



## Telemedicine in the Management of Cancer Health

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### Abstract

The use of technology in the healthcare sector has recently increased during the pandemic. In recent months, due to COVID-19, alternative healthcare delivery methods, i.e., telemedicine or virtual treatment, have gained popularity. Telemedicine as a mode of delivery of health care services, where distance and in-person visits to hospital appears to be very limited, plays a significant role in delivering healthcare and providing adequate cancer care and surveillance in patients. The use of technology in the health sector is known, but with COVID-19 pandemic, its use has accelerated with newer healthcare innovations. Its extensive use in clinical care settings, especially in cancer care, provides an alternative solution to work more ingeniously and offer effective communication methods despite various restrictions.

**Keywords:** Telemedicine; Healthcare; Communication; Cancer care; COVID-19

### Introduction

COVID-19 has affected nearly 120 million people globally, resulting in over 2.6 million deaths [1]. Statistics from the Department of Health in the United Kingdom indicate an excess of 4.2 million COVID-19 positive patients with over 126,000 deaths [1]. The nature of this virus has forced cities across the world to close. This has resulted in the paralysis of normality in almost all spheres of life. Patients with co-morbidities and those with underlying immunosuppression, such as cancer patients and the elderly, are at a higher risk of contracting this virus.

The current virus situation is continuously evolving. There are new laws and regulations on social distancing, which are updated almost every day. Regular government updates have discouraged patients from using public transport and from hospital visits unless necessary. All this has resulted in a drastic increase in waiting times. According to The Guardian newspaper; approximately 5 million patients on the NHS waiting lists to be seen by specialists (in March 2021). While this number includes the whole range of clinical conditions, there would be patients with potential cancers among these patients ostensibly.

The use of technology in the health sector is not new. COVID -19 has led to accelerated innovations within the health sector at a pace of change not heard before. Some of these changes involve increasing the use of technology to free up clinician time, devolve staff function to technology and empower patients. This article discusses the use of technology and telemedicine as a sustainable option in the care of patients with cancer, more so following the acute phase of the pandemic.

### A modern healthcare

The current pandemic has had a significant impact on the standard face-to-face oncological service delivery model. Most cancers, especially breast cancers, rely on multiple healthcare professionals interacting with patients for an optimum outcome. This is relevant in both acute care settings and cancer survivorship following acute care. All of this is particularly challenging in the elderly population and patients living in remote and rural areas. The first consultation is unique for most patients and usually has a lasting impact on their psyche [14]. This process becomes even more testing in patients belonging to ethnic minorities with cultural, language and literacy barriers.

In recent months, due to COVID-19, alternative healthcare delivery methods, i.e., telemedicine or virtual treatment, have gained popularity. The consortium NICE, BASO, and ABS published guidelines for breast cancer management soon after WHO declared COVID-19 a pandemic [2-5].

The World Health Organization describes telemedicine as the delivery of health care services, where distance appears to be a critical factor by all health care professionals using technologies

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to access information and communication and improve patient outcome, all in the interest of advancing healthcare [6].

There are four basic types of telemedicine today [7].

**a.** Store and Forward (Asynchronous telehealth) for gathering information and images: This method is used in rural areas between a primary care practitioner or nurse practitioner who would consult with a specialist in another location outside of real-time.

**b.** Real-time (synchronous telehealth) for consultation services:

Also known as synchronous video, live videoconferencing is a live, two-way interaction between a person and a healthcare provider using audio-visual telecommunications technology.

**c.** Remote/self-monitoring: This uses personal health and medical data from a patient in one location transferred electronically to a nurse or physician in a different place for monitoring purposes.

**d.** m-Health (mobile): This uses mobile communications devices, such as Smartphone's and tablet computers, and uses applications on these devices, which can do almost anything to support healthcare.

### Strengths and challenges facing telemedicine

An unassuming solution to tackle the COVID backlog of cancer patients is to grow the workforce by employing more staff or make the current staff work harder. Both of these solutions demand more resources and are not easy to implement. It could also affect current staff morale. An alternative solution is to work smarter within the existing resources' limits by working in partnership with technology. COVID-19 pandemic has accelerated these changes, and it would be wise to discuss not reverting completely too traditional ways of working.

The use of telemedicine in the health sector has several advantages. Foremost among these is reducing the time interval between referral and hospital clinical appointment, which reduces the waiting times [8]. Hospital outpatient follow-up appointments for cancer patients could be 'digital first' with an option of escalation to 'face to face when needed. The digital consultation option would have an incentive for more extended consultation with a specialist.

Similarly, service provision for patients with non-urgent queries could continue digitally despite restrictions. These include routine follow-up and prescribing medications such as endocrine treatment.

