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Principles for supporting high quality consultations by video in general practice during COVID-19

This guidance is correct at the time of publishing. However, as it is subject to updates, please use the hyperlinks to confirm the information you are disseminating to the public is accurate.



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Introduction

This guidance is aimed at NHS general practice staff who are consulting via video with patients at home (although we expect the key principles to apply to practitioners across wider primary care). Practitioners are expected to have full access to the patient's primary care medical record and to be consulting with patients in England.

We will update this guide but are also keen to hear your feedback via england.digitalfirstprimarycare@nhs.net.

Key principles for safely assessing patients using a video consultation

- Apply your current skills and clinical acumen when consulting remotely. Use the [boundaries](#) and thresholds you already use and apply these. The approach to video consulting, should be the same as it would be for face to face interactions.
- A good history and functional assessment are vital. Consider non-COVID-19 differentials, and the context. Are these new symptoms and signs, or a follow on relating to an established long-term health condition, or wellbeing problem?
- Tools can assist in decision-making but must not overshadow a holistic assessment of the patient.
- Look at trends and for signs of deterioration.
- Remain [professionally curious](#) and vigilant. Consider [safeguarding issues](#) and whether you can explore these fully via a remote consultation. If you have safeguarding concerns at any stage, you should convert a remote consultation to a face-to-face assessment, unless there are compelling reasons why that cannot happen, and follow existing child and adult protection referral pathways. Update your safeguarding and chaperone policies to cover remote consultations.
- Consider how your actions will change your clinical management, eg will the patient need escalation regardless of whether they have a face-to-face examination?
- Explicit safety-netting is essential. Consider if the patient requires remote monitoring.
- Use colleagues for support, for example, to discuss clinical issues and peer-review decision making.
- Signpost patients to patient information to support self-management and safety netting on [the NHS website](#) (including access using a virtual assistant or similar devices).

- Non-digital users can be supported to use video technology by a carer, where available, with implied patient consent.
- If a patient requires a face-to-face review, eg they need a physical examination or are unable to use the technology, this should be arranged at an appropriate healthcare setting and time.
- Facilitate effective communication using translation services, where possible, but their availability should not preclude a video consultation if deemed appropriate based on clinical judgement.
- Seek feedback from patients and staff to improve the service.
- Complete a [clinical safety risk assessment \(DCB0160\)](#). Where a video consultation solution has been procured by the CCG this should be carried out by the CCG on behalf of their practices, with individual practices working collaboratively with the local clinical safety officer.
- As a consequence of the response to COVID-19, patients may not be accessing health services when they need to, so presentations may be more serious at first contact. Be aware of more vulnerable characteristics where engagement may be delayed.

Section 1: General information

The decision to offer a video consultation should be part of the [wider system of triage](#) and management offered in your practice and should be based on clinical judgement. Consider the patient's level of confidence and access to technology and give them a choice of how to communicate, using the right approach, for the right person and the right circumstance. **There is no need to use video when an online consultation or telephone call is sufficient.** Be aware that patients or their relatives may record the video consultation.

Information governance

Commissioners and practices should procure a video and online consultation solution through the Digital Care Services Framework (GP IT Futures) or the Dynamic Purchasing System via the [national Commercial and Procurement hub](#). These products are appropriate for use in general practice and are centrally funded, so wherever possible, we recommend you use one of these assured products. A [rapid procurement process](#) has been set up during COVID-19 to support commissioners to procure a solution quickly.

Where these are not available, during COVID-19 the [NHSX Information Governance](#) team advises it is acceptable to use free video conferencing tools such as Skype, WhatsApp and/or Facetime, if there is no practical alternative, but this should be a temporary measure until a nationally assured product can be procured. Explicitly check with the supplier if the product audio and/or video records and stores the consultation as a default **(your commissioner should do this on your behalf)** and if so, turn this setting off.

