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10-MINUTE CONSULTATION

Covid-19: a remote assessment in primary care

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What you need to know

- Most patients with covid-19 can be managed remotely with advice on symptomatic management and self isolation
- Although such consultations can be done by telephone in many cases, video provides additional visual cues and therapeutic presence
- Breathlessness is a concerning symptom, though there is currently no validated tool for assessing it remotely
- Safety-netting advice is crucial because some patients deteriorate in week 2, most commonly with pneumonia

A 37 year-old healthcare assistant develops a cough. Next day, she wakes with a fever (which she measures at 37.4°C) and shortness of breath. She manages her condition at home for several days, experiencing increasing tiredness, loss of appetite, and a persistent dry cough. On the fifth day of her illness, she develops mild diarrhoea, and her chest feels quite tight. She takes her temperature, which has gone up to 38.1°C. Feeling unwell, she contacts her GP surgery for advice. She would like someone to listen to her chest, but the receptionist tells her not to come to the surgery and offers her the choice of a telephone or video consultation. She was previously well apart from mild asthma (on occasional salbutamol). Five years ago, she took citalopram for anxiety. She is a single parent of three children.

Novel coronavirus disease 2019 (covid-19) is an urgent and spreading threat whose clinical and epidemiological characteristics are still being documented.[1,2] With a view to containing covid-19, a shift from in-person to remote consulting is occurring. Clinicians are thus faced with a new disease *and* a new way of interacting with patients.

This article will present some guiding principles on how to choose between telephone and video appointments, how to conduct a "query covid" consultation remotely, and considerations when arranging follow-up and next steps. It does not cover remote triage or how to set up video consulting in your practice. This article is intended as a broad orientation to a COVID-19 consultation. It does not cover every clinical eventuality, and should not be used as an official guideline for the management of a COVID-19 patient. National and local guidance are being urgently produced, and further research is being undertaken on specific aspects of management such as use of antibiotics.

What you should cover

Telephone or video?

The telephone is a familiar and dependable technology, which is adequate for many covid-19 related conversations. Patients who just want general information about covid-19 should be directed to a telephone message or online symptom checker such as NHS 111 online (https://111.nhs.uk/covid-19) or other online resources. Those with mild and uncomplicated symptoms and those consulting for administrative reasons can generally be managed by telephone. In the UK, sickness certificates can be downloaded directly from NHS 111 online. However, video can provide additional visual information, diagnostic clues, and therapeutic presence.[3-5] Hence, video may be appropriate for sicker patients, those with comorbidities, those whose social circumstances have a bearing on the illness, and those who are very anxious. Patients who are hard of hearing may prefer video to telephone.

Note that many countries, including the US,[6] are formally relaxing privacy and data protection regulations for video and other communications technologies during the crisis; the General Data Protection Regulations which apply in the UK and European Union already include a clause excepting work in the overwhelming public interest.

Before you connect

Open the patient's medical record, preferably on a second screen if using video. Check for risk factors for poor outcome in covid-19, including immunocompromised states (such as frailty, diabetes, chronic kidney or liver disease, pregnancy, or taking chemotherapy, steroids, or other immunosuppressants), smoking, cardiovascular disease, asthma, or chronic obstructive pulmonary disease (COPD). Enter a code for a video or telephone consultation and perhaps also "in the context of covid-19 pandemic." Have your current "stay at home" covid-19 guidance on hand.[7,8]

Establishing a technical connection for a video consultation

Research shows that if the technical connection is high quality, clinicians and patients tend to communicate by video in much the same way as in an in-person consultation.[3] When you are ready to connect, follow your local procedure (in some cases, for example, the link will be via a fixed URL and in others, a new URL will be generated for each appointment). When connected, check video and audio ("Can you hear/see me?") and ask the patient to do the same. If necessary, prompt the patient to unmute and adjust their

This is part of a series of occasional articles on common problems in primary care. *The BMJ* welcomes contributions from GPs.

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microphone (you may need to call them on an ordinary telephone to troubleshoot this). Make sure you have a record of their phone number in case you need to call them.

