L. C. (2015). Patient satisfaction with video teleconsultation in a virtual diabetes outreach clinic. *Diabetes Technology & Therapeutics*, 17(1), 43-48.
- 62) Imlach, F., McKinlay, E., Middleton, L., Kennedy, J., Pledger, M., Russell, L., & McBride-Henry, K. (2020). Telehealth Consultations in General Practice During a Pandemic Lockdown: Survey and Interviews on Patient Experiences and Preferences.
- 63) Sellars, H., Ramsay, G., Sunny, A., Gunner, C. K., Oliphant, R., & Watson, A. J. (2020). Video Consultation for new colorectal patients. *Colorectal Disease*, 22(9), 1015-1021.
- 64) Harvey, J. B., Yeager, B. E., Cramer, C., Wheeler, D., & McSwain, S. D. (2017). The impact of telemedicine on pediatric critical care triage. *Pediatric Critical Care Medicine*, 18(11), e555-e560.
- 65) Li, W., Yang, Y., Liu, Z. H., Zhao, Y. J., Zhang, Q., Zhang, L., ... & Xiang, Y. T. (2020). Progression of mental health services during the COVID-19 outbreak in China. *International Journal of Biological Sciences*, 16(10), 1732.
- 66) Williams, A. M., Kalra, G., Commiskey, P. W., Bowers, E. M., Rudolph, B. R., Pitcher, M. D., ... & Waxman, E. L. (2020). Ophthalmology practice during the coronavirus disease 2019 pandemic: The University of Pittsburgh Experience in promoting clinic safety and embracing video visits. *Ophthalmology and Therapy*, 1.
- 67) Aggarwal, D., Ploderer, B., Vetere, F., Bradford, M., & Hoang, T. (2016, June). Doctor, can you see my squats? Understanding bodily communication in video consultations for physiotherapy. In *Proceedings of the 2016 ACM conference on designing interactive systems* (pp. 1197-1208).
- 68) NHS Digital (2020) Appointments in general practice — March 2020. 26 May 2020. <https://digital.nhs.uk/data-and-information/publications/statistical/appointments-in-general-practice/march-2020>
- 69) Khan, N., Jones, D., Grice, A., Alderson, S., Bradley, S., Carder, P., & Neal, R. (2020). A brave new world: the new normal for general practice after the COVID-19 pandemic. *BJGP Open*.

- 70) Jubraj, B. (2020). Remote consultations: how pharmacy teams can practise them successfully. *Evaluation*, 14, 34.
- 71) Wade, V. A., Elliott, J. A., & Hiller, J. E. (2012). A qualitative study of ethical, medico-legal and clinical governance matters in Australian telehealth services. *Journal of Telemedicine and Telecare*, 18(2), 109-114.
- 72) Greenhalgh, T., Shaw, S., Wherton, J., Vijayaraghavan, S., Morris, J., Bhattacharya, S., & Hodkinson, I. (2018). Real-world implementation of video outpatient consultations at macro, meso, and micro levels: mixed-method study. *Journal of Medical Internet Research*, 20(4), e150.
- 73) Jones, D., Neal, R. D., Duffy, S. R., Scott, S. E., Whitaker, K. L., & Brain, K. (2020). Impact of the COVID-19 pandemic on the symptomatic diagnosis of cancer: the view from primary care. *The Lancet. Oncology*, 21(6), 748.
- 74) Kalra, G., Williams, A. M., Commiskey, P. W., Bowers, E. M., Schempf, T., Sahel, J. A., & Fu, R. (2020). Incorporating Video Visits into Ophthalmology Practice: A Retrospective Analysis and Patient Survey to Assess Initial Experiences and Patient Acceptability at an Academic Eye Center. *Ophthalmology and Therapy*, 1-14.
- 75) Gladwin, L. (2020). From face-to-face to face-time: is the future of dental appointments virtual? *British Dental Journal*, 229(5), 301-301.
- 76) Rahman, N., Nathwani, S., & Kandiah, T. (2020). Teledentistry from a patient perspective during the coronavirus pandemic. *British Dental Journal*, 1-4.