If you are [working from home](#) and using your own equipment, check your internet access is secure (eg use a virtual private network (VPN) and/or if possible avoid public Wi-Fi), and make sure any security features are in use.

During COVID-19, you can use your own devices to support video conferencing for consultations, mobile messaging and home working where there is no practical alternative. Reasonable steps to ensure using your own devices is safe include setting a strong password, using secure channels to communicate, eg tools/apps that use encryption, and

not storing personal/confidential patient information on the device, unless absolutely necessary, and that the appropriate security is in place. Information should be safely transferred to the appropriate health and care record as soon as practical and the original deleted.

Review and update your data protection impact assessment (DPIA). Ensure that your privacy notice reflects the use of video consultations. During the pandemic, practices can use the supplementary [privacy notice template developed by NHSX](#).

Safeguard patients' personal/confidential information in the same way you would with any other consultation.

Communication

It is essential that colleagues are still able to talk to each other and share appropriate information about the people in your care, including with social care. Where possible use secure NHSmail or MS Teams.

Medico-legal

The Clinical Negligence Scheme for General Practice (CNSGP) covers all primary care services commissioned under a General Medical Services (GMS), Personal Medical Services (PMS) or Alternative Provider Medical Services (APMS) contract, where these services are provided directly or under a direct sub-contract.

- The location of the services and whether they are digital or face-to-face will not affect the cover.
- The particular solution used to provide the online or video consultation is not relevant to the scope of the scheme.
- All providers of NHS primary medical services will be eligible for cover under the CNSGP, including out-of-hours providers.
- The scheme will extend to all GPs and others working for general practice who are carrying out activities in connection with the delivery of primary medical services.

You will need to maintain membership with your medical defence organisation (MDO) in respect of activities and services not covered by CNSGP, eg [medico-legal matters outside claims](#).

Consent

The consent of the patient is implied by them accepting the invitation and entering the video consultation. It is good practice to confirm and record their consent for a video consultation and confirm whether the consultation is being audio or video recorded. If an adult [lacks capacity](#), you must obtain consent from someone with authority to act on their behalf for healthcare decisions that includes the procedures being proposed and/or proceed with the consultation if it is in the patient's [best interests](#) to do so.

Do not record the video or audio of the consultation or take a screenshot unless there is a justifiable reason to do so and there is [informed consent](#) from the patient or someone with the legal authority to act on the patient's behalf for healthcare decisions. Decision making must be transparent. You should only audio/video record and store the consultation if this is what you would do in a face to face consultation.

The approach to video consulting with young people under 16 should be the same as it would be for a face to face interaction, assessing their safety and their ability to make the decision using the principles of Gillick Competence. Determine whether the patient is capable of giving informed consent to medical treatment without the knowledge or permission of their parents and whether this is in their best interests. Follow the principles set out by the [GMC](#) when assessing a young person's competence to consent and for shared decision making.

- If the child does have the competence to consent to a phone or video consultation, then confirm whether they would they like another person (for example, parent or family member) present on the call or not.
- If a competent child wishes to discuss a matter in the absence of a parent, all the usual principles apply in relation to confidentiality (the GMC guidance is [here](#)).
- Encourage children to involve their parents (or legal guardian) in decision making.
- An opportunity to speak to young people alone may be more difficult if they are at home. Consider how you will still have these vital conversations.

For children who do not have the competence to consent, then consent would need to be sought from someone who has parental responsibility (or delegated parental responsibility), unless it is not in the child's best interest. Apply the same principles used in face-to-face practice.

Document the name and relationship with the adult and/or person(s) present. If a child is the subject of the consultation make sure you see them and that you don't just talk to the adult(s). Where a child lacks the competence to make a decision, still consider the voice of the child. They should have as much involvement and say in their care as possible.

Ask for consent if a trainee, interpreter or a multidisciplinary team (MDT) member wants to join the consultation. During an examination, ask others to switch off their camera or leave the room if their presence is not appropriate or the patient does not consent.

