ABSTRACT

Objective This practical approach to the use of telehealth aims to offer clinicians a framework for video and telephone interactions with children and families accessing healthcare.

Design Using a standardised case to illustrate how video and telephone consultations can be used during the COVID-19 pandemic.

Setting The emergence of 2019 novel coronavirus (COVID-19) is having a massive impact on society. Routine face-to-face consultations were reduced to reduce potential spread of the virus. Clinicians still need to provide ongoing safe care, particularly for more complex patients. Telehealth is the delivery of healthcare services across geographical barriers using information and communication technologies to improve health outcomes.

Intervention In this article, we describe a ‘How to’ approach to using virtual consultations based on our experience and a review of expert guidelines.

Conclusion Virtual consultations can be more convenient and have the potential to improve access for patients. Many have embraced these technologies for the first time during this pandemic. In this article, we describe a ‘How to’ approach to using virtual consultations based on our experience and a review of expert guidelines.

INTRODUCTION

The emergence of novel coronavirus (COVID-19) is having a massive impact on society. Routine face-to-face consultations have been suspended to reduce potential spread of the virus. Clinicians still need to provide ongoing safe care, particularly for more complex patients. Telehealth is the delivery of healthcare services across geographical barriers using information and communication technologies to improve health outcomes. Virtual consultations can be more convenient and have the potential to improve access for patients. Many have embraced these technologies for the first time during this pandemic. In this article, we describe a ‘How to’ approach to using virtual consultations based on our experience and a review of expert guidelines.

THE CASE

Annie is 14 years old and well known to the asthma clinic. She is due for clinic review, but they cannot meet face to face because of COVID-19 restrictions.

Annie’s mother is sent an appointment letter for a virtual consultation, with detailed instructions on how to access the service and advised to have inhalers at hand.

PREPARATION FOR VIRTUAL CONSULTATION

A structured approach to video consultation for parents and clinicians is detailed in figures 1 and 2. Prior to commencing a virtual consultation, it is important that the parent/guardian is sent clear instructions on how to access the web-based platform you are using for the video consultation. They must be aware who is contacting them and when. Ideally, the video consultation should be carried out via a doubly encrypted platform to ensure confidentiality. Consideration should be made to data protection issues. Local policies need to be developed and followed with regards to this. We suggest using a generic email address or telephone number. The parent/guardian should be supplied with the specific contact details of the team for future concerns.

Consider what preparation parents can make prior to the consultation, for example;
Weigh the child on home scales (enabling more accurate prescription).

Medications, for example, inhalers at hand

Setting up toys or activities to observe certain movements.

Complex patients may have medical equipment available, for example, physiotherapy adjuncts, mobility aids, saturation monitors and so on.

Prior to the clinic, the asthma team review her notes and electronic records. They prepare a personalised asthma action plan to go through with her parent during the call.

It is essential to acknowledge that video consultation is a limited tool, but it can provide some useful clinical information in lieu of the usual physical examination in a face-to-face consultation.

Advise the parent/guardian to choose a well-lit quiet location. During the consultation, you should explain clearly if an area of the child’s body needs closer observation. The parent/guardian may also require direction in positioning their video device appropriately. Video consultation also allows other aspects of the child’s care to be assessed such as physiotherapy or inhaler technique.

The consultant is able to ‘eye-ball’ Annie. There are no signs of respiratory distress. Annie does not need to come to hospital immediately.

Case continues

Annie’s mother, Lisa, takes the video call from the consultant. She is happy to proceed with the consultation. Annie has had an increasing cough over the past week, which is waking her at night. She becomes breathless and wheezy on minimal exertion. She needs her reliever inhaler both day and night.
The consultant then asks Annie to demonstrate how she takes her inhaler and notes poor inhaler technique.

**MANAGEMENT PLAN**

Video consultation allows a treatment plan to be discussed and agreed. This can be summarised and parental understanding checked. The clinician may also interact with the child and check their understanding where appropriate. Accompanying information such as medication leaflets, information packs or links to websites can be mailed or emailed after the consultation.

**Case continues**

The consultant teaches Annie how inhalers work and how to use them. Annie, her Mum and her consultant agree on a plan. The consultant sends a prescription for a 3-day course of oral steroids directly to the patients general practitioner (GP) and concludes by summarising the management plan. She discusses signs of deterioration and reminds Annie’s mother that if things get worse, they should attend hospital for immediate assessment. The consultation is documented in the notes, and a full clinic letter is sent to the GP.

