

Novel coronavirus (COVID-19) standard operating procedure COVID Oximetry @home

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.

Updates to the SOP published on 1 March 2021 are highlighted in yellow.

1.1 Requirement

In November 2020, clinical commissioning groups (CCGs) were recommended to put in place a 'COVID Oximetry @home' model as rapidly as possible. CCGs should ensure that COVID Oximetry @home services remain available to support COVID-19 patients.

This document sets out a base standard based on patient self-monitoring. It should not supplant existing arrangements where these are already established and working.

1.2 Entry criteria

The COVID Oximetry @home pathway should be available to people who are:

- i. Diagnosed with COVID-19: either clinically or positive test result **AND**
- ii. Symptomatic **AND EITHER**
- iii. Aged 65 years or older **OR**
- iv. Under 65 years and at higher risk from COVID-19, or where clinical judgement applies considering individual risk factors such as pregnancy, learning disability, caring responsibilities and/or deprivation. Further information about clinical judgement can be found on our website. Pregnant women being referred to a COVID Oximetry @home service should also be asked to contact their maternity team for specific advice around pregnancy and COVID-19.

A lighter touch pathway should be available to any adult aged 18 – 64, that has tested positive and has not been double vaccinated. This pathway is fully self managed and escalated.

1.3 Staffing and oversight

The default assumption is that the model is primarily implemented in general practice, e.g. including in hot hubs, working with community teams. Funding is currently available through the COVID Capacity Expansion Fund. Referrals of the defined cohorts will also come via NHS 111, Clinical Assessment Service (CAS), NHS Test and Trace, ambulance services, maternity services and hospital emergency departments.

Legal responsibility, including ensuring appropriate clinical governance, remains with the relevant CCG. Each CCG should have a named person responsible for the establishment of the service in their area. Clinical, governance and administrative responsibilities included in the pathway can be provided by any appropriately trained person and best use of resources should be made, including asking NHS

Volunteer Responders to transport oximeters and patient packs, and the use of standard scripts to enable non-clinical staff (e.g. health care assistants, care navigators or volunteers) to undertake appropriate activities.

Where relevant, patients may benefit from a review of long-term condition management in the context of acute COVID illness, and the responsibility for this lies with the patient's primary care physician and/or hospital specialist.

1.4 Patient journey

Referral (Stage 1)

- Systems should ensure timely referral of patients that may meet the entry requirements from all relevant providers operating within their area, e.g. NHS 111, Clinical Assessment Service (CAS), Test and Trace, ambulance services, maternity services and hospital emergency departments.
- Arrangements will vary depending on how the pathway is delivered, e.g. through individual primary care networks or a single community health service.
- Patients should be advised to self-isolate in line with current guidance.

Triage (Stage 2)

- Patients referred to the service should have a standard assessment (with potential for face-to-face clinical assessment if deemed necessary), with shared decision-making prior to entry onto the pathway and a discussion about any support requirements for patients or carers. This should happen as soon as possible, and ideally the same day as the referral.
 - a. If at a hot site, then assessment should be done face to face and a baseline pulse oximetry reading taken; consider home oximetry monitoring if oxygen saturation levels are 95% or higher and proceed to stage 3. If oxygen levels are 94% or less, consider further clinical assessment, or proceeding to stage 3 with the option of more intense clinical assessment and oversight in the community, or hospital admission e.g. if 92% or less. If a pregnant woman records pulse oximeter readings of 94% or less they require clinical review and should be advised to attend their hospital immediately or call 999.
 - b. If contacted by phone or video, consider virtual assessment using a standard questionnaire and the need for a baseline oximetry reading either by visiting a hot site or home visit.

Onboarding (stage 3)

- Patients entering the pathway should be provided with a pulse oximeter and supporting information (including a paper diary which is available in [accessible formats and a variety of languages](#), or suitable app/regular call mechanism), contact details to report oximetry reading/symptoms, and clear [safety netting instructions](#) both in and out of hours. This should be supplied immediately if the patient is seen face to face or within 12 hours if the patient is assessed remotely. Patients should be instructed to attend their nearest emergency department within an hour, or call 999 if their saturation reading is 92% or less, or to contact 111/GP if 93% or 94%. **Pregnant woman should be advised to contact their midwife, maternity team or GP if their blood oxygen levels are dropping. Pregnant women with pulse oximeter readings of 94% or less require clinical review and should be advised to attend their hospital immediately or call 999.**
- For patients not seen face to face, NHS Volunteer Responders are available to help transport oximeters from a locally agreed location to the patient's home. Further details on this can be found at: <https://nhsvolunteerresponders.org.uk/referral>
- Patients should be encouraged to record oximetry readings daily, usually three times a day. Through a shared decision-making conversation, they are also given the option of a prompt at days 2, 5, 7, 10 and 12, either by (a) text message or (b) by e-mail, or instead (c) a non-clinician led check-in phone call.
- **A lighter touch pathway may be appropriate for the wider adult population. This would include any adults aged 18 – 64, that have tested positive and have not been double vaccinated. This would include full self management and escalation, without prompts. This should be agreed through a shared decision-making conversation.**
- Patients should have clear instructions regarding the recognition of deterioration and instructions on the appropriate course of action, with 24/7 access to advice and support. Contact details must be communicated clearly to patients.
- Patients should agree in advance how they will return the oximeter, e.g. by either the practice or the patient arranging an NHS Volunteer Responder.