Be mindful of the following issues:

- the limitations of a remote assessment, whether it is likely to provide sufficient information to make the clinical judgement in question or whether a more extensive assessment of the patient and/or investigation may be indicated
- whether the patient feels comfortable with a remote assessment (including concerns about security or privacy) or whether they would prefer a face-to-face consultation
- the trade-off for a patient between attending in person and staying at home, where the advantages of remote consulting may outweigh limitations for some patients during the COVID-19 pandemic
- the nature of the examination and the examination setting (for example, traditionally it is unusual for a clinician to undertake an examination in this way, the patient may want to relocate to another room if there are other family members in the vicinity). It is therefore important to ensure the consent of the patient is tailored to the specific circumstances of the remote examination
- the need for privacy around the practitioner's screen to ensure that no one can view or overhear the call without the consent of the patient (this may require sensitive handling if an interpreter is involved in the call e.g. asking them to switch off their camera or leave the room)
- if it is not possible to adequately assess a patient's condition in this way clinicians should consider if a face to face consultation to examine the patient is necessary, or signpost to other services where appropriate
- with the consent of the patient (or someone who has the legal authority to act on the patient's behalf), or where a decision to proceed with an examination is made in the patient's best interests, you should have an appropriately trained chaperone

present for any situation where you would do so in a face to face consultation. If a chaperone is not available (for example because you are remote working) or declined by the patient, use your [professional judgement](#) and carefully consider whether a remote examination method should proceed

- if a chaperone is required, they could be present with the practitioner (either virtually or in the same room) and witness the nature and extent of the video examination that was undertaken. The chaperone should be visible to the patient. The chaperone should be appropriately trained (consider whether the chaperone is competent and comfortable with conducting their role in these circumstances and use your professional judgement). Their role, in this context, is to ensure the nature and extent of the assessment are appropriate and to protect the patient and practitioner from any suggestion the examination was inappropriate
- a family member of the patient is not an impartial observer and so would not be a suitable chaperone, but you should comply with a reasonable request to have such a person present as well as a chaperone
- be aware that patients or their relatives may record the video consultation. If you are concerned about how the recording may be used carefully consider whether a remote examination method should proceed

Section 2: Remote examination

This guidance should be used in conjunction with guidance on how to conduct a [video consultation](#) and [online consultation](#) (text-based interaction).

Provide guidance, information and/or a demonstration (e.g. via online videos or champions) for patients on getting set up, joining and having a video consultation including a code of conduct. Guidance should include advice on what to do if the technology is not working. Receiving information in advance helps patients feel prepared and supported.

All clinicians should feel competent and comfortable in the mode of assessment and examination technique. Triage the patient using an online consultation or telephone call. If you decide they need a remote examination, where possible carry this out via a video call. Provide a precise time window for appointments so patients can prepare and find a quiet and private location for the consultation, provide the name of the clinician who will be calling and let patients know if there is a delay.

Examinations that may be perceived to be intimate

Remote examinations that are [intimate](#) or may be perceived as intimate must be approached with caution. **We have developed [detailed guidance](#) with multiple organisations on key considerations and principles for intimate clinical assessments undertaken remotely.**

Identity

Confirm the patient's identity if they are not known to you, eg check name and date of birth. If you have safeguarding concerns, and the patient is unknown to you, [verify their ID](#), eg [vouching](#) if you have access to the patient's clinical record, or by asking for photo ID.

Introduction

Introduce everyone in the room, even those off camera or confirm with the patient that they (and you) are alone. Follow this with:

- checking if the patient or anyone else is recording the consultation

- ensuring you use a private, quiet, well-lit room and checking the patient can do the same. You should safeguard personal/confidential patient information in the same way you would with any other consultation
- taking the patient's phone number in case the video link fails

If the connection or video quality is poor, ask the patient to re-book or conduct a phone or face to face consultation as it is possible you could miss something due to technical interference

Starting the examination

Setting up

Your initial focus should be on the camera position in order that the patient sees your full face and you are in focus. Confirm the patient's location in case you need to send help: they may not be at their home address. Then explain the nature and extent of the examination and seek verbal consent.