The following week, the asthma nurse specialist conducts a follow-up video consultation to ensure symptoms are settling and to further observe and reinforce the inhaler technique. Annie’s symptoms have settled, and her improved inhaler technique has been maintained.

**DISCUSSION**

Information technology has the potential to improve patient care by removing barriers to patient access, reducing school and parental work absences and re-enforcing patient education. It may also be more economically viable than a face-to-face encounter. A 2015 Cochrane review noted similar health outcomes for chronic patients receiving remote monitoring or video-conferencing compared with in-person or telephone reviews. Another systematic review of telehealth services found that all 32 included studies showed good levels of patient satisfaction.

**Challenges with technology**

Using technology to assess patients is not without challenges. An infrastructure to train and support administrative and clinical staff is essential. Safeguards for privacy and security must be built in. Parents may not be able to access this technology. Low-income families, or those who have low digital literacy, may be disadvantaged. It may be difficult to arrange for those children who require an interpreter, have a complex family arrangement or have social work input.

Employing technology relies on both doctor and carer having adequate operational knowledge and the ability to deal with problems should they arise. A poor internet connection, time delay in transmission or simply lacking the non-verbal clues that regulate usual conversation can result in difficulty transmitting information. The disjointed conversation that ensues could lead to frustration on both sides.

As paediatricians, we analyse the subjective assessment of children by their parents in our history taking and balance this with our examination findings. In virtual consultations, we are reliant on thorough history taking alone. Using video consultation permits a limited clinical assessment. However, we must acknowledge that we will be missing information that only face-to-face assessment can provide. Importantly, virtual consultations may also limit our opportunity to engage with the child directly. This is particularly important for the adolescent patient who we want to empower to manage their chronic disease or the younger child whose social communication skills we want to assess.

A delayed diagnosis is reported as one of the most common complaints in litigation cases involving telehealth. Multiple calls should be considered a red flag. Have a low threshold for seeing younger children (especially those under 2 years) face to face.

By creating guidance on risk management and patient confidentiality, establishing protocols for triage of calls and standardising documentation through pro formas, errors may be prevented (Figure 3). It is important to allocate as much time to a virtual consultation and as much diligence to documentation as with a face-to-face consultation (Figure 4). Strong ‘safety-netting’ should be established by giving guidance on how to recognise and manage deterioration.

For clinicians in training, there are additional difficulties. Virtual consultations work best when the clinician and patient have a pre-existing relationship. It may be even more difficult for a trainee to establish a rapport through a virtual consultation, particularly without the aid of non-verbal cues to demonstrate qualities such as empathy and to assess if the parent is truly satisfied by the end of the assessment.
CONCLUSION
COVID-19 precautions have led to virtual consultations being established throughout paediatrics. Many are considering using these technologies beyond the pandemic as part of the ‘new normal’. It is convenient and, when used correctly, has the potential to enhance the support provided to families.6

Attention must be paid to developing an infrastructure to support and train staff, protocols should be created to ensure that consultations are handled in a safe manner and documentation could be standardised to encourage thorough history taking.8 Rigorous processes should be established to prevent a delay in diagnosis and the patient receiving the treatment they require.

What is already known on this topic
- Telehealth is the delivery of healthcare using information and communication technologies.
- The use of telehealth has increased during the COVID-19 pandemic.

What this study adds
- An approach to the use of telehealth in children’s healthcare during the COVID-19 pandemic.
- A practical framework for telehealth consultations in children’s healthcare.

Contributors CTL and JM developed the concept for the article and contributed to writing and review. TB provided input to both writing and medical education perspective. NG and GS developed the article further from a trainee perspective adding checklists and flow charts and revising the format and added an appropriate case discussion. All authors were involved in the final review of the article.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competition of interests None declared.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; externally peer reviewed.

This article is made freely available for use in accordance with BMJ’s website terms and conditions for the duration of the covid-19 pandemic or until otherwise determined by BMJ. You may use, download and print the article for any lawful, non-commercial purpose (including text and data mining) provided that all copyright notices and trade marks are retained.

ORCID ID
Claire Teresa Lundy http://orcid.org/0000-0001-9657-353X

REFERENCES