# Resumption of Carbon Monoxide monitoring in Maternity within Covid 19 Pandemic

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<tr>
<th>Author</th>
<th>Author’s job title</th>
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<td>Health Improvement Specialist Midwife</td>
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<th>Directorate</th>
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**Superseded Documents**

**Issue Date**
March 2021

**Review Date**

**Review Cycle**
Three years or as COVID restrictions require.

**Consulted with the following stakeholders:**
- Public Health England
- NCSCT
- Infection Control
- RCM clinical briefing statement
- Accident and Emergency Lead Nurse
- All users of this document

**Contact responsible for implementation and monitoring compliance:**
Health Improvement Specialist Midwives

**Education/training will be provided by:**
Health Improvement Specialist Midwives

**Approval and Review Process**
- Maternity Service Governance Group

**Local Archive Reference**

**Local Path**

**Filename**
<table>
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<td>Pregnancy</td>
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1. Background

1.1. Carbon monoxide is a poisonous gas contained in cigarette smoke. It can affect the body’s ability to transport oxygen around the body which therefore reduces oxygen to the baby. Carbon monoxide can cross the placental barrier and increase the risk of miscarriage and stillbirth and can affect the growth and development of the baby. A carbon monoxide test is a simple method to help assess whether someone smokes or has been exposed to carbon monoxide in other ways and is a routine part of antenatal care. It is also an essential tool in the discussions around smoking in pregnancy. A raised CO level of ≥4 parts per million is indicative that further investigation or support is required. CO levels can return to normal for both the mother and the baby if smoking is discontinued and this can encourage pregnant people to stop smoking.

1.2. Carbon monoxide monitoring is evidence based and recommended by the National Institute for Health and Care Excellence (NICE) as best practice. Saving Babies Lives Care Bundle Version 2 element one is to offer a practical approach to reducing smoking in pregnancy. It states that this will be achieved by offering a carbon monoxide test at booking and as appropriate throughout pregnancy, but particularly at booking and 36 weeks gestation.

Purpose

1.3. The Standard Operating Procedure (SOP) has been written to:

- Identify the procedure for the assessment and safe delivery of the resumption of carbon monoxide monitoring at face to face antenatal appointments, admissions and in the postnatal period.
- To safely resume this service in a way that reduces transmission of COVID 19 to women and their families and staff.

2. Scope

2.1. This Standard Operating Procedure (SOP) relates to all working within maternity and neonatal services, including Midwives, Obstetricians and Maternity health care assistants.

3. Location

3.1. This Standard Operating Procedure regarding CO monitoring can be implemented in all clinical areas within maternity where competent staff are available to undertake this procedure.
4. **Equipment**

   - The equipment required will be -

   Carbon monoxide monitors, including the use of the Safe Breath mouthpiece. These have a bacterial and viral filtration efficiency of 99.97%. The carbon monoxide monitors currently used within maternity and neonatal services in Northern Devon Healthcare Trust are the Carefusion / Micro Medical carbon monoxide monitors.

5. **Procedure for carrying out carbon monoxide testing to reduce potential risk of COVID 19 transmission.**

   - Carbon monoxide testing should be offered to all pregnant people, prior to their smoking status being asked. CO monitoring should be offered at booking and the result documented. It should then be offered to pregnant people at every appointment as appropriate throughout the pregnancy. The test must be offered at 36 weeks gestation and the result recorded. The test should also be taken after delivery at the time of discharge.

   - Women should have the rationale for carbon monoxide testing explained using the leaflet ‘Test Your Breath’ which is found in the Maternity Resources shared drive, under leaflets for bookings. https://www.cddft.nhs.uk/media/574905/test%20your%20breath%20postcard.pdf


   - Reassurance should be given regarding the precautions. If CO testing is declined then this should be documented within the handheld notes. If the client has any symptoms of COVID 19 then testing should not be performed.

   - All staff resuming CO testing should adhere to the specific guidance set by the NCSCT and PHE https://www.ncsct.co.uk/usr/pub/COVID-19%20bulletin%202018.11.20.pdf

   - Guidance should also be followed from MD Diagnostics which relates to our CareFusion / Micro Medical monitors used in Northern Devon Healthcare Trust, Maternity. A training video with these precautions can be found here https://www.mdd.org.uk/covid-19-news/
• The Health Professional should be wearing the appropriate PPE in accordance with the Trust Infection Control guidance. Hands should be washed before and after the CO test is performed.

• Ensure the room where the CO testing is taking place is well ventilated. An open window is required. If there is not a window able to be opened then a CO test should not be performed.

• The monitor and surrounding surfaces should be thoroughly cleaned between each client using non-alcohol based wipes. Clinell universal wipes are approved.

• Before touching the machine, where alcohol gel is used on the hands of either the practitioner or the client, it should be allowed to thoroughly dry before handling the machine or mouthpieces as this can affect the result.