Beginning the consultation

Check the patient's identity (for example, if they are not known to you, ask them to confirm their name and date of birth). Speak to the patient if possible rather than their carer or family member. Ask where they are right now (most patients will be at home, but they may be staying somewhere else). Then, begin with a ballpark assessment (very sick or not so sick?). What are they currently doing (lying in bed or up and about)? Do they seem distressed? Too breathless to talk? If you are using video, do they look sick? If the patient seems sick, go straight to key clinical questions as appropriate. Otherwise, take time to establish why the patient has chosen to consult now (for example, are they or a family member very anxious, or are they concerned about a comorbidity?). Find out what the patient wants out of the consultation (for example, clinical assessment, certification, referral, advice on self isolation, reassurance).

Taking a history

Note the approximate incidence of key symptoms and signs listed in the infographic (right hand column), with the caveat that this list was generated in a different population and may not reflect your own case mix. The infographic guidance should be used flexibly to take account of the patient's medical history and issues that emerge during the conversation. The vignette describes a typical mild to moderate case of this disease; more serious cases typically develop worsening respiratory symptoms, which may indicate pneumonia. Elderly and immunocompromised patients may present atypically.

Note the date of first symptom to date-stamp the onset of disease. Many but not all patients will have a thermometer at home. Ask how high their temperature is currently, how long the fever has lasted, and what the highest reading so far has been. The fever in covid-19 is often but not always >38.0°C and tends to persist beyond five days. Note that up to half of all patients with covid-19 have no fever at initial presentation.

Most but not all patients with covid-19 have a cough. It is usually dry, though a substantial proportion of patients have sputum production, and typically persists for more than five days. Fewer than half of patients with covid-19 have shortness of breath or difficulty in breathing,[2] but if they do this tends to indicate more serious disease (especially pneumonia). It is therefore important to assess respiratory symptoms carefully, though the evidence base on how to do this is weak and expert opinion divided (box 1). If the patient has asthma, ask how many puffs of their reliever they are currently taking per day and whether this has increased recently.

Systemic symptoms include fatigue and muscle pain, though many patients have neither.

Box 1: Remote assessment of breathlessness

There are no validated tests for the remote assessment of breathlessness in an acute primary care setting. A rapid survey of 50 clinicians who regularly assess patients by telephone revealed some differences of opinion. For example, most but not all rejected the Roth score (which times how long it takes for a patient to take a breath while speaking) on the grounds that it has not been validated in the acute setting and could be misleading.

However, there was consensus among respondents around the following advice:

- Ask the patient to describe the problem with their breathing in their own words, and assess the ease and comfort of their speech. Ask open ended questions and listen to whether the patient can complete their sentences:
  - "How is your breathing today?"
- Align with the NHS 111 symptom checker, which asks three questions (developed through user testing but not evaluated in formal research):
  - "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 of your usual daily activities?"
- Focus on change. A clear story of deterioration is more important than whether the patient currently feels short of breath. Ask questions such as
  - "Is your breathing faster, slower, or the same as normal?"
  - "What could you do yesterday that you can't do today?"
  - "What makes you breathless now that didn't make you breathless yesterday?"
- Interpret the breathlessness in the context of the wider history and physical signs. For example, a new, audible wheeze and a verbal report of blueness of the lips in a breathless patient are concerning.
  - There is no evidence that attempts to measure a patient's respiratory rate over the phone would give an accurate reading, and experts do not use such tests. It is possible, however, to measure the respiratory rate via a good video connection. More generally, video may allow a more detailed assessment and prevent the need for an in-person visit.

Ask about a history of contact with a case of covid-19 (laboratory confirmed or clinically suspected), especially one who had been closer than 1 metre for 30 minutes or more. The incubation period for covid-19 is 2-14 days, on average 5-6 days. Ask if anyone else in the immediate family is unwell. Other risk groups include healthcare workers, others working in a healthcare environment (such as cleaners), and transport workers. Travel to a known hotspot is less relevant as the virus is now widespread (type "WHO Situation Report" into Google for the latest worldwide incidence).