When talking, look at the camera.

When listening continue to look at the camera and screen.

Demonstrate active listening and check the pace of the consultation to ensure it doesn't feel rushed.

Assess the patient, this will involve breaking eye contact. Signpost what you are doing when you need to look away to avoid looking uninterested. Preface with a comment such as "I'm going to take a closer look at your breathing now".

Visually assess the patient

- Assess their demeanour, behaviour, skin colour (including mottling), temperature, posture, hydration status and sweating.
- Assess surroundings.
- Do they sound or look very unwell?
- Assess their breathing – are they too breathless to talk?
- Are they in distress or pain?
- Do they look upset?
- Are they lying in bed or are they up and about?

- Is there any obvious pathology, eg wound, not moving a limb, facial droop, tremor, slurred speech, etc.

Go straight to key clinical questions

- Check red flags for [COVID-19](#) and non-COVID-19.
- Ask why the patient has chosen to consult now (explore soft signs such as ‘gut feel’ and concerns).
- Check for signs of deterioration (symptoms, signs and function).
- Ask what the patient wants or needs out of the consultation.
- Check their medical record for risk-status.
- Be clear and direct with questions and explicit about concerns.
- Check you have the whole picture.
- Share information with the patient on the screen.

Initial assessment – abnormal vital signs?

1. Ask the patient to tap out their pulse and count the pulse rate (or show the patient [how to take their pulse rate](#)).
2. Ask the patient to place their hand on their chest making it easier to see the chest rise and fall and count the respiratory rate.^{1,2,3} Look at use of accessory muscles. Listen for stridor, wheeze, grunting, hoarseness of voice.
3. Do they feel dizzy or light-headed when they get up from lying down? (Low blood pressure).
4. Are they more muddled than normal? Ask someone who knows them well if they are behaving differently? Do they seem agitated?
5. Are they passing urine normally?
6. If they have a fever, how high and for how many days? (COVID-19 fever is typically >38.0 and persists beyond 5 days). Are they shivering?
7. If they are diabetic, what is their capillary blood sugar? Do they have home ketostix or home dipsticks – what does the urine analysis show?
8. Ask the patient (or the patient’s carer) to feel the patient’s hands and describe how they feel – do they feel cold (but are warm centrally)?

Consider the patient's age and medications – a patient can be sick with normal vital signs. Look out for compensation, eg respiratory compensation for metabolic acidosis or a blunted response to illness, eg beta blockers blunting the tachycardic response to sepsis.

Family input: has there been a change from baseline?

Trends: has there been a deterioration in the patient's observations or symptoms?

Is the patient at high risk of deteriorating quickly?

Is the patient able to take their medications? Consider watching them take their medication or drink a glass of water to check they can swallow and co-ordinate an action if concerned.

Taking observations

Home monitoring devices

Does the patient have access to a home self-monitoring device? (thermometer, O₂ sats monitor, BP machine, peak flow meter, urine dipsticks, weighing scales).

Are they familiar with how to use it?

Guide the patient in taking their observations using their home self-monitoring device(s) over the video call.

Be aware that the quality of a patient's home device may not be the same as those used in clinical practice and it may not have been calibrated.

Exertion tests: An exertional desaturation test should be used with clinical judgement,⁴ and only on patients whose resting oximetry reading is 96% or above, unless they are in a supervised care setting. It should be terminated if the patient experiences adverse effects.

The 1-minute sit-to-stand test (patient goes from sitting to standing as many times as they can) has been validated; the unvalidated 40-step test (take 40 steps on a flat surface) is in widespread use. These tests are likely to be specific but not sensitive (ie a positive test is serious cause for concern, but a negative test should not necessarily reassure).

