Smoke-Free Pregnancy Guideline

Author/Owner	Public Health Midwife/Specialist Stop Smoking Midwife	
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Distribution	Barnsley Hospital NHS Foundation Trust – intranet Please note that the intranet version of this document is the only version that is maintained. Any printed copies must therefore be viewed as "uncontrolled" and as such, may not necessarily contain the latest updates and amendments	

Table of Contents

1.0 Introduction

This guideline is intended to provide support for all healthcare providers giving care for pregnant women who smoke. The aim is to help reduce the harm caused by smoking and to reduce the prevalence of smoking in pregnancy. The current target, set by the Department of Health in their **tobacco control plan** for England, is to reduce the prevalence of smoking during pregnancy to 6% or less by the end of 2022 and based on the NHS Long Term Plan a reduction to 5% by 2030.

Reducing the incidence of smoking in pregnancy improves life chances for children. Current prevention work during pregnancy places emphasis on supporting all pregnant women who smoke inclusive of those from deprived populations, under-served communities and those in routine and manual occupations.

Women who smoke should be supported with quitting as early as possible in pregnancy. In addition, on admission to the maternity ward smokers will benefit from an immediate offer of NRT and support from the specialist Maternity Stop Smoking Team.

Nicotine Replacement Therapy (NRT) aims to replace the nicotine from cigarettes by other means of delivery such as transdermal patches, lozenges, sublingual tablets, gum, mouth spray, inhalators or nasal spray. The nicotine contained in tobacco is not particularly harmful, it is the carbon monoxide (CO) and tar in tobacco smoke that cause most of the health problems. NRT does not deliver any of the other potentially disease-causing agents that cigarettes do. NRT therefore provides a background level of nicotine that reduces craving and withdrawal, while producing lower blood nicotine concentrations than smoking does.

NRT is safe to use during pregnancy, the postnatal period and for breast feeding mothers. However, to be effective, women consenting to NRT do benefit from referral to the Maternity Stop Smoking Team for behavioural change support. This gives the best possible chance of a successful quit attempt.

2.0 Objective

This guideline enables health professionals to identify women at risk of the effects of smoking in pregnancy or of second-hand smoke inhalation. The guideline supports staff to offer all women information on the adverse effects of smoking or being exposed to second hand smoke inhalation in pregnancy while promoting smoke free homes and cars. The guideline incorporates a clear system of support and referral to support services for all pregnant women and their partners.

3.0 Scope

This guideline has been written to support staff on the Barnsley Birthing Centre (BBC); Maternity Triage; Antenatal Postnatal (ANPN) ward, Early Pregnancy Gynaecology Assessment Unit (EPGAU) and community-based staff caring for women who smoke in pregnancy. For ongoing advice and support, consenting inpatients should be offered a referral to the Maternity Stop Smoking Team. Smokers are four times more likely to quit successfully when in receipt of expert health and advice. This guideline will apply to all midwives, maternity support workers, obstetricians and healthcare professionals involved in the care of pregnant smokers; the guideline also supports the administration of nicotine patches on the maternity wards.

4.0 Main body of the document

4.1 Carbon Monoxide Testing

As part of routine antenatal care, Carbon Monoxide (CO) testing will be offered at booking and subsequent antenatal appointments for all women regardless of their smoking status. In addition, all women attending the BBC, Maternity Triage and the ANPN ward must be assessed for exposure to tobacco smoke. They must be asked if they smoke, and must be offered routine CO testing regardless of whether or not they smoke. The effect of CO on maternal and fetal health will be discussed by the midwife regardless of smoking status.

The midwife should explain that CO is a poisonous gas and that CO screening is a simple routine part of antenatal care. Also, that cigarette smoke, environmental factors such as pollution from car exhaust fumes, faulty gas appliances and second-hand tobacco smoke can all result in raised CO readings. The woman should be informed that the raised level can be reversed by avoiding these things.

The 'Test your Breath' information leaflet should be provided to all women at the booking appointment see (Appendix 2).