Digital communication is also valuable for remote breast cancer surveillance, such as providing results on follow-up mammograms or MRI Scans *via* emails or telephone consultations [10,21]. Virtual consultation from their homes gives a sense of relief and confidence to the patient. This could enable the entire family to be present for a consultation, contribute to the shared decision-making process, and reduce multiple hospital visits. This is especially important in the elderly and vulnerable population, where a cross-disciplinary plan is needed due to complex medical issues. This is difficult in physical outpatient clinics due to limited space and social distancing rules leading to restricted patient and relatives' numbers. Virtual consultation could reduce anxiety levels, especially in those with underlying mental health issues and depression [18].

The role of telemedicine in Multidisciplinary Team meetings (MDTM) and medical education has been particularly vital [20]. The concept of virtual MDTM is not new and has picked up pace during pandemic. Multiple members of the multidisciplinary teams could

provide their input for optimum patient management. The digital environment will promote cross-organization work and hybrid working, enabling the team members to be available for the patients.

Many universities/institutions are now closed or are not undertaking training in the traditional (face to face) manner and have left trainees and professionals without adequate mentorship and training skills. Telemedicine in virtual classes, webinars and even examinations has enabled mentors/teachers to provide education in a structured format, thereby enhancing its role in promoting advanced patient healthcare. This has also helped medical professionals to keep their skills and knowledge up to date.

Telemedicine has a broader role in environmental preservation too. With the human carbon footprint increasing each year, virtual consultations/telemedicine can reduce the number of visits to the hospitals, reduce parking-related issues, traffic congestion, and reduce costs of maintenance. All this contributes significantly to reducing our carbon footprint [19].

Telemedicine and virtual working are not without their problems. The most significant disadvantage is Its reliance on stable external and internal infrastructure for uninterrupted use. It requires a set bandwidth and network capability for performance-based stream for videoconferencing [15]. Additionally, broadband and the telecommunication service should be fit for purpose meeting technological standards [8]. This issue can become more apparent in rural communities with limited software. Lack of real-time delivery of information in these digitally excluded populations can cause unnecessary delay [16]. This would mean rigorously enforced technological standards across the NHS, including rural communities.

A Secure and robust IT system is an essential core component for the delivery of good remote healthcare. A secure system needs to uphold General Data Protection Regulation (GDPR), which is vital for patient confidentiality [17]. The General Medical Council's ethical guidance on remote consultations clearly states the physician's responsibilities in upholding and using confidential patient information over devices. However, this requires a designated regulatory body, which can ensure correct [12] use of patient information and ensure NHS systems' security. Patients could be given control of their medical records and data, and the NHS staff educated about patient privacy in the new digital environment.

A group of 'digitally excluded' individuals may not have the necessary skills or the knowledge to use this technology, even if freely available. These individuals may sometimes be dependent on others, thereby limiting technology use in these groups. In such individuals, the patients and their caregivers could take a shared decision to stick to traditional methods of meeting.

This technological advancement brings an inherent fear of losing the personal touch in a doctor-patient relationship. Empathy constitutes an essential ingredient in tailored healthcare delivery. A comforting gesture to the patient, such as a handshake or a hug, is a vital nonverbal clue that instills confidence in the patient. This ensures a smooth delivery and exchange of information between patients and healthcare professionals [11]. The use of non-verbal forms of communication (which can account make up for nearly 80 percent of total communication in specific communities) such as nodding, leaning forward, or minimal eye contact can influence patient satisfaction. These non-verbal cues are challenging to show digitally. A combination of virtual and face to face meetings could

ensure that the 'human touch' is not lost in the most crucial meetings and with particular communities.

Quarantine for patients with cancer could be exceedingly tricky and distressing. Limited interaction with other people and consequent lack of emotional support can profoundly affect their psychology. These limitations could get intensified with poor digital communication or without face-to-face interaction [9]. Patients have been increasingly linked to digital support groups, which has picked up an accelerated pace during the pandemic. The patient can be taught to look out for significant symptoms and signs for urgent self-referral if needed. Remote monitoring could empower patients to be responsible for their health.

In conclusion, modern healthcare could be co-designed with patients and staff to streamline workflow issues and reduce inequality of care. Staff and patients would remain the end-arbiter of the new technology with quick changes and fast turnover.

## Conclusion

Telemedicine is a sustainable solution and a substitute for traditional practice in these exceptional times and beyond. However, its lack of personal interaction prevents us from recommending it as a total replacement. A mature discussion on a 'blended approach' with a mixture of face to face and virtual appointments is required. However, should there be another pandemic; the medical community would be better prepared to provide healthcare and education through telemedicine.

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