A 3% drop in pulse oximeter reading on exercise is a serious cause for concern in COVID-19, however even a small desaturation on exercise should alert the clinician.

Results should be interpreted as part of a wider holistic assessment of the patient. An approved and tested medical-grade oximeter should be used.

Smartphone apps – current evidence

[Should smartphone apps be used as oximeters? Answer: no](#) ⁵

There is no evidence on home monitoring of respiratory rate. If considering the use of apps to monitor observations, only use those that are clinically validated, assured and have been approved as diagnostic medical devices.

Solution if patients do not have access to a home monitoring device

Ambulatory patients: Hot Hub testing on site, either via a pod, in clinic or with patients waiting in cars, in a drive-through type model where appropriate.

Housebound patients: ‘WhileUWait’ home test which is where NHS volunteers at each GP surgery take equipment to the patient’s home to enable the patient to self-monitor from home, with appropriate personal protective equipment (PPE)/training if necessary.

Care and nursing homes to have equipment on site with staff trained to take the measurement and [decontaminate equipment](#), relaying the measurements in a reliable way without interpretation for a specific patient.

The [NEWS2](#) score

We have no data on the sensitivity and specificity of NEWS2, especially when used in the ‘risk sink’ in primary care.

There is no data on the value of [NEWS2 in COVID-19](#) ⁶ in primary care. It does not include age or comorbidities which are known to be strong independent predictors of survival in COVID-19.

When using NEWS2, do so alongside a full clinical assessment, using your clinical judgement. If the score is higher than expected, it may help you think ‘Have I missed something?’ (taking into consideration the patient’s baseline score if known). It may also provide an objective measure of clinical deterioration for non-COVID presentations of possible sepsis.

Worried about

Acute abdomen?

An acute abdomen would need face-to-face assessment as signs of peritonitis may not be possible to observe remotely. As a screening tool, tell the patient to 'blow their tummy out' and 'cough': a patient with peritonitis will usually grimace. A family member or carer can also be instructed on carrying out abdominal palpation solely to elicit any signs of tenderness.

Acute shortness of breath (including on exertion where not normal for the patient⁷)?

Ask the patient to describe their breathing in their own words and assess how easily they can speak.

- Are they able to complete sentences? Are they speaking with ease?
- What is the patient doing now? (Lying down vs able to do usual activities.)
- How much are they able to do in comparison with normal?
- If speaking to a relative: "How would you describe their breathing? Can I listen?"

Align with NHS 111 symptom checker

- "Are you so breathless that you are unable to speak more than a few words?"
- "Are you breathing harder or faster than usual when doing nothing at all?"
- "Are you so ill that you've stopped doing all your usual daily activities?"

Is there evidence of deterioration?

- "Is your breathing faster, slower or the same as normal today?"
- "What could you do yesterday that you cannot do today?"
- "What makes you breathless now that did not yesterday?"
- Frequency of use of reliever medications in comparison with normal.

Look for peripheral oedema, leg and calf swelling.

Impairment (musculoskeletal or neurological)?

- Ascertain severity, eg use a pain assessment tool.
- Any suggestion of changes in bladder or bowel function? Or saddle sensory disturbance?

- Assess function – is the patient able to move all their limbs (watch them climb a flight of stairs or walk if safe to do so) can they bend, get on and off the bed, can they lie flat?
- Are they limping?
- Look at the joint or limb: is it hot, tender, swollen? Are there any colour changes?
- Look for muscle wasting and fasciculations. Test global limb strength (tip-toes, squats, raising from chair, pushing up from chair with arms etc).
- If required, carry out a partial cranial nerve examination and check for cerebellar signs.

Wound, skin rash or lumps?

