LMS Smokefree Pregnancy Pathway

Introduction

Smoking during pregnancy is a leading cause of poor birth outcomes, including stillbirth and neonatal death. In 2018/19 10.6% of women were recorded as smokers at the time of delivery (SATOD).[1] However, this varies between Clinical Commissioning Groups (CCGs) across the country from less than 2% to over 26%.

NICE guidance 'Smoking: Stopping in pregnancy and after childbirth'[2] and 'Smoking: Acute, maternity and mental health services'[3], set out the support that should be given to all women who are smoking during pregnancy to quit.

However, recent findings from the evaluation of the Saving Babies' Lives Care Bundle (SBLCB) version 1 found inconsistent practice in relation to implementing components of NICE guidance, including carbon monoxide (CO) monitoring of all women and referral of smokers to stop smoking services.[4] Gaps in delivery and inconsistent approaches must be addressed in order to bring down rates of smoking among pregnant women.

This briefing sets out:

1. Impacts of smoking during pregnancy;
2. Smokefree pathways: preconception care;
3. Smokefree pathways: throughout pregnancy;
4. Smokefree pathways: Post-partum.

1. Impact of smoking during pregnancy

Smoking in pregnancy seriously harms the health of both mothers and babies. Nationally great progress has been made in reducing rates of smoking during pregnancy, but this progress has recently stalled and has not been shared equally across all groups.[5] There are big variations in rates by geography, socio-economic group and age.[5] More needs to be done to implement evidence-based models of support, ensuring there is consistent support provided to all women across the country.

Smoking has serious implications for birth outcomes, and the Government's ambition to halve rates of stillbirths and neonatal deaths by 2025.[6]

	Maternal smoking	Secondhand smoke
Low birth weight	Average 250g lighter	Average 30-40g lighter
Stillbirth	Double the likelihood	Increased risk
Miscarriage	24%-32% more likely	Possible increase
Preterm birth	27% more likely	Increased risk
Heart defects	50% more likely	Increased risk
Sudden Infant Death	3 times more likely	45% more likely

Table 1. Smoking in Pregnancy Challenge Group. Review of the Challenge 2018. July 2018.[7]

These adverse outcomes mean it is essential to support women to quit smoking before they become pregnant to help them remain smokefree during pregnancy and reduce relapse to smoking after birth.

The Government has set the ambition to reduce SATOD to 6% or less by 2022. If this ambition is reached, it would mean approximately 28,000 fewer women smoking in pregnancy compared to 2017/18.[8] It is estimated that this would mean:

- 45 – 73 fewer babies stillborn
- 11 – 25 fewer neonatal deaths
- 7 – 11 fewer sudden infant deaths
- 482 – 796 fewer preterm babies and
- 1455 – 2407 fewer babies born at a low birth weight

To achieve this ambition, we must significantly increase the rate of decline in the number of women smoking during pregnancy. Local Maternity Systems (LMSs) have a crucial role to play in monitoring the implementation of NICE guidance and ensuring there is consistent evidence-based support being delivered to all women.

LMSs are ideally placed to monitor and evaluate current practice through bringing partners together, examining national indicators and local practice and collectively identifying areas for improvement.

The National Centre for Smoking Cessation and Training has produced a standard treatment programme for pregnant women and briefing for maternity care providers. This provides further detail on the evidence-based care which should be provided to all women during their pregnancy and post-partum:

- Stopping smoking in pregnancy: A briefing for maternity care providers
- Standard Treatment Programme for Pregnant Women: A guide to providing behavioural support for smoking cessation during pregnancy and the post-partum period

2. Smokefree pathways: Pre-conception care

An important way to reduce smoking during pregnancy is through ensuring fewer women are smoking when they become pregnant. Smoking rates are highest in the age groups most likely to have children. Among young women aged 18 – 34, 15.8% are smokers compared to 12.6% among all women. A similar picture is seen among young men (18 – 34) with smoking prevalence rates at 20.6% compared to 16.4% among all men.[9]

Reducing prevalence among all men and women in this age cohort will be crucial to achieve specific reductions in smoking during pregnancy and pregnant women's exposure to secondhand smoke. This will require engaging with and training a broader range of professionals.

LMSs should identify the local stop smoking services available to women before, during and after pregnancy. ASH's annual tobacco control reports detail the variation in stop smoking services available in different areas.[10] In 2019, all areas responding to the survey commissioned stop smoking support for pregnant women however, this support is not necessarily be available to women pre-conception or post-partum. LMSs should engage with local authority public health teams and stop smoking services to identify the service offer available to women at different stages of this pathway and ensure that other healthcare providers are delivering consistent, evidence-based messages around the importance of quitting smoking.

This table is based on work conducted by Yorkshire and the Humber Maternity Clinical Network and West Yorkshire and Harrogate LMS. It highlights the key points for services to engage with women pre-conception, highlighting the bare-minimum, good and best practice levels of support. Throughout the document there are also intrapartum and post-partum touch point tables.