The midwife should explain that CO affects the body's ability to transport oxygen around the body, which reduces the oxygen available to the baby. CO levels are also a marker for a woman's exposure to smoking. Cigarette smoke contains thousands of chemicals of which hundreds are toxic and may also cause damage to the fetus.

The woman needs to be made aware that a raised CO reading is linked to poor fetal outcomes due to hypoxia. These include placental insufficiency which can slow the baby's growth or result in miscarriage.

A CO test is an immediate and non-invasive biochemical method for helping to assess whether or not someone smokes; or if someone is exposed to harmful levels of carbon monoxide. The aim of the CO testing in Barnsley is to:

- Increase the detection of smokers
- Increase the referrals of pregnant smokers and their families into the Maternity Stop Smoking Service in line with NICE guidelines
- Reduce smoking during pregnancy.

CO testing can be used as a motivational tool to support the attempt to quit.

4.2 Equipment for CO testing

Maternity staff undertaking CO testing will be issued with:

A CO monitor (individual serial number logged on Maternity Stop Smoking database)
Plastic D-pieces (to be replaced monthly)
Disposable straw mouth pieces (single use)
Patient Information leaflet (Public Health England)

Each Midwife, Maternity Support Worker and Maternity Stop Smoking Advisor (MSSA) is responsible for the safe keeping of their equipment. The responsibility for reporting faults,

damage or loss of equipment rests with individual staff members unless the equipment is registered to a particular unit (BBC, ANPN, ANC, ANDU, EPGAU), where the unit manager will hold responsibility for equipment.

4.3 Infection Control

Staff are responsible for wiping the CO monitor with a clinical non-alcohol wipe between patients.
All patients will be advised to sanitise their hands with hygienic hand rub provided by the Trust before and after handling the CO monitor.

Single use mouthpieces should be removed and disposed of as clinical waste.

If the woman has an obvious respiratory infection, CO monitoring should not be performed.

4.4. Method for CO testing

Explain the procedure clearly to the patient. Use Trust approved interpreters if this is required.

- Turn the monitor on
- Assemble D piece and insert straw
- Press the female icon and the machine will start to count down.

Ask the woman to:

- Take a deep breath and hold it until the machine is ready (the machine will count down from 15 seconds). **DO NOT** talk to the woman while she is holding her breath
- Blow slowly into the machine on the 3rd beep

See Appendix 3 for how to conduct CO testing.

4.5 Interpretation and documentation of the results

The results will depend on the smoking status of the woman and the time lapse since the last cigarette.
A CO reading below 4ppm (parts per million) is normal.
A CO reading of 4ppm or above is concerning.

A facility is available on all monitors to assess the level of CO in the fetus by pressing the baby icon. The amount of CO in the home environment can be seen by pressing the cloud icon.

The adult, fetal and environmental readings should be discussed with the woman.

4.5.1 CO reading above 4ppm and Confirmed Smoker

All women whose CO reading is 4 parts per million (4ppm) or above, who have been established as smokers, or who have stopped smoking in the last two weeks are offered:

- Support
- Very Brief Advice (VBA)
- Nicotine Replacement Therapy (NRT)
- Electronic referral to the Maternity stop Smoking Services - Explain to the woman that it is normal practice to refer all pregnant women who smoke (or have recently quit) to the Barnsley Stop smoking Specialist Team.

It should be noted that CO levels quickly disappear from expired breath, and so low levels of smoking may go undetected. It is therefore important to establish the number of cigarettes smoked, and when, on the test day.

All midwives and maternity support workers receive annual VBA training and can discuss the risks and benefits of NRT with pregnant women.

4.5.2 CO Reading above 4ppm and Non-Smoker

If the CO reading is 4 part per million (ppm) or above, and the woman is confirmed as a non-smoker, the staff member should try to determine the reason for the raised level. This may be: second-hand smoking; cannabis use; faulty gas appliances.

For women who have not been exposed to smoking but have a raised CO level, it is imperative that professionals understand the increased risk of carbon monoxide poisoning.
If appropriate, the woman should be advised to call the free Health and Safety Executive Gas Safety advice line on 0800 300 363.