Features that generally indicate a condition other than covid-19 include nasal congestion (present in only 5% of cases), conjunctival congestion (1%), and other allergic symptoms such as itchy eyes. A preliminary report suggests that, although conjunctival involvement is rare in covid-19, it is a poor prognostic sign if present.[9] Distinguishing seasonal influenza from covid-19 can be difficult, but, as a rule of thumb, the former is more likely to produce body aches and the latter shortness of breath. Gastrointestinal symptoms such as diarrhoea were initially said to be rare in covid-19, but there is

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emerging evidence that they may be commoner than previously thought.[10] Loss of appetite occurs in many patients, and there are widespread anecdotal reports that anosmia (loss of sense of smell) is a common and early symptom.

Red flags

Red flag symptoms which indicate that the patient needs urgent assessment (either in person or by a good video link, depending on the clinical circumstances) include severe breathlessness or difficulty breathing, pain or pressure in the chest, blue lips or face, and a story suggestive of shock (such as cold and clammy with mottled skin, new confusion, becoming difficult to rouse, or significantly reduced urine output). Haemoptysis occurs in about 1% of covid-19 patients and seems to be a poor prognostic symptom.

Remote physical examination

A physical examination will be almost impossible by phone and difficult by video, so you will have to make compromises. In a video consultation, assess the patient's demeanour, whether they are lying in bed or up and about, skin features (such as flushing, pallor, cyanosis—though note that if lighting is suboptimal this can be difficult to assess), and oropharynx. Congestion of the throat and tonsillar swelling are both rare (present in about 2% of covid-19 cases[2]). When making records, note what you can and cannot see. You may or may not get a view of the patient's throat, for example. Assess respiratory function as best you can (box 1).

It may be possible to get the patient to take readings from instruments they have at home—for example, temperature, pulse, blood pressure, blood glucose, peak expiratory flow rate, and oxygen saturation. If you are using video, you can check whether the patient is using their equipment correctly (they may have purchased it only recently). Bring your own device into camera view to show them how to use it if necessary. Fitbit-type gadgets and smartphone apps can measure biomarkers such as pulse (and rarely, oxygen saturation), but there are many such products and their accuracy can be hard to judge. Rarely, patients may have a home oximeter. If you record a reading made by a patient with such a device, also note your confidence in its accuracy, especially if it seems out of line with your wider assessment.

Assess pre-existing conditions and medications taken. Asthma and cardiovascular disease are particularly relevant, and it is important to ensure that these are well controlled and the patient has adequate medication. Attend to mental health. Does the patient sound or appear upset or distressed? Formal mental health assessment instruments are unlikely to be useful in this setting. Are there relevant family issues (which may be within earshot or camera view) such as small children whose care will be affected if the patient becomes more unwell?

What you should do

Managing mild or moderately severe illness

Most community based patients with covid-19 can be managed by remote advice (infographic). Covid-19 is a frightening illness even if the patient only has mild symptoms. Explain that the condition is managed in a similar way to the flu and often takes a similar course, though it can deteriorate. About four out of five patients will have a relatively mild form of the illness. They should rest and take fluids and symptomatic remedies such as paracetamol. People already taking non-steroidal anti-inflammatory drugs should continue these, but others should avoid remedies such as ibuprofen as some anecdotal reports have raised concerns about its safety in covid-19. Regular medication, including ACE inhibitors and angiotensin receptor blockers,[11] should be continued.

Adjust your advice depending on clinical features, comorbidities, and social support. The patient in the vignette, for example, has asthma so will need advice to step up treatment if her peak flow drops. Those with COPD may need antibiotics for an infective exacerbation.[12] A social safety net will be important in patients living alone.

