

COVID-19: Remote Oxygen Monitoring in Maternity Services

Implementation Guidance for Professionals

DOCUMENT CONTROLSHEET

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Author:	Laura Brown & Nirmala Mary
Owner:	Laura Brown & Nirmala Mary
Approver:	Carsten Mandt
Approved by and Date:	NMN Core Steering Group 19/11/21
Contact:	Laura.brown8@nhs.scot
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NOTE

This guideline is not intended to be construed or to serve as a standard of care. Standards of care are determined on the basis of all clinical data available for an individual case and are subject to change as scientific knowledge and technology advance and patterns of care evolve. Adherence to guideline recommendations will not ensure a successful outcome in every case, nor should they be construed as including all proper methods of care or excluding other acceptable methods of care aimed at the same results. The ultimate judgement must be made by the appropriate healthcare professional(s) responsible for clinical decisions regarding a particular clinical procedure or treatment plan. This judgement should only be arrived at following discussion of the options with the patient, covering the diagnostic and treatment choices available. It is advised, however, that significant departures from the national guideline or any local guidelines derived from it should be fully documented in the patient's case notes at the time the relevant decision is taken.

COVID-19 Remote Oxygen Monitoring in Maternity Services Implementation Guidance

1.0 INTRODUCTION

Recent data from the UK Obstetric Service (UKOSS), published on 25 July, shows that the number of pregnant women being admitted to hospital with COVID-19 is increasing and many experiencing acute symptoms. The data suggests that the Delta variant that is currently dominant in the UK is associated with an increased risk of severe illness among hospitalised pregnant women, compared with the Alpha and 'wild type' variants of previous waves.

All health boards have seen a rise in COVID-19 positive pregnant women and admissions to ITU with some women needing ventilation and preterm delivery. Approximately 10-17% of known COVID-19 infected women have required admission to hospital for further assessment. Up to 30 COVID-19 positive pregnant women have been admitted per day in the United Kingdom. Observationally, a significant number of women have been admitted in extremis and needed ITU admission directly from home.

While Royal College of Obstetricians (RCOG) and Royal College of Midwives (RCM) produced updated guidance on 20th August 2021 to recommend vaccination against COVID-19 in pregnancy, slow uptake of the vaccine amongst pregnant women in Scotland remains concerning¹.

Early detection of deterioration at home, would give us the opportunity to admit these women earlier, intervene and provide appropriate inpatient care for unwell women ie commence women on oxygen, give steroids for fetal lung protection in deteriorating women and commence maternal steroid treatment. This would potentially prevent further deterioration (ITU admission, preterm delivery and potentially other long term health problems related to COVID-19).

As we progress through the current wave, there is opportunity to consider the wider implementation of the remote monitoring pathway to support pregnant women, to help detect early deterioration and offer timely intervention for those who need it. Pulse oximeters used at home can detect hypoxia associated with acute COVID-19.

Please also see SIGN guidance: [COVID-19 Clinical Advice - Maternity Care](#)

2.0 BACKGROUND – GENERAL ADULT POPULATION

The COVID-19 remote monitoring pathway was developed to support the general adult (non-pregnant) population with the virus to self-monitor their symptoms at home. Patients are “onboarded”, given information about self-monitoring along with a pulse oximeter, and are invited to upload their readings using a variety of sources, including a digital app which is supported through the Inhealthcare platform.

Through monitoring for signs of early deterioration, patients are prompted to contact for health care support, which may result in advice, being seen by a healthcare

¹<https://www.ed.ac.uk/usher/research/projects/COVID-19-pregnancy-scotland>

professional, or being admitted to hospital. This could also support discharge of patients once fit for discharge.

In the general population supported self-monitoring of patients with COVID-19 at home has been evaluated as reassuring to patients, acceptable to clinicians, and can detect important signs of deterioration. Worryingly, some patients, because they felt well, occasionally ignored important signs of deterioration. It is important, therefore, to emphasise the importance of the early investigation and treatment of asymptomatic hypoxia at the time when patients are initiated and in the warning messages that are sent to patients².

2.1 BACKGROUND – MATERNITY

During the summer of 2021, the general adult home oxygen monitoring pathway was adapted and piloted within NHS Lanarkshire maternity services. This Implementation Guidance is to support national rollout across all maternity services in Scotland.

Insights from the pathway suggest some symptomatic COVID-19 positive women have felt reassured by the opportunity to choose to monitor at home following discharge from a hospital medical or maternity unit or from Day care/Community maternity assessment.

However, a degree of ambivalence towards home oximetry is common amongst asymptomatic Covid-positive pregnant women, leading to poor engagement and effectiveness. Therefore, asymptomatic women should not be offered home pulse oximeters and remote monitoring.