Staff should be aware that CO has a short half-life. This means that CO levels will reduce by half after around 3-4 hours. Therefore, following prolonged waits for appointments, women will not have been exposed for some time, and the CO result may not reflect the actual exposure levels. ideally CO testing should be performed as soon as possible on entering the clinical area.

The CO test must be repeated at the next antenatal appointment and throughout pregnancy.

Any symptoms that maybe related to CO poisoning should be discussed. These include:

- tension type headache
- dizziness
- nausea
- tiredness and confusion
- stomach pains
- shortness of breath/breathing difficulty
- ‘flu’ like symptoms - unlike flu, CO does not cause a high temperature
- loss of consciousness.

Document the CO result and action taken on the maternity electronic data collection form, community records, and hospital notes if available.

See Appendix 4 for the pathway for CO testing and referral.

4.6 Maternity Stop Smoking Team

Women can be referred to the Maternity Stop Smoking Team at any gestation of pregnancy. There is no limit to the number of referrals per woman. Following national guidance, an opt out system is used. This means there is automatic referral for all pregnant smokers unless the woman unequivocally declines referral.

Any factors which prevent the woman from using Specialist Stop Smoking services should be addressed e.g. lack of confidence, lack of knowledge around services, fear of failure and concerns about being stigmatised.

The Maternity Stop Smoking Team will offer the woman the option of venue for consultation including but not limited to:

- Home visits/venue of choice
- Telephone consultations
- Video consultations

This is useful in engaging women who are reluctant to attend clinics, those who find access to appointments difficult or those who prefer an alternative venue.

The Maternity Stop Smoking Team will document all consultations in the woman's maternity electronic form. Records will include support given, CO readings, smoking status, quit date, any Nicotine Replacement Therapy (NRT) administered and discussions about smoke free home and home safety checks.

If the woman does not engage or is unable to quit smoking, the Maternity Stop Smoking Team will inform the referrer and document in the woman's maternity electronic data collection form, community records, and hospital notes if available.

The Maternity Stop Smoking Team will have weekly appointment with the woman offering 1:1 support until a 4-week quit is achieved, after which the team will offer monthly support until birth. CO validation is undertaken at each appointment ensuring a quit.

4.7 Referral Criteria

Criteria for referral to the maternity stop smoking service:
Women who smoke
Women who have stopped smoking within the last two weeks (due to risk of relapse)
Use of an E Cigarette (due to risk of relapse)
Have a CO reading of 4ppm or greater (regardless of smoking status)

How to refer:
All referrals must be made electronically through the maternity electronic form.

Paper referrals are accepted only from the Early Pregnancy Gynaecology Assessment Unit (EPGAU).

It should be explained to the woman that it is normal practice to refer to the Maternity Stop Smoking Team as soon as possible in pregnancy. The Maternity Stop Smoking Team will contact the woman within 48 hours.

Advice on the benefits of quitting smoking should be provided. Women must be advised to stop completely with emphasis on the 'quit' rather than cutting down'. This is because cutting down still exposes the unborn baby to the effects of smoking (i.e. stillbirth, miscarriage) and gives the woman a false impression of risk reduction.

Women who decline referral to the Maternity Stop Smoking team must have their decision accepted in an impartial manner. Information about the flexible support offered by the team should be provided. This includes telephone support; home visits; behavioural support and that treatment prescriptions will be sent electronically for woman to collect from their local pharmacy. The offer for help must be left open.

Verbal and written information with Maternity Stop Smoking Team contact details should be provided. The Maternity Stop smoking Team can be contacted on:
Telephone: 01226 432193
Email: maternity.stopsmoking@nhs.net

4.8 Subsequent Antenatal Appointments

The Maternity Stop Smoking service will give feedback to the referring midwife on any non-engagement with the service. This will encourage the midwife to re-address and offer CO testing in the next appointment.