Explain any arrangements for self swabbing (not currently being offered in the UK, but this may change), dropping off specimens, and picking up medication. If the patient has covid-19 symptoms, remind them to get someone without symptoms and who has not been a close contact to attend the pharmacy on their behalf, and leave the medication at the doorstep and not enter the house. All paperwork, including prescriptions and sick certificates, should be sent electronically. If covid-19 is a presumptive diagnosis, self isolation should occur for seven days, but all household members should self isolate for 14 days from when the index case became ill. If circumstances allow, the person with symptoms should also self isolate within the home and stay as far as possible from vulnerable family members (see risk factors above). All family members should wash their hands regularly with soap and water, and follow the stay at home guidance for advice on cleaning and disposal of waste.[7]

Patients who cannot confidently be classified as having mild illness on the basis of the remote consultation may need to be followed up remotely or seen in person, and you should follow your local protocol for home treatment and monitoring. Comorbidities such as asthma or diabetes may need active management, and serious differential diagnoses such as bacterial pneumonia, meningitis, or sepsis should be considered. Not all acutely sick patients have covid-19.

Safety net advice

Covid-19 can produce rapid deterioration in respiratory function, especially in the second week, so safety-netting advice is important for all patients, even if they are currently well (document that you have done this). Those living alone should identify someone to check in on them regularly. They should maintain a high fluid intake (see infographic), and seek medical help if they deteriorate. In particular, if they have difficulty breathing, feel faint, stop passing urine, or are unable to keep down fluids, they should call their GP or out of hours service as appropriate (or follow your local protocol). Ask them to write this advice down or send a patient information leaflet electronically.

The sick patient

Patients who are very unwell, and especially those with possible pneumonia, need to be urgently assessed either by video or in person, depending on the clinical circumstances. The clinical criteria for hospital admission in covid-19 pneumonia are the same as for any other pneumonia, but in the current crisis there may be additional restrictions. The best clinical signs to predict community acquired pneumonia in an adult are a temperature above 38°C, respiratory rate above 20 breaths/minute, and heart rate above 100 beats/minute with new confusion; low urine output is also a concerning symptom.[13] Anecdotal reports from UK secondary care suggest that hypoxia is often used as a cut-off for admission. Both the World Health Organisation and a guide based on the China experience recommend a cut-off level of 93% for classifying pneumonia as severe.[14 15] Current UK NHS guidance recommends hospital admission if saturation on air is below 94%.[16] Additional features in children include grunting, central cyanosis, and inability to breastfeed.[14 15]

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We recommend that, in the case of patients with a very poor prognosis (for example, multimorbidity and other risk factors), a "ceiling of treatment" conversation is considered.[17] If the patient is very sick and death almost inevitable whether ventilated or not, some people may prefer to stay home and opt for palliative management. Many such patients will already have an advance care plan and DNACPR (do not attempt cardiopulmonary resuscitation) flag, and in those who do not, urgent efforts should be made to put these in place to avert unwanted emergency intervention.

Notification

Covid-19 is a notifiable disease in the UK. Laboratory confirmed cases should be notified immediately; current professional consensus is that clinically suspected cases should also be notified.

At the time of writing, the situation is changing rapidly. This article will be updated as new evidence emerges. National and local protocols are likely to emerge for the topics covered in this article and other aspects of care in covid-19.

How this article was created

The article was produced at speed to address an urgent need for guidance. Advice on management of covid-19 was captured in real time from published[1 2] and unpublished research findings (much of it from China) and official guidance.[14 15] In the absence of direct research evidence on how to assess breathlessness over the phone, we also sought expert opinion through a brief straw poll survey of 50 people (mostly doctors) who do this in their job. Advice on telephone consultations is based on a previous *BMJ* review[18] and a fast-track grey literature paper on telephone advice in covid-19.[19] Advice on video consulting is based on research by TG's group and others (including an extensive narrative review of the literature, various empirical studies, and data currently being written up for publication)[3-5 20] and guidance produced by the Scottish Government and an English NHS trust to which TG's team contributed.[21 22]

Education into practice

- How would you feel if you or a close relative were unwell with suspected covid-19 and wanted to see a doctor, but you were offered a phone call instead?
- There are many available tools for video consulting, which are not difficult to set up. What will you need (hardware and software) to get one up and running in your surgery now?
- Do you know your local protocol for arranging emergency admission of a patient with covid-19?

How patients were involved in the creation of this article

Patients with covid-19 or possible covid-19 were not involved in the writing of this paper for practical reasons.