- Look at a wound, skin area, any lumps or swellings - do not be afraid to direct the camera in an appropriate way using landmarks that the patient can see as opposed to comments such as up or down which can be meaningless.
- If there is a rash, check whether it is blanching.
- Dermatology diagnoses are best made by taking a full history and the patient electronically sending pictures of the affected area, as still pictures give better resolution than video.

Mental state?

- Carry out a mental state examination including assessment of self-harm, suicide and risk to others, and obvious signs of substance or alcohol misuse.
- Take turbulence of speech as a warning the patient is upset.

Children?

- Tone – is the child moving around and active or listless?
- Interactivity/mental status – how alert is the child? Does he/she reach for and grasp a toy, or are they disinterested in interacting or playing with the caregiver?
- Consolability – can the child be comforted by the caregiver?
- Look/gaze – does the child fix the gaze on a face or is there a glassy-eyed stare?
- Speech/cry – is the child's speech or cry strong and vigorous or weak or hoarse?
- [Paediatric remote assessment guidance](#) is on the Healthier Together website.

Tonsillar examination

- Transmission of COVID-19 from the upper airway has been raised as a particular concern by ear, nose and throat (ENT) specialists. The [Royal College of Paediatric and Child Health \(RCPCH\)](#) recommend that the oropharynx of children should only be examined face-to-face if essential. If the throat needs to be physically examined, PPE should be worn, irrespective of whether the patient has symptoms consistent with COVID-19 or not.
- If a diagnosis of tonsillitis is suspected based on the clinical history, ask the patient to send a photo of their tonsils or try to visualise using a video call. Watch them drink a glass of water – can they swallow?
- The [feverpain](#) score should be used for assessment of tonsillitis to decide if antibiotics are indicated (validated in children three years and older⁸).
- [RCPCH guidance](#) recommends a pragmatic approach, automatically starting with a score of 2 in lieu of an examination. Consider prescribing antibiotics for patients with a total feverpain score of 4 or 5 (those with a score of 3 or less should receive [safety netting advice](#) and a back-up prescription).
- Antibiotics rarely confer a benefit in children under three years with tonsillitis and should only be prescribed in exceptional circumstances or if a diagnosis of scarlet fever is strongly considered.
- Red flags: can't manage fluids; can't swallow saliva; trismus; increasingly unwell eg feeling faint, confusion. Persistent symptoms.

COVID-19?

[Guidance and standard operating procedures \(SOP\)](#): general practice in the context of coronavirus.

Safety netting

Be particularly careful to summarise key points and explain next steps in language that will be clear to the patient:

- Explicitly check understanding.
- Provide clear safety netting instructions.
- Actively signpost for support, eg to social prescribing link workers.
- Explain what happens next and what to expect.

Decide in what circumstances patients will be followed up with a practice-initiated phone or video call, eg if frail/alone and high risk of deterioration; and where patients will be given clear directions to contact the practice if symptoms deteriorate, eg if supported and able to do so. Patients should be clear on what to do if they cannot contact the practice and their symptoms deteriorate.

Think about which patients can use online consultations or messaging for follow-up (consider scheduling a diary entry as a safety net).

Consider setting up a scheduled 'check in' via a message (often a text message) to enable virtual monitoring, where the patient is sent a brief templated questionnaire and reports back on their symptoms, particularly as part of COVID-19 remote monitoring.

Use the chat function on the video call (if available), text or online messaging to send links to advice on [the NHS website](#) or patient information leaflets and summarise next steps. Use pre-set messages that can be personalised to save time. Advise patients to use an account and/or device which is private to maintain confidentiality. Check with the patient there are no safety concerns.

Documentation

Make contemporaneous written records in the patient's medical records, as you would in a standard consultation. Do not record the video or audio of the consultation unless there is a justifiable reason to do so and there is [informed consent](#) from the patient, document these discussions and decisions in the clinical record, decision making must be transparent. You should only audio/video record and store the consultation if this is what you would do in a face to face consultation. The process of obtaining and documenting consent should include explaining why a recording will help in providing clinical care, who can access the recording, where and how it will be stored securely, how long it will be stored for and how it will be used (ie that the recording will not be used for any other purpose except for direct care without the patient's express permission). If a recording is made this must be stored securely in the patient's clinical record. Follow your organisational policy on secure management of patient data (which should be in accordance with the Data Protection Act 2018 and GDPR). If recording, confirm when the recording starts and stops.