For **all** subsequent antenatal appointments pregnant women will asked about their smoking status and be offered CO testing. This provides a further opportunity for Very Brief Advice to be given and a re-referral to the Maternity Stop Smoking Services. This is a fail-safe mechanism designed to engaged those who initially declined referral; those who have relapsed in their quit attempt; and who have taken up smoking in pregnancy.

All pregnant women should have their smoking status confirmed and their CO testing completed and recorded at 36 weeks gestation in line with the Saving Babies' Lives Care Bundle Version Two. This gives an additional opportunity for any discussion that may support a quit attempt before the birth of their baby.

4.9 In-Patient Care

In line with the Tobacco Dependence Treatment Services all pregnant women admitted to hospital must have their smoking status recorded. Women who have smoked throughout their pregnancy are likely to experience symptoms of nicotine withdrawal during their hospital stay. It is essential that these women are identified as smokers as part of entry into the maternity system e.g. Maternity triage, Antenatal/Postnatal (ANPN) ward, during labour (smoking must be recorded on the partogram); and following the delivery of their baby. This is particularly important for women who have a prolonged postnatal admission e.g. following a premature birth or a caesarean section.

In-patient pregnant smokers will receive the offer on an opt-out referral to the Maternity Stop Smoking Team. In the absence of the Maternity Stop Smoking Team, staff on the ANPN ward and Birth Centre will administer NRT according to the Use of Nicotine Patches on Maternity Wards procedure.

4.10 Postnatal Care

For those women who continue to smoke in the postnatal period, there is a further opportunity to offer Very Brief Advice while they are on the ward.

Encouragement should be given to those women who have remained abstinent during their hospital stay. Continued availability of NRT is crucial to further facilitating the abstinence attempt.

Communication between the maternity and neonatal units and health visitors is important for those infants who live in household where a family member smokes. This will allow colleagues to offer Very Brief Advice and referrals to appropriate services.

Discussions about the risks of second-hand smoke to the baby and information provision is paramount in addressing ways to reduce the risks of Sudden Infant Death Syndrome.

The importance of smoke-free cars and homes must be emphasised.

5.0 Associated documents and references

A call to action (2013) Smoking Cessation in Pregnancy

NHS Five Year Forward View
https://www.england.nhs.uk/five-year-forward-view/

NHS England and NHS Improvement (2021) Tobacco dependence treatment service: delivery model

NICE (2021) Tobacco: preventing uptake, promoting quitting and treating dependence www.nice.org.uk/guidance/ng209

Tobacco Control Plan Delivery Plan 2017 – 2022
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/714365/tobacco-control-delivery-plan-2017-to-2022.pdf

Smoking: Stopping in pregnancy and after childbirth Public health guideline [PH26]
Published date: June 2010

BNF Online accessed: May 2021

Borg, R. and Ashton, A., 2015. A case of overdose via tattoo. Journal of the Intensive Care Society, 16(3), pp.253-256.

Nicoderm (2019) *Frequently Asked Questions.* https://www.nicodermcq.com/faq.html - accessed 19/10/2021

Reeves S, Bernstein I. (2008) Effects of maternal tobacco-smoke exposure on fetal growth and neonatal size. Expert Rev Obstet Gynecol. 3(6):719-730.

6.0 Training and resources

Training will be delivered annually within Midwifery mandatory training as outlined in the Maternity Training Needs Analysis. This is updated on an annual basis. Staff are supported to develop skills and knowledge within their remit of practice and job role. All midwifery staff and maternity support workers will receive training to equip them with the skills to support pregnant smokers, conduct CO testing and recording, provide Very Brief Advice (VBA), and make referrals to the Maternity Smoking Team using the maternity electronic data collection system.