Contributors: TG and GKCH conceived the article and are guarantors. GKCH produced an initial outline of a clinical consultation assisted by Fan-Shuen Tseng (medical student). TG amended general guidance she had previously produced on video consultations to address the specific situation of a possible covid-19 case. TG drafted the article, which was amended by GKCH and JC, and agreed by all authors.

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Infographic for printing out

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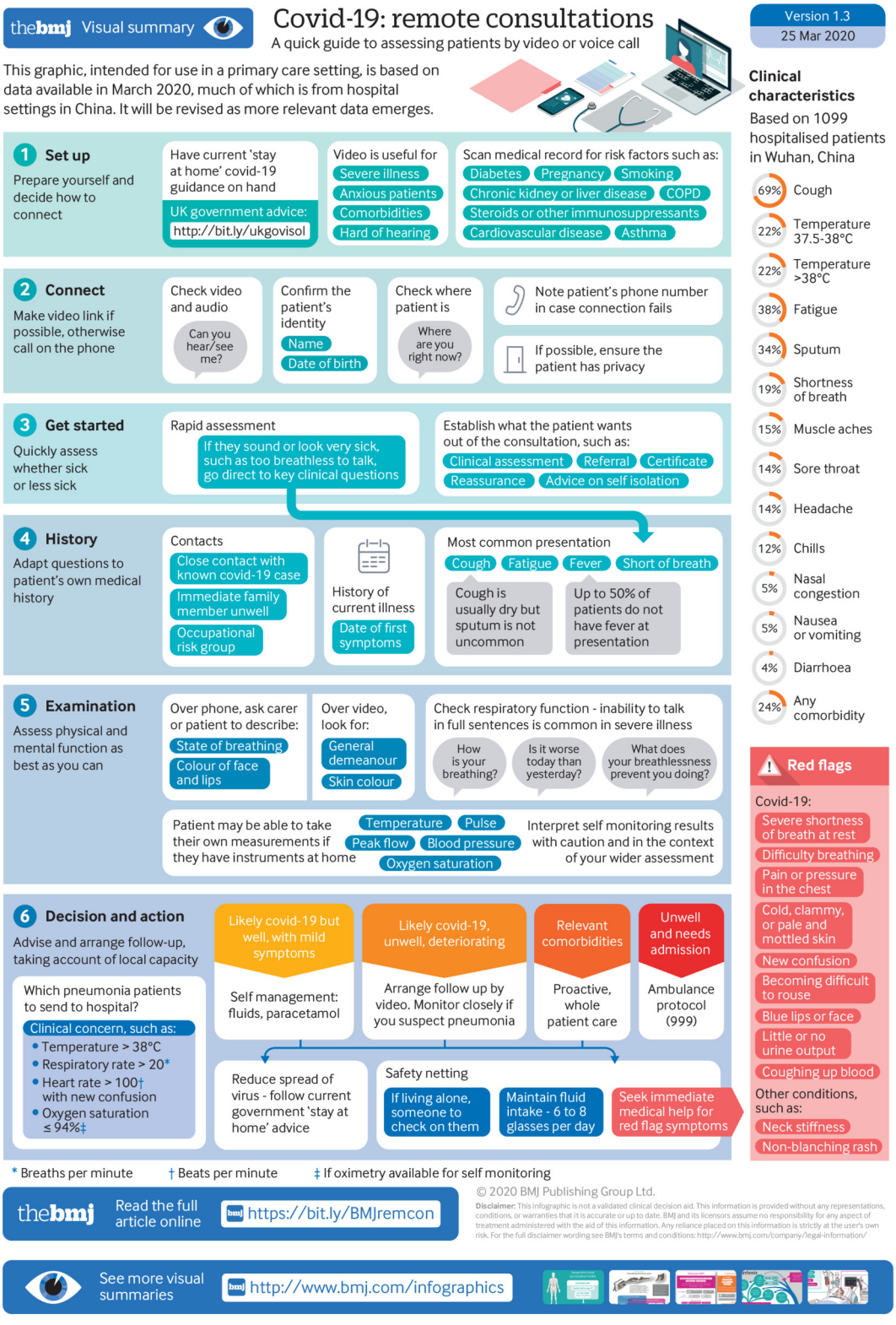

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