• Ensure an individual disposable Safe Breath Mouthpiece is used. This mouthpiece has a filter in built and can be attached directly to the CareFusion / Micro Medical Monitors.

• Carry out the test with a minimum 2 meter distance between the health practitioner and the client, using verbal instructions on how to use the monitor.

• Ensure the client is not directly facing the health practitioner before asking them to remove their masks and then holding their breath for 10-15 seconds and then fully exhaling into the monitor.

• Ask the client to reapply their mask and then dispose of the Safebreath mouthpiece into a closed hazardous waste bin with a lid themselves. The client should then wash their hands or use hand sanitiser.

• Refer to the ‘What to do with a CO result’ flowchart as per the Smoking in Pregnancy Guideline.

• CO monitoring is not classed as an aerosol generating procedure (AGP) and so does not require a FFP3 mask for the advisor undertaking the test.

• If sufficient PPE is not available or the room conditions are not conducive to safe working (in terms of space or ventilation) the health practitioner must risk assess accordingly and not undertake the test and clearly document this reason within the hand held notes. Continue to give very brief advice regarding smoking and make a referral to One Small Step smoking cessation specialist services if smoking disclosed. All smokers should also be given the RCOG Patient information leaflet ‘Smoking in pregnancy’, also found in the maternity resources shared drive under leaflets.
6. **Training**

- Update training will be provided by the Health Improvement Specialist Midwives and staff can undertake e-lfh online training [https://portal.e-lfh.org.uk/Component/Details/679733](https://portal.e-lfh.org.uk/Component/Details/679733). A laminated flowchart of ‘how to use’ will also be attached to each CO monitor.

7. **Associated Documentation and References**


- MD Diagnostics [https://www.mdd.org.uk/video-resources/](https://www.mdd.org.uk/video-resources/)


- NCSCT Stopping smoking in pregnancy: a briefing for maternity care providers. [https://www.ncsct.co.uk/usr/pub/NCSCT%20maternity%20care%20briefing.pdf](https://www.ncsct.co.uk/usr/pub/NCSCT%20maternity%20care%20briefing.pdf)

- NICE PH26 [https://www.nice.org.uk/guidance/ph26](https://www.nice.org.uk/guidance/ph26)

- NICE PH48 [https://www.nice.org.uk/guidance/ph48](https://www.nice.org.uk/guidance/ph48)

Flow Chart for performing CO Monitoring

1. Ensure room is well ventilated, keep a window open where possible.
2. Clean monitor and surrounding areas using a Clinell Wipe between clients.
3. Before touching the machine both Health Practitioner and client should allow alcohol gel to dry thoroughly.
4. Use an individual Safe Breath disposable filtered mouthpiece which can be attached direct to monitor without the plastic holder. Turn on and give to the client.
5. Carry out the test with a 2 meter distance between the health practitioner and the client.
6. Ensure the client is not facing the health practitioner and ask them to remove their mask. Ask the client to inhale and hold their breath for 10 seconds and then exhale fully into the mouthpiece.
7. Ask the client to replace their mask and dispose of the mouthpiece themselves into a clinical waste bin and then wash their hands/use sanitiser.
8. Discuss the result with the client. Use opt out referral to OneSmall Step if result > 4ppm. Document the result within the handheld notes.
What to do with a CO Screen result.

**CO Level ≥ 3ppm or less**
- Normal result.
- Record in maternity notes.
- CO screen at each antenatal contact.
- A CO test must be taken at 36/40 and documented.
- A CO test should be taken at discharge and documented.
- Non Smoker
- Smoker
  - Refer to One Small Step, specialist smoking cessation service unless declined.
  - CO Screen at every antenatal contact.
  - Document result in maternity notes.
  - Discuss Smoke free homes and refer household members if consent gained.
  - Give 'Tommy's Feeling your baby move is a sign that they are well' leaflet.

**CO Level ≥ 4 ppm**
- Discuss signs and symptoms of CO poisoning.
- Discuss second hand smoke. Household members can be referred to One Small Step by maternity (with their consent) or they can self refer.
- Give Gas Safety advice line number 0800 300 363.
- Recheck at next Antenatal contact.
- Record in Maternity notes.
- Non Smoker
- Smoker
- Refer to One Small Step, specialist smoke cessation service.
  - CO Screen at every contact.
  - Discuss smoke free homes.
  - Discuss signs and symptoms of CO poisoning.
  - Give 'Tommy's Feeling your baby move is a sign that they are well' leaflet.

**CO level ≥ 15 or symptomatic**
- Anyone who is symptomatic of carbon monoxide poisoning or who has a CO ≥15 that is not associated with smoking (either themselves or of second hand smoke) should be referred to A+E for further investigation of carbon monoxide poisoning.

Women should be asked about their smoking status at every contact or admission and this should be recorded in their antenatal notes.