7.0 Monitoring and audit

Minimum requirement to be monitored	Process for monitoring e.g. audit	Responsible individual/ group/ committee	Frequency of monitoring	Responsible individual/ group/ committee for review of results	Responsible individual/ group/ committee for development of action plan	Responsible individual/group/ committee for monitoring of action plan and Implementation
Pregnant women who smoke must receive support in line with this guideline	Review of Datix incident reports related to this guideline	Public Health Midwife and Smoking Specialist Midwife	Annual	Women and Children governance meeting	Public Health Midwife	Overarching CBU3 governance meeting

Any adverse incidents relating to use of the Smoke-Free Pregnancy guideline on Maternity Wards will be monitored via the incident reporting system. Any problems will be actioned via case review and root cause analysis action plans. The action plans are monitored by the risk midwife to ensure that improvements in care are made. The trends and any root cause analysis are discussed at the monthly risk meetings to ensure that appropriate action has been taken to maintain safety.

Use of the Smoke-Free Pregnancy guideline on Maternity Wards will be audited in line with the annual audit programme, as agreed by the CBU. The audit action plan will be reviewed at the monthly risk management meetings on a quarterly basis and monitored by the risk midwife to ensure that improvements in care are made.

8.0 Equality and Diversity

The Trust is committed to an environment that promotes equality and embraces diversity in its performance as an employer and service provider. It will adhere to legal and performance requirements and will mainstream equality, diversity and inclusion principles through its policies, s and processes. This guideline should be implemented with due regard to this commitment.

To ensure that the implementation of this guideline does not have an adverse impact in response to the requirements of the Equality Act 2010 this policy has been screened for relevance during the policy development process and a full equality impact assessment is conducted where necessary prior to consultation. The Trust will take remedial action when necessary to address any unexpected or unwarranted disparities and monitor practice to ensure that this policy is fairly implemented.

This guideline can be made available in alternative formats on request including large print, Braille, moon, audio, and different languages. To arrange this please refer to the Trust translation and interpretation policy in the first instance.

The Trust will endeavor to make reasonable adjustments to accommodate any employee/patient with particular equality, diversity and inclusion requirements in implementing this guideline This may include accessibility of meeting/appointment venues, providing translation, arranging an interpreter to attend appointments/meetings, extending policy timeframes to enable translation to be undertaken, or assistance with formulating any written statements.

8.1 Recording and Monitoring of Equality & Diversity

The Trust understands the business case for equality, diversity and inclusion and will make sure that this is translated into practice. Accordingly, all guidelines will be monitored to ensure their effectiveness.

Monitoring information will be collated, analysed and published on an annual basis as part of Equality Delivery System. The monitoring will cover the nine protected characteristics and will meet statutory employment duties under the Equality Act 2010. Where adverse impact is identified through the monitoring process the Trust will investigate and take corrective action to mitigate and prevent any negative impact.

Appendix 1

Glossary of terms

List all terms/acronyms used within the document and provide a summary of what they mean.

ANC – Antenatal Clinic
ANDU – Antenatal Day Unit
ANPN – Antenatal/Postnatal Ward
BBC – Barnsley Birthing Centre
CO – Carbon Monoxide
EPGAU– Early Pregnancy Gynaecology Assessment Unit
MSSA - Maternity Stop Smoking Advisor
MSW – Midwife Support Worker
PHE – Public Health England
MEDCS – Maternity Electronic Data Collection System

Appendix 2

Test your Breath

Test your breath

Why Carbon Monoxide screening matters

Carbon Monoxide (CO) is a poisonous gas which you can't see or smell but which is dangerous to you and your baby.

Exposure can prevent oxygen reaching your baby, slow its growth and development, and can result in miscarriage, stillbirth and sudden infant death.

Exposure can be measured through a quick and simple breath test provided by your midwife during a routine antenatal appointment. Feel free to ask your midwife about Carbon Monoxide screening. The test will give you a number which measures the amount of Carbon Monoxide in parts per million (PPM).

0-3 Your recent level of 0-3 PPM shows little exposure exposure to Carbon to Carbon Monoxide in the last Monoxide is low. 24-48 hours.

4+ You have had some 4+ PPM suggests you have recent exposure to had recent exposure to Carbon Carbon Monoxide. Monoxide and this is of concern.

Exposure

Exposure to Carbon Monoxide is usually from one of three ways;

- Cigarette smoke
- Faulty or poorly ventilated cooking or heating appliances (this includes gas, coal, wood and paraf½ n appliances)
- Faulty car exhausts

If you or anyone in your home smokes, this is the most likely explanation for the high reading.

