



PRACTICE POINTER

Video consultations in primary and specialist care during the covid-19 pandemic and beyond

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What you need to know

- Video consultations in healthcare present an approximation of face-to-face interaction and are a “visual upgrade” of widely used telephone consultations
- Evidence for the effectiveness of video consultations is scarce, but points towards effectiveness, safety, and high satisfaction in patients and healthcare providers
- Be prepared to switch from a video to a telephone or in-person consultation, depending on technical, patient, or clinical factors

Even before the covid-19 pandemic, virtual consultations (also called telemedicine consultations) were on the rise, with many healthcare systems advocating a digital-first approach.¹⁻⁷ At the start of the pandemic, many GPs and specialists turned to video consultations to reduce patient flow through healthcare facilities and limit infectious exposures.⁸⁻¹⁶ Video and telephone consultations also enable clinicians who are well but have to self-isolate, or who fall into high risk groups and require shielding, to continue providing medical care.¹⁷⁻¹⁹ The scope for video consultations for long term conditions is wide and includes management of diabetes, hypertension, asthma, stroke, psychiatric illnesses, cancers, and chronic pain.²⁰⁻²² Video consultations can also be used for triage and management of a wide range of acute conditions, including, for example, emergency eye care triage.²³⁻²⁵ This practice pointer summarises the evidence on the use of video consultations in healthcare and offers practical recommendations for video consulting in primary care and outpatient settings.

Evidence for video consultations

Evidence about patient outcomes, cost effectiveness, safety, technical issues, impact of video consultations on healthcare delivery, and quality of consultations is mixed and mainly from small studies.²⁰⁻²¹⁻²³⁻²⁶⁻³⁰ The few randomised trials that have been conducted focus on the use of video consultations in hospital outpatient clinics for patients with chronic conditions. They generally report that video consultations led to high satisfaction among patients and clinicians; no difference was seen in disease progression or service use; and no long term or reliable evidence was available on harms and lower transaction costs compared with face-to-face consultations.³¹⁻³⁴ In general practice and acute care, no randomised trial evaluations of video consultations have been recorded. A non-randomised

trial comparing video with telephone and face-to-face consultations in UK primary care reported no difference in terms of consultation length, content, and quality compared with telephone consultations.³⁵⁻³⁶ However, both forms of remote consultations were seen as less “information rich” than face-to-face consultations, and technical problems were common.³⁵⁻³⁶ In addition, we could not find meaningful evidence to inform clinicians on when to use phone or video consultation.

Evidence on patient preferences for, and satisfaction with, video consultations is highly favourable, but stems from selected populations that are often chronically ill but stable.¹⁸⁻³⁷ Doctors’ attitudes towards video consultations were mixed, recognising possible benefits of video versus telephone consultations by providing visual cues and easier rapport building, but also highlighting concerns around burgeoning workload,³⁸ reimbursement, and privacy.³⁹ Other considerations that have not been studied include personal continuity of care and risks associated with handover. In summary, the evidence for the use of video consultations is weak.⁵⁻⁴⁰⁻⁴⁴

This article offers a pragmatic approach (based on the best available evidence and the opinion of the authors). Patients and doctors should carefully consider the appropriateness and safety of video consultation, and have a low threshold for changing the mode of consultation, should the need arise.

Practical use of video consultations with patients and carers

Implementing video consultations

All digital communication with patients must be compliant with the country’s and organisation’s data protection and telehealth regulations. Note that these are rapidly evolving⁴⁵⁻⁴⁷ and subject to change.¹⁴ Healthcare video consultation apps or platforms will state their compliance level to pertinent data security and privacy requirements (eg, the US Health Insurance Portability and Accountability Act or the European Union’s General Data Protection Regulation guidelines). Administrative and physical security considerations are matters of organisational implementation, and a growing number of countries have developed protocols and guidelines for adopting video consultations.⁴⁸⁻⁵¹ In the UK and US (among others), clinicians are now permitted by regulators to use non-medical, popular video call applications (apps) such as Skype, WhatsApp, and FaceTime in addition to medical ones.⁵²⁻⁵⁴ Technical considerations are described in [box 1](#).