3.0 PROCESS

Each board will assess availability and options of use of the Inhealthcare platform (see 3.0 below)

The national Inhealthcare platform can be used to support home oxygen monitoring. Boards may choose to use and adopt the Inhealthcare platform alongside other follow-up approaches, such as by telephone or NHS NearMe.

NHS Boards without access to the Inhealthcare platform can explore alternative arrangements, such as using only telephone or NHS NearMe to monitor oxygen levels at home.

Monitoring approaches which are supported by digital platforms, such as apps or portals, have demonstrated enhanced data-capture as compared to manual approaches such as phone calls and paper records. Manual approaches can in some circumstances, be more inclusive; however may also be more resource intensive.

² McKinstry B, Alexander H, Maxwell G, Blaikie L, Patel S, Guthrie B, Technology Enabled Care TeleCOVID Group Study. The Use of Telemonitoring in Managing the COVID-19 Pandemic: Pilot Implementation. JMIR Form Res 2021;5(9):e20131 doi: [10.2196/20131](https://doi.org/10.2196/20131) PMID: [34449404](https://pubmed.ncbi.nlm.nih.gov/34449404/)

Therefore, it is the responsibility of each Board to explore digital options with their local TEC team and make decisions they consider most appropriate locally. Local implementation arrangements may also consider whether staff who are, for example, working from home or self-isolating, could have a role in supporting implementation of home oxygen monitoring for pregnant women.

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This new solution is to help people to better self-manage their condition and is not intended to remove the need for a face to face consultation where that is in a person's best interests. This is an important additional tool to prevent the need for unnecessary appointments, to enhance quality of conversation and to improve outcomes.

See Clinical Guidance for further details.

4.0 SUPPLY OF PULSE OXIMETERS

There is currently sufficient national stock of pulse oximeters that can be ordered when adopting the use of the Inhealthcare platform. Supplies can be ordered from nss.tec@nhs.scot.

5.0 AVAILABILITY OF THE INHEALTHCARE PLATFORM

The table below details the infrastructure status of the Inhealthcare platform by NHS Board as at September 2021.

NHS Board	Infrastructure Status
NHS Borders	Do not currently have Inhealthcare integrated
NHS Fife	
NHS Lothian	
NHS A&A	Have Inhealthcare; not yet used in maternity services but potentially could be implemented
NHS D&G	
NHS FV	
NHS GG&C	
NHS Grampian	
NHS Highland (N)	
NHS Highland (W)	
NHS Orkney	
NHS Shetland	
NHS Tayside	
NHS Western Isles	
NHS Lanarkshire	

The pathway and Inhealthcare system are intuitive and easy to use, so minimal staff training will be required.

The national TEC team can provide a level of support to enable system set up along with some initial training and ongoing support as required. Local TEC colleagues can be approached directly, or contact details can be requested from nss.tec@nhs.scot.

4.0 SUITE OF HOME OXYGEN MONITORING IN PREGNANCY RESOURCES

In addition to this Implementation Guidance, the pathway is supported by:

- [Clinical Guidance](#)
- [Patient Information Leaflet](#)

6.0 IMPLEMENTATION PLAN

In a letter to Chief Executives dated 21 September 2021, John Burns, Chief Operating Officer NHS Scotland, wrote:

“The contract, with Inhealthcare Limited, extends the availability of services provided through their digital health platform to all Health Boards and Health and Social Care Partnerships across Scotland for the next three to five years.

The costs of the contract are being met nationally through the Digital Health and Care Directorate and include all hosting, licencing and communications charges.

The existing national Remote Health Pathways Programme, in Partnership with the Centre for Sustainable Delivery, will coordinate pathway development, testing and release activities to manage equitable access for health and care services across the system.

A development pipeline for new pathways is already active and productive and will be supporting the transition of pre-existing pathways currently hosted on other platforms. Decisions about the addition of new pathways to the pipeline is being supported with a process, currently in train, to collect and collate Territorial Board and HSCP priority requests for new pathways. For more information on the pathways and how to engage further please see [Remote health monitoring | Turas | Learn \(nhs.scot\)](#) or contact nss.tec@nhs.scot

We have seen the important role that digital solutions can offer and I would ask all Boards to engage in this programme and to support the provision of improved access for citizens”.

All maternity units are, therefore, encouraged to consider implementing the new [pathways](#), with support from Scottish Association of NHS Medical Directors (SAMD) and NHS Board Chief Executives. Remote Health Monitoring learning can be accessed via [Turas](#). For further information or queries please contact the National programme at NSS.TEC@nhs.scot.