Reducing your exposure to cigarette smoke is the most important thing you can do for you and your baby's health. This may be by quitting smoking yourself or reducing your exposure from others, by asking smokers not to smoke in the home, car or in front of you. Once you stop, the Carbon Monoxide clears from your bloodstream and that of your baby's, allowing a good ¾ow of oxygen to support their growth and development.

Your midwife can discuss options to help you, including referring you to your local stop smoking service. To ½nd out more about the free support available, call the *NHS Smokefree helpline on 0300 123 1044 (minicom 0300 123 1014)*. Or visit the Smokefree website at *www.smokefree.nhs.uk*

To sign up for NHS approved advice throughout pregnancy and the early years, visit *www.start4life.nhs.uk*.

If you are not usually exposed to cigarette smoke, but you have a reading of 4 or more, you may have been exposed to Carbon Monoxide through faulty heating or cooking appliances.

We strongly recommend that you get expert help from the Gas Safety Advice Line *0800 300 363*.

It is important to check that your heating and cooking appliances are safely installed. You may wish to buy a Carbon Monoxide alarm that will detect low levels of Carbon Monoxide in your home.

THIS WORK IS SUPPORTED BY

the lullaby trust · Gas Safety Trust · The Royal College of Midwives · Tommy's · start 4 life · Sands Stillbirth & neonatal death charity · CPHVA · best beginnings · Bliss · ash action on smoking and health