Monitoring (stage 4)

- As agreed during onboarding, patients should receive **either**
 - a text message, email prompts, **or** check-in calls. A model message and phone script can be found on the NHS @home Future NHS platform (link below). **OR**

- support to self manage and escalate. Resources for patients, carers and families can be found on [our website](#).
- Where check-in calls are needed, the calls should confirm that the patient is using the oximeter and diary correctly. If the phone call is clinician led, they may also be used to confirm the readings are 95% or above. The frequency of these calls can be reviewed with the patient if appropriate. If a pregnant woman records pulse oximeter readings of 94% or less they require clinical review and should be advised to attend their hospital immediately or call 999.

Recovery and discharge (stage 5)

- Patients generally recover within 14 days of onset of symptoms and should be actively discharged at this point if they have not shown signs of deterioration and supplied with leaving information, safety netting and safe advice on how to return the oximeter (e.g. to hot site, by a friend or family member, or through NHS Volunteer Responders). Model advice can be found on the NHS @home Future NHS platform (link below).
- Patients may be on the pathway for a shorter period either if they have been awaiting a test result and this is negative, or subject to clinical review.
- Patients who remain symptomatic at 14 days should receive a further clinical assessment and action taken as clinically appropriate.
- If symptoms become chronic and extend past 12 weeks, referral to [Post COVID clinics](#) should be considered.
- At the end of this stage, a friend or family member, or an NHS Volunteer Responder, collects and returns the oximeter for decontamination and reuse, as agreed as part of the onboarding conversation.

1.5 Oximeter supply and safe re-use

Oximeters for home use must meet ISO 80601-2-61:2017 and be CE marked.

Particular care needs to be given to ensuring reliable arrangements are in place for same day oximeter distribution to patients, and their subsequent decontamination and reuse. Cleaning procedures for oximeters must follow manufacturers' instructions. Liquids should generally not be used on these devices due to the risk of fluid ingress damaging circuits. Disinfectant wipes should be used where possible.

A supply of pulse oximeters is available to CCGs based on national modelling assumptions of case demand. CCGs can request suitable oximeters from NHS Supply Chain in batches of 100, to be stored locally as appropriate for anticipated

demand. Oximeters can be requested by emailing england.home@nhs.net. Once the order is agreed, delivery to the requesting CCG should be made within three working days. When requesting oximeters it is important to include the population numbers covered and where the service is sited.

Prior to being distributed to patients, and on return from them, oximeters must be decontaminated in line with [infection control policies](#) for reusable electronic equipment. They must be checked that they are functional and safe for re-use prior to being allocated to new patients. This should be done in line with local and national guidance for reusable electronic clinical monitoring equipment.

It is important to note that CCGs must ensure there are wholly reliable local arrangements in place for timely distribution, decontamination, and re-use of sufficient oximeters.

Oximeters must be available for same day distribution to patients, including out-of-hours. Patients should ideally not have to wait more than 12 hours to receive an NHS oximeter.

1.6 Care homes

People living in care homes should receive the same standard of care as someone in their own home. This should be facilitated by care home staff and other supporting services. This should include full escalation or emergency admission or potential emergency home oxygen treatment and palliative treatments where appropriate.

Training and support for using pulse oximetry is available via the [Care Provider Alliance](#) and [e-Learning for Healthcare resources](#). The COVID Oximetry @home monitoring diary has also been tailored for care home usage (see NHS @home Future NHS platform – link below). Any further support required in setting up the pathway within the care home can be provided through the care home's named Clinical Lead in the first instance.

1.7 Coding, record keeping and data requirements

SNOMED codes specific to home monitoring of COVID-19 patients can be accessed on the [NHS Digital website](#). A number of templates have been created by local Integrated Care Systems (ICS) as well as by Ardens, EMIS, TPP, Cegedim and accuRx.

All relevant information should be recorded in the patient record including if a patient declines the pathway.

NHS Digital is sharing data with COVID Oximetry @home providers to assist in identifying patients who may be onboarded onto local pathways. To receive this daily list please contact dataliaison@nhs.net.

COVID Oximetry @home providers are required to submit data on COVID Oximetry @home patients on a weekly basis to NHS Digital SDCS. For further information or support please contact dataliaison@nhs.net.

1.8 Further support

Details of further advice, guidance and training materials including academic health science networks (AHSNs) and patient safety collaborative contacts for bespoke support is available on the NHS @home Future NHS platform: <https://future.nhs.uk/NHSatH/grouphome>.

Any safety concerns regarding oximeters should be reported to the MHRA via the COVID yellow card scheme (select 'other devices/equipment') <https://coronavirus-yellowcard.mhra.gov.uk/> and NHS England and NHS Improvement informed (england.home@nhs.net). Local clinical engineering departments and medical device safety officers (MDSOs) should also be informed.

The MHRA have detailed [factors affecting the accuracy of pulse oximeters](#), including skin colour. Pulse oximeters work by shining a light into the skin and measuring how this is absorbed by the blood to estimate how much oxygen is present. Because of this, it is possible that patients with lighter skin may have small differences in the result reported when compared to those with darker skin. This is just one factor that can alter the result produced.

Other well-known factors include: low perfusion, movement, nail polish, henna dye, tattoos, probe mispositioning, ambient lighting hitting the sensor.

The MHRA is not aware of any incidents where skin colour has had an adverse effect on the use of pulse oximeters when providing effective clinical care. Wherever possible it is recommended that patients record a baseline oxygen saturation at onboarding, and subsequent changes in saturation readings are then compared to this established baseline.

If there are any issues accessing [links](#) or for further queries, please email england.home@nhs.net.