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Box 1: Considerations for using video consultations

The technical considerations listed here are not essential for conducting a video consultation, but are likely to make a difference to the quality and safety of the meeting.

- **Hardware**—use a desktop or laptop computer with high quality audio-video capabilities. Seek IT advice about computer's specifications: video calling capabilities depend on age, speed, and quality of processor and graphic card, among others.
- **Monitor, speakers, and microphone**—for monitors, if possible, use two full high definition (HD) resolution screens: one for the electronic health record, and the second for video consultation. The quality of your speaker will make a difference to the call. Test your speakers and ensure that their volume does not compromise confidentiality, or use a headset. Use a dedicated microphone that enables all participants in the consulting room to be clearly audible.
- **Camera**—use a full HD 1080p video camera with autofocus and, if possible, external privacy shutter. Using a dedicated camera instead of—for example—a laptop's in-built camera, can make a noticeable difference.
- **Tablet or smartphone**—these have pros such as portability and easier adoption, but also cons such as a smaller screen, a need for a stand, and wireless connectivity that is less reliable than wired. Use a dedicated practice device, not a private phone or tablet (especially if using FaceTime, WhatsApp, or similar for video consultations as these are linked to the mobile phone's number).
- **Internet connection**—whenever possible, use wired ethernet/broadband instead of Wi-Fi/4G as it provides a more consistent connection; wireless/mobile connection is more likely to get lag and interference which can make video and audio suboptimal.
- **Internet speed**—connection should be at least 1 Mbps speed or have strong reception on a 4G mobile network. Requirements are driven by the resolution and image motion. Higher speed will enable a better experience. UK general practices and hospitals vary in terms of their internet speed and as such, prior testing is necessary to determine the feasibility of video consultations.
- **Latency (lag in internet response)**—aim for lower than 200 ms and preferably less than 100 ms.⁴⁹ Internet speed and latency can be easily tested—search the internet for a test.
- **Registration and installation**—use healthcare approved video calling software, if possible.
- **Settings**—computer, phone, or tablet may require configuration of privacy and other settings for video consultations.
- **Interoperability**—provide information to patients about the interoperability of video consultation systems with common operating systems and devices. Aim for wide interoperability, including with older operating systems and software, without compromising privacy, security, or quality.

Before you begin

- Make sure you are conducting the video consultation in a private and quiet space
- **Team**—form a team that will support video consultations, from receptionists to IT support.
- **Rehearse**—test the video consultation equipment in a call with a member of the team before using it with a patient.
- **Time of the consultation**—video consultations can be scheduled in the same way as face-to-face or telephone appointments and some apps/platforms offer a virtual waiting room for the video consultation.
- **Dress code**—dress for video consultations as you would for clinic work, even if conducting them from home.
- **Telephone number**—obtain the patient's telephone number so you can call them if the video consultation gets interrupted or video quality deteriorates.

- **Home video consultations**—if you are conducting the consultation from your home (or at a location other than the clinic), inform the patient and assure them that you have access to their electronic health records and all other resources needed; and that should the need arise, you will be able to arrange a face-to-face consultation in the clinic.
- **Three-way communication**—some video consultation apps enable three-way communication. Consider this when a carer or another healthcare professional (at a separate location) needs to be included.
- **Guidance for patients**—in advance of the appointment, share with patients the guidance for video consultations (box 2).
- **Free video calling apps**—If you opt to use a popular video calling app, develop a protocol for its use and notify patients that using the app potentially has risks for privacy.⁸ In guidance for patients, include a disclaimer and warning about safe use, such as: "Do not use [named video calling app] for contacting your doctor or sending messages to clinic as these cannot be monitored and responded to in a safe manner. Instead, use online booking, call the practice, or if it is closed, use an out-of-hours provider."