Appendix 3

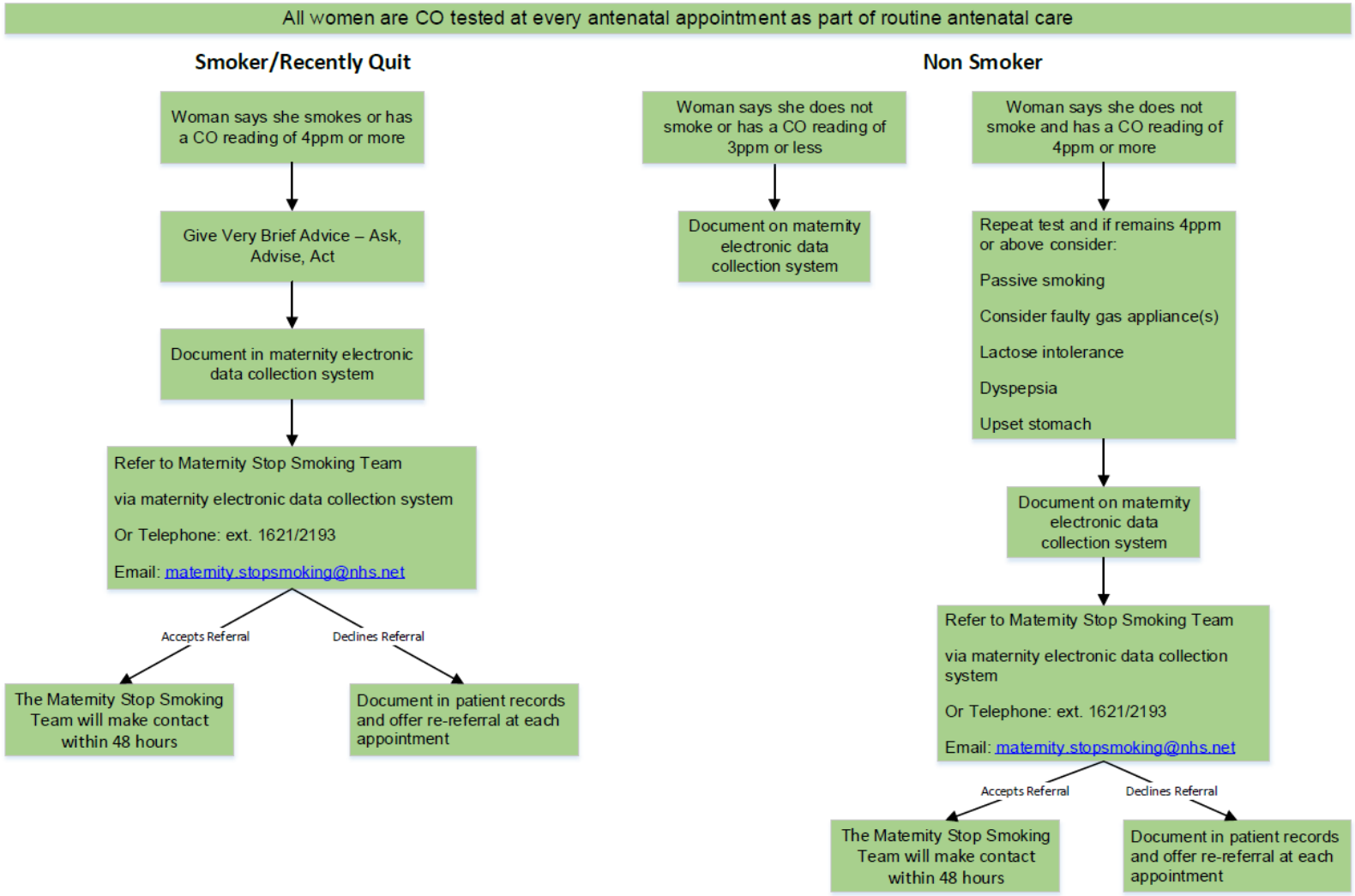
How to conduct a CO breath Test

Taking a Breath Test

1. Attach a breath sampling D-piece and new Steribreath™ mouthpiece.
2. Turn on the monitor by pressing the power button once.
3. Press 'Breath Test' symbol on screen,  .
4. To cancel the breath test, press  .
5. Inhale and hold breath for the pre-set 15 second countdown.
6. A beep will sound during the last 3 seconds of the countdown.
7. Blow slowly into mouthpiece, aiming to empty lungs completely.
8. The ppm and equivalent %COhb and/or %fCOhb levels will rise and hold on-screen.
9. On the piCO and piCObaby, when the test is finished  will appear at the bottom of the screen.
10. On the Micro⁺, when the test is finished  will appear at the bottom of the screen.
11. If a high reading has been recorded, you can mute the sounder by pressing 
12. To repeat breath test, press  once to return to the home screen and repeat steps 3-8.
13. To save the reading (Micro⁺ only) press  and select the relevant patient profile.
14. Remove the D-piece between tests to purge sensor with fresh air.
15. To switch off, press and hold the power button for 3 seconds, unit will also power off after 2 minutes of inactivity to save power.

Appendix 4

Pathway for Carbon Monoxide (CO) testing and referral



Appendix 5

Maintain a record of the document history, reviews and key changes made (including versions and dates)

Version	Date	Comments	Author

Review Process Prior to Ratification:

Name of Group/Department/Committee	Date

Trust Approved Documents (policies, clinical guidelines and procedures)

Approval Form

Please complete the following information and attach to your document when submitting a policy, clinical guideline or procedure for approval.

Document type (policy, clinical guideline or procedure)	Guideline
Document title	Smoke-Free Pregnancy Guideline
Document author (Job title and team)	Public Health Midwife
New or reviewed document	Reviewed
List staff groups/departments consulted with during document development	
Approval recommended by (meeting and dates):	**Women's business and governance: 16/09/2022** **CBU3 business and governance: 28/09/2022**
Date of next review (maximum 3 years)	28/09/2025
Key words for search criteria on intranet (max 10 words)	Nicotine replacement therapy, NRT, carbon monoxide, CO
Key messages for staff (consider changes from previous versions and any impact on patient safety)	The nicotine replacement therapy SOP has been merged into this guideline
I confirm that this is the FINAL version of this document	**Name: Molly Claydon** **Designation: Governance Support Co-ordinator**

FOR COMPLETION BY THE CLINICAL GOVERNANCE TEAM

Approved by (group/committee): CBU3 Business and Governance
Date approved: 28/09/2022
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