Document in the patient's record that the consultation is via video*, the nature and extent of the examination has been explained to the patient in advance (together with all the other aspects of the consultation) and the patient verbally consented to being examined in this manner. Record discussions and decisions about capacity, [consent and best interests](#)

* SNOMED CT ID = 325921000000107 (consultation via video conference)

[decision making](#). Ensure your clinical justification for examination and non-examination is clear. You should thoroughly document your justification for proceeding with an intimate examination.

Make sure information that may be relevant to keeping a child, young person or vulnerable person safe is available to other clinicians providing care to the patient.

Record who was present for the consultation and their relationship to the patient.

Document whether or not a chaperone was offered and either declined or was present at the consultation. If a chaperone was present, you should record their identity, including their designation and the extent of the assessment witnessed, for example 'present for the complete video-linked assessment', and where the chaperone was located both at the patient and clinician end.

Resources and references

Resources

- [Advice on how to establish a 'total triage' model in general practice using online consultations](#)
- Health Education England e-learning on [remote total triage model in general practice](#)
- [Remote working in primary care: guidance for GP practices during COVID-19 emergency response](#)
- [Responding to domestic abuse during telephone and video consultations](#)
- Health and Care Professions Council: [standards of conduct, performance and ethics](#).
- Academic Department of Military General Practice: [video consulting](#)
- Nursing and Midwifery Council: [code](#)
- [Key principles for the safe use of intimate images in a clinical setting](#)

References

1. Karlen W, et al. Improving the accuracy and efficiency of respiratory rate measurement in children using [mobile devices](#). PLoS ONE. 2014;9(6): e99266.
2. Rimbi M, Dunsmuir D, Ansermino JM, Nakitende I, Namujwiga T, Kellett J. Respiratory rates observed over 15 and 30 s compared with rates measured over 60 s: practice-based evidence from an observational study of acutely ill adult medical patients during hospital admission. QJM: An International Journal of Medicine. 2019;0(0): 1-5.
3. Nakitende I, Namujwiga T, Dunsmuir D, Ansermino JM, Wasingya-Kasereka L, Kellett, J. Respiratory rates observed over 15 seconds compared with rates measured using the RRate app. Acute Medicine. 2020;19(1): 23-27.
4. Greenhalgh T, Javid B, Knight M, Inada-Kim M. (2020) What is the efficacy and safety of rapid exercise test for exertional desaturation in Covid-19? Centre for Evidence-Based Medicine, Nuffield Department of Primary Care Health Sciences, University of Oxford.
5. Tarassenko L, Greenhalgh T. (2020) Question: Should smartphone apps be used as oximeters? Answer: No. Centre for Evidence-Based Medicine, Nuffield Department of Primary Care Health Sciences, University of Oxford.
6. Greenhalgh T, Treadwell J, Burrow R. (2020) NEWS (or NEWS2) score when assessing possible COVID-19 patients in primary care? Centre for Evidence-Based Medicine, Nuffield Department of Primary Care Health Sciences, University of Oxford.

7. Greenhalgh T, Kotze K, Van Der Westhuizen, H. (2020) Are there any evidence-based ways of assessing dyspnoea (breathlessness) by telephone or video? Centre for Evidence-Based Medicine, Nuffield Department of Primary Care Health Sciences, University of Oxford.
8. Little P, Hobbs FDR, Moore M, et al. Clinical score and rapid antigen detection test to guide antibiotic use for sore throats: randomised controlled trial of PRISM (primary care streptococcal management). *BMJ*. 2013; 347: f58

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