How to conduct a video consultation**Getting started**

Conduct video consultations in a quiet room on a device that supports high quality video calls. We recommend using two screens: one for the video consultation, and one for the electronic health record. If using one screen, avoid using a "floating image" of a video consultation on top of electronic health record as this could cover critical information. Instead, before the consultation, split the screen into two parts. Most platforms display a smaller video of the user, which enables you to view how the patient sees you.

When calling a patient, start by verifying the person's name, date of birth, and location. Also obtain the patient's phone number to continue the consultation should it be interrupted (if the internet connectivity is bad, for example). Initiating the consultation will depend on how well you know the patient and the context of the assessment. As with face-to-face consultations, if the patient can see their regular doctor or the doctor they last saw, this may save time and reduce clinical risk.⁵⁵ If you are meeting the patient for the first time, begin by introducing yourself and where you are calling from, such as your clinic or home. Check whether the person is in a private quiet space and that it is a convenient time to talk.

Many video consultation apps have a process of pre-registration of both patients and clinicians, which ensures that the identity of both is verified before the consultation and as such removes risks of breaching confidentiality. Video consultation apps vary in function and may in addition, for example, provide messaging, image sharing, reminders, and/or pre-consultation history taking. Box 2 offers guidance for patients on how to prepare for a video consultation.

Box 2: Guidance for patients on how to prepare for a video consultation**Before the video consultation**

- **Test the device**—such as smartphone, tablet (eg, iPad), laptop, or desktop computer, and check
 - **Internet connectivity**—use broadband internet connection >1 Mbps or confirm the availability of a strong Wi-Fi/4G signal. If possible, use a wired connection
 - **Power**—check the device battery is fully charged or it is plugged in
 - **Camera**—adjust the position or angle so that you can be clearly seen by the doctor

o *Microphone and speakers*—test them before the consultation.

- *Room*—find a private quiet space where the sound from the video consultation will not be overheard by others.
- *Lighting*—ensure the room is well lit. Cameras need more light than the human eye to produce a quality image. Use a broad light source with daylight, as this lessens shadows and reduces contrast. Position yourself towards the source of light, eg, if the window is the source of light, look towards it when looking into the camera. Avoid a high intensity light behind you as this darkens the image and the doctor may not be able to see you clearly.
- *Appearance*—check your appearance on the screen. Is the camera at the right distance from you so that the doctor can see you or the relevant body part for examination, and not just your face?
- *Assistance*—consider asking a family member or a carer to join you. They could help by taking notes of key actions or hold the smartphone during the examination. If the doctor will not be able to see the person who may be with you, let the doctor know they are present so that they could be involved in the consultation, if appropriate.
- *Examination*—Depending on the reason for the consultation (eg, a rash or swelling), consider wearing clothing that would enable the doctor to examine you by video.
- *Measurements*—if you have home devices such as a thermometer, blood pressure or blood glucose measurement monitor, do the measurements as needed before the consultation.
- *Questions and notes*—consider making a written list of concerns and queries before the consultation and record any important information about medical history such as allergies.
- *Medication(s)*—prepare the list of current medication(s) you are taking.
- *Smartphone functions and features*—familiarise yourself with the settings, functions, and features of your phone video consultation app, including the mute button or the video on/off button.

During the video consultation

- *Introduction*—introduce yourself, and inform the doctor at the start of the consultation of who else is with you if they are out of view.
- *Audio and video*—check the doctor can see and hear you clearly; otherwise a telephone consultation may be more appropriate.
- *Notes*—make notes of key points and actions.
- *Questions*—do ask questions and share any concerns you may have as you would in a face-to-face consultation.

In contrast to telephone, video consultations closely resemble face-to-face consultations³⁵ and can therefore be structured as such. However, video consultations require more attention to pick up non-verbal and visual cues such as facial expressions, because the visual field is smaller and sometimes there is a lag in communication. Aim to establish eye contact by aligning your point of focus close to where the camera is on your device. If your head is turned away, it may look as though you are disengaged or distracted. Most patients will not have experience with video consultations, so assure them at the beginning that the video consultation can take place by phone instead or lead to a subsequent face-to-face consultation if the need for this becomes apparent during the consultation.

