



# Supporting pregnant people to stop smoking

Case studies

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# Overview

**Organisation:** Manchester Foundation Trust – St Mary's, Wythenshawe Hospital

**Organisation type:** NHS Trust

Overwhelming research demonstrates that smoking, including using shisha, during pregnancy has serious consequences on the health of the child and can lead to an increased risk of miscarriage, premature birth, stillbirth and low birth weight. Smoking during pregnancy also increases the risk of infant mortality by an estimated 40% (Department of Health 2007).

Within the Greater Manchester (GM) Infant Mortality review, it was identified that smoking was the most prominent risk factor associated with infant mortality. Additionally, according to [NHS England's Saving babies' lives version 3, element 1](#), reducing smoking in pregnancy is a key factor in reducing infant mortality during the perinatal period. So, taking a universal approach to smoking cessation in pregnancy will hopefully help deliver smoke-free pregnancies and smoke-free childhoods.

# Implementation

Manchester Foundation Trust (MFT) aspire to use every contact with pregnant people as an opportunity to screen for carbon monoxide (CO) levels. If the level is raised, this could be associated with smoking, a malfunctioning boiler, car emissions or shisha use. A CO test is an immediate, non-invasive biochemical screening method for helping to assess whether someone smokes or is at risk of harm because of raised CO levels. If the person has a raised level, they are signposted to an NHS Stop Smoking service. MFT staff are trained annually using face-to-face update sessions delivered by a member of the stop smoking team as well as compulsory e-learning.

In face-to-face training, staff are educated on the stop smoking pathway in [NHS England's Saving babies' lives version 3](#), and the pathway that people enter when they are referred to stop smoking services. This includes educating staff on the financial incentives offered as well as the frequency of appointments, support for extended family members and postnatal follow up. Staff are also educated on the impact of smoking on pregnancy and the fetus, and discuss how to have productive conversations with women around smoking and CO testing in pregnancy. This includes the risks associated with smoking and raised CO levels in pregnancy and how to reduce these levels. Finally, the statistics associated with stop smoking in pregnancy are shared with staff, including the Local Maternity and Neonatal System (LMNS).

This education is provided by the stop smoking pregnancy lead for MFT. This role provides support throughout pregnancy for the person and their families, as well as auditing data from the LMNS to ensure smoking levels are reduced. Additionally, they support staff to have conversations with people around smoking and the importance of low CO levels during pregnancy.

## Antenatal care within MFT

At the first face-to-face contact or booking appointment, all pregnant people will be asked to provide an exhaled CO test. When discussing CO testing, staff are trained to explain that CO is a poisonous gas, and that CO screening is a simple routine part of antenatal care. Cigarette smoke is the largest cause of raised CO, while environmental factors such as pollution from car exhaust fumes, faulty gas appliances and second-hand tobacco smoke can also contribute to raised readings. The pregnant person should be informed

that the raised level can be reversed by avoiding these factors. It should be explained that CO affects the body's ability to transport oxygen around the body, which reduces the oxygen available to the baby, but is also a marker for a person's exposure to smoking. Cigarette smoke also contains over 7,000 chemicals, of which hundreds are toxic and may also cause damage to the fetus. Regardless of smoking status, the midwife will explain the effects of CO on the person's own health and that of their unborn baby. If consent is given, the test can be performed.

If a high reading (4 PPM or more) is seen, staff will discuss with the person the last time a tobacco product was used and the number of cigarettes smoked. Other factors to consider if a high reading is seen in a non-smoker include household or other second-hand smoke, heating appliances or traffic emissions. For non-smokers with exceptionally high CO rates (10 PPM or more) or symptoms of CO poisoning, they should be strongly recommended to seek medical attention at a local A&E.

Staff are encouraged to contact the stop smoking team on the phone when they have the person with them in the appointment, so they can create a future appointment and discuss their options going forwards. They should refer them to the stop smoking team through the electronic referral system.

## Ongoing care pathways

### Smoking identified at booking appointment

- As per saving babies' lives version 3, people who smoke during their pregnancy in the moderate-risk category need serial ultrasound scans every 3 weeks from 32 weeks' gestation.
- If a raised CO level is identified, they should be referred to the stop smoking pregnancy team at any time throughout their pregnancy.

### Stop smoking pathway

- Set up weekly appointments (at home, virtually, or in clinic) for the first 4 weeks.
- For the rest of pregnancy, set up monthly appointments (at home, virtually, or in clinic).

- Provide nicotine replacement therapies and a home CO monitor to ensure safe levels daily.
- Offer an incentive scheme where financial vouchers are provided to encourage quitting.
- Set up monthly assurance meetings with the GM stop smoking teams to monitor progress.

## Incentive scheme

In November 2024, NHS England launched a national smoke-free pregnancy incentive scheme that aimed to support more people in having a smoke-free pregnancy and to stay smoke-free after birth. The scheme offers vouchers over the course of their pregnancy as well as support and nicotine replacement therapy.

## Equipment

Each community midwife is provided with a CO monitor to ensure that effective CO testing is done within antenatal clinics. Additionally, each antenatal area has a CO monitor, including the antenatal ward, triage, within every antenatal clinical room, and in the delivery suite. The CO monitors are ordered by the stop smoking team and provided through their NHS expenses. But the CO tubes, which are single-use card tubes that attach to the CO monitor to allow each pregnant person to use them, are bought through the ward stock, so come out of the area's individual budget.

## Business costs

- CO monitor: £169 per monitor
- CO tubes: £36 for 200 mouth pieces
- D-piece attachment: £35.40 for 12 attachments.

This funding is supported by GM funding through the national smoke-free pregnancy incentive scheme.

# Outcomes and learning

## Outcomes

St Mary's, Oxford Road Campus: CO at booking and 36 weeks – 90% and 91%, respectively (target 95%).

St Mary's, Wythenshawe: CO at booking and 36 weeks – 92% and 96%, respectively (target 95%).

St Mary's, North Manchester General Hospital: CO at booking and 36 weeks – 92% and 98%, respectively (target 95%).

Managed clinical service (MCS): CO at booking and 36 weeks – 90% and 95%, respectively (target 95%).

MCS: referrals to service (target 90%):

- April, 91%
- May, 93%
- June, 96%.

4-week quit (target 60%):

- April, 45%
- May, 65%
- June, 59%.

CO at booking (target 95%):

- April
  - MCS, 96%

- Oxford Road Campus, 96%
- Wythenshawe, 97%
- North Manchester General Hospital, 95%
- May
  - MCS, 95%
  - Oxford Road Campus, 94%
  - Wythenshawe, 95%
  - North Manchester General Hospital, 97%
- June
  - MCS, 96%
  - Oxford Road Campus, 96%
  - Wythenshawe, 96%
  - North Manchester General Hospital, 96%

CO at 36 weeks (target 95%):

- April
  - MCS, 96%
  - Oxford Road Campus, 93%
  - Wythenshawe, 99%
  - North Manchester General Hospital, 97%
- May
  - MCS, 98%
  - Oxford Road Campus, 96%
  - Wythenshawe, 99%

— North Manchester General Hospital, 98%

- June (not completed yet).

## Learning

Through CO testing at every antenatal contact, a greater number of pregnant people are being referred to stop smoking services and seeing success in reducing their CO levels during pregnancy. This ultimately has improved overall public health as well as infant mortality and child health in the long term.

Staff have also become more productive in testing pregnant people and having conversations with them around raised CO levels during pregnancy and the impact this may have on themselves and their fetus.

## Supporting information

See the [statement on referral for stop smoking support and treatment in NICE's quality standard antenatal care](#).

## Contact details

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