Building rapport and establishing mutual trust—relevant for all types of consultation—are even more important over video because of remoteness, potential disruption, latency, and loss of video or audio. Regularly check whether the patient hears and understands you, offer short intermittent summaries of the information shared, and check their understanding. Use safety netting as you would for a telephone or face-to-face consultation.⁵⁶ A low threshold for seeing patients in person is needed (as with telephone consultations),

especially for children under 2 with signs and symptoms of high fever, nausea, vomiting, diarrhoea, low playfulness/physical activity, hydration status, respiratory status (too high or low), and neurological cues such as seizures.

Sometimes, video consultations offer a window into a patient's home or work environment akin to that of a home visit. This can enable functional assessment and assist in clinical decision making. For example, the patient could be invited to show where they keep their medication. In a patient with a history of falls, seeing a cluttered room may highlight falls risks, in a way that wouldn't be apparent in a consultation in a hospital or GP setting. Factors contributing to mental health or respiratory problems may be apparent from the home environment (eg, damp in the home or evidence of hoarding).

At the end of the video consultation invite the patient to disconnect first or say, for example, "What questions do you have?" and if the patient says none, then say "I'll let you disconnect first, bye now, wishing you well!" to ensure that she or he has no further issues to raise. This imitates the patient leaving the consulting room in a face-to-face consultation and removes concern about whether the consultation was interrupted by a technical issue.

How can I examine the patient?

Indirect examination or doctor-guided self-examination by the patient or a carer (or parent, when assessing children) may be conducted during video consultations. You can make physical observations of a patient as you take the history, or combine your history taking with some examination as you go along—an advantage over telephone calls. You may need to verify some examination findings with the patient (eg, appearance of colours may look different on a screen). [Box 3](#) provides guidance on conducting a remote examination during video consultations.

Box 3: Suggestions for remote physical examination

These suggestions for remote physical examinations in the absence of in-person examination are based on our clinical experience and patient feedback, and are adapted from those for telephone consultations.⁵⁶

- The dynamic of remote physical examination will depend on the clinical problem and may resemble a face-to-face one, intertwined with history taking.
- The patient may need to partially undress. Carefully consider whether a remote intimate assessment is clinically necessary to provide care or reach a diagnosis in circumstances where it is not reasonable or appropriate to examine the patient in person, taking into account patient choice.⁵⁷ The sense of privacy in relation to undressing will differ between people, so sensitively explore what the patient is comfortable to do in a video consultation and follow key principles for remote intimate clinical assessments. These are listed in the document *Key principles for intimate clinical assessments undertaken remotely in response to COVID-19* published by Royal College of Paediatrics and Child Health ([https://www.gmc-uk.org/-/media/files/key_principles_for_intimate_clinical_assessments_under-taken_remotely_in_response_to_covid19_v1-\(1\).pdf?la=en&hash=0A7816F6A8DA9240D7FCF5BDF28D5D98F1E7B194](https://www.gmc-uk.org/-/media/files/key_principles_for_intimate_clinical_assessments_under-taken_remotely_in_response_to_covid19_v1-(1).pdf?la=en&hash=0A7816F6A8DA9240D7FCF5BDF28D5D98F1E7B194)). The principles apply to all age groups.⁵⁷
- A parent or carer can often help with video examinations. With a parent of a crying child with high fever you might ask: "Does the child have neck stiffness? Can she turn and move her head around and touch chin to her chest?" "Could you gently press on your child's ear—first left, then right? Does the child react as if they are in pain?" "Could you use your mobile phone's light to look into the child's mouth and tell me what you see?" "Could you take a photo of their throat and share it?"

- For visible complaints such as rashes, ask the patient to bring the area closer to the camera (if they use a smartphone, tablet, or computer's camera that can be moved). Examine a rash as you normally would but note that colours may look different, depending on the camera and lighting. If you can't see the rash clearly, consider arranging a face-to-face appointment instead.
- It may be helpful to examine for swollen legs, a skin lesion, or any other changes in visual appearance. Bear in mind possible practical challenges, particularly if the patient is using a fixed camera on a desktop computer.
- Examples of other aspects of examination may include assessment of vision, mobility, muscle strength, changes to appearance, and listening to the patient's cough. A patient may also be taught how to measure their oxygen saturation (if in possession of an oximeter), pulse rate, and respiratory rate, or asked to share an image of an affected body part (which typically has a higher resolution than a video consultation motion-image).

For long term conditions where video consultation is planned, discuss aspects of self-examination and how to use devices such as a thermometer, blood pressure monitor, glucose, peak flow, or international normalised ratio (INR) meter for self-examination or testing at home. Some patients may benefit from a face-to-face appointment (eg, with the practice nurse or healthcare assistant) to run through how to use these correctly.

Documentation

Using electronic health records during video consultations poses even greater challenges than during face-to-face consultations in terms of balancing taking notes with attention to the patient and eye contact. This is because patients have a limited view of the clinician's actions and pay more attention to the clinician's face. If the conversation pauses because, for instance, you need to make notes in the electronic health record, communicate that. Stretches of silence might make it seem like you have lost connection and the patient may not know what you are doing. In addition to documenting the consultation as you would for a face-to-face appointment, highlight additional considerations distinctive to video consultations: the appearance of a patient's environment, technical issues, and disruptions during the consultations, and patient preference on the mode of consultation for the future.^{13 14} The UK General Medical Council offers guidance on making and using visual and audio recordings of patients including, for example, on seeking consent to store an image or video that the patient shared in their electronic health record.⁵⁸

When to change the consultation mode?

Video consultation is not appropriate for every patient or consultation.^{46 47 59 60} Some patients may not be able to operate a device (or have the support of someone who can) and those with certain disabilities may also be disadvantaged. As with any innovation, regular audits (of technical issues, disruptions, and the need for subsequent face-to-face consultation) can help ensure that video consults are safe and do not widen health inequalities. Consider subpopulations, such as those who have hearing problems. Furthermore, if during a call it emerges that you are unable to examine the patient adequately, that there is inadequate voice quality and video such that picking up cues becomes difficult, or that rapport with the patient is lost, then the video consultation becomes neither safe nor effective.

Consider switching to a telephone, face-to-face consultation, or a home visit if

- A telephone call will suffice, for example, for a brief follow-up call or for a patient you know well and is used to speaking with you on the phone
- Technology is not acceptable to the patient or they do not have sufficient digital literacy⁵¹
- The patient does not have a smartphone or another video calling device and high-speed affordable internet connectivity (or data if using 4G). Both parties could experience technical difficulties with audio and video quality³
- Communication is difficult because the patient is not able to hear or understand owing to hearing, linguistic, or cognitive problems
- You or the patient or carer become uncertain whether a video consultation is safe, such as when the patient reveals red flag symptoms or an important diagnosis or acute severe illness needs to be excluded with an examination.¹³
- You need to discuss very serious issues or deliver difficult or bad news.

Video consultations are usually not suitable for the first consultation for chronic illnesses (but again, during the covid-19 pandemic, carefully weigh the pros and cons). It may also be challenging to distinguish non-emergencies from emergencies through video consultations: if in doubt, err on the side of caution and switch to a face-to-face consultation. Video consultations may fall short of the gold standard of face-to-face consultations, but for many patients, not having to take time off work and avoiding potential exposure to covid-19 infection will be considered "good enough."

Education into Practice

- How can you and your patient prepare for a video consultation?
- What is the scope for video consultations at your practice?
- What would make you consider changing the consultation mode during a video consultation?

How patients were involved in the creation of this article

We discussed video consultations and shared a draft of this paper with eight patients or carers aged 8 to 67 who had a wide range of health conditions. They highlighted importance of video to avoid face-to-face consultations with doctors citing risk from infection during the covid-19 pandemic. Some suggested they would postpone visiting GPs for minor illness. Several sections, especially those relating to examination and guidance for patients on how to prepare for a video consultation, were improved in the article at their suggestion. Several technical considerations were identified as critical by patients.

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