Preconception			
Touchpoints	**Bare minimum**	**Good**	**Excellent**
School nurses	Identify smoking status Refer to stop smoking service	Staff training Staff Provide VBA Myth Busting Support for self-management	On site or trained stop smoking advisors
Sexual health services	Identify smoking status Refer to stop smoking service	Staff training Staff provide VBA Myth Busting	
Fertility clinics	Identify smoking status Refer to stop smoking service	Staff training Staff provide VBA Myth Busting	
Practice Nurses	Identify smoking status Refer to stop smoking service	Staff training Staff provide VBA Myth Busting	On site or trained stop smoking advisors
Family centres/hubs/early years	Identify smoking status Refer to stop smoking service	Staff training Staff provide VBA Myth Busting Support for self-management Smokefree homes advice	On site or trained stop smoking advisors Stop smoking peer support workers
Health visitors (planning for pregnancy)	Identify smoking status Refer to stop smoking service	Staff training Staff provide VBA Myth Busting Support for self-management Smokefree homes advice	Offer of NRT available

Secondary/Tertiary NHS Settings and services (non - maternity)	Identify smoking status Refer to stop smoking service Smokefree hospital	CO verified smoking status Staff provide VBA Support for self-management Smoke free homes advice Implementation of NICE Guidance	On site or trained stop smoking advisors available Stop smoking peer support worker NRT for patients
Primary Care	Identify smoking status Refer to stop smoking service Smokefree site	CO verified smoking status Staff provide VBA Support for self-management Smokefree homes advice	On site or trained stop smoking advisors available NRT for patients
Community Midwives	Identify smoking status at booking Brief advice for smokers Smokefree homes/environments if using a hub	CO verified smoking status Offer relapse prevention Opt-out referral to stop smoking services	CO monitoring at every appointment CM midwives level 2 trained in stop smoking advice/smoking specialist midwife NRT for patients Stop smoking peer support workers in community Consider case loading
Maternity Voice Partnerships	Raise awareness with women and their families	Training for volunteers in VBA and refer to stop smoking services	Provision of peer support for women and families
Antenatal - hospital	Identify smoking status at booking Brief advice for smokers Smokefree homes/environments Smokefree hospital	CO verified smoking status at booking Offer relapse prevention Opt-out referral to Stop Smoking Services	CO monitoring at every appointment Smoking specialist midwife/ on site stop smoking advisor NRT for patients Stop smoking peer support workers Implementing all NICE Guidance
	Population level (whole family) approach		

To deliver on this support, all services mentioned must have information on:

- The harms of smoking during pregnancy and importance of quitting;
- The local stop smoking support offer available and how women and their families can access this support;
- The training available, for example via the National Centre for Smoking Cessation and Training (NCSCT) and e-learning for healthcare, on very brief advice.
- Planning a pregnancy resources developed by Tommy's for women and families.

Monitoring and Evaluation

Key questions:

- Has your LMS identified local services working with women pre-conception that could deliver brief interventions?
- Have healthcare practitioners working with women pre-conception, such as those providing sexual health or contraception services, been trained to deliver advice around the harms of smoking and support to stop?
- What stop smoking support is available for women pre-conception? Do identified services refer into this support?

3. Smokefree pathways: throughout pregnancy

NICE Guidance and the Saving Babies' Lives Care Bundle set out the key steps for supporting women to quit smoking during pregnancy and to prevent relapse. Set out below are the key points of this pathway and the questions LMSs should be asking of their local systems.

Antenatal booking appointment

All women should be CO monitored at their booking appointment with the outcome recorded in notes. CO monitoring should be part of routine assessment and be carried out **before** talking to women about smoking.

1. If a woman blows a CO reading of **4 parts per million (ppm)** or above, midwives should follow the **'Ask, Advise, Act'** pathway to delivery Very Brief Advice, starting with asking about smoking status.

If she is a smoker follow the same pathway as women with a reading of above 4ppm.

2. CO reading of **less than 4ppm**

If the woman is a smoker (or quit within the last 2 weeks):

i. Explain the risks of smoking during pregnancy and the support that is available to help her quit.

ii. Refer on an opt-out basis to specialist stop smoking support.
Referral should happen within 24hrs and preferably during the appointment to illustrate that this is an important part of that woman's care.
Record this action in maternity notes.
If a woman opts out of the referral, this should also be recorded.

iii. Stop smoking services should aim to contact women within 24hrs of a referral being made with a face-to-face appointment with a specialist advisor within 5 days.

If the woman is not a smoker (and quit more than two weeks ago):

i. Explain about other sources of CO, such as exposure to secondhand smoke and faulty gas boilers. Recommend contacting the Gas Safety Helpline on 0800 300 363 to check for faulty appliances leaking CO.

ii. If a woman is exposed to secondhand smoke in the home, explain the risks of this and provide information about the stop smoking support available to her household members.

i. Confirm her smoking status, as some smokers can present a low CO reading. If she has recently quit offer a referral to the stop smoking service, and ensure she knows there is support to help her stay smokefree.

a. If she quit within the last 2 weeks refer on an opt-out basis to specialist stop smoking support, as with a smoker.

b. If she quit more than 2 weeks ago, offer a referral to the stop smoking service, and ensure she knows there is support to help her stay smokefree.

Stop smoking service

Stop smoking services, whether based within maternity units or the community, should attempt to contact women referred within 24 hours to build on the advice given by midwives. NICE PH26 recommends that stop smoking advisers attempt to see those who cannot be contacted by telephone at their routine antenatal care visit. Women who opt out during the initial telephone call should be sent information on smoking and pregnancy, with details on how to get help to quit at a later date. Women who are reluctant to attend the clinic can be offered a visit at home or another venue.

The NCSCT sets out the standard treatment programme for pregnant women. The programme outlines a modified treatment pathway for pregnant women, reflecting the greater urgency to quit during pregnancy. Pregnant women may require a more flexible approach and longer periods of support than the general population of smokers. The treatment pathway consists of a pre-quit assessment and weekly sessions until four weeks after the Quit Date.

1. Session 1: Pre-quit Assessment
2. Session 2: Quit Date (set as soon as possible)
3. Session 3: 1 week post Quit Date
4. Session 4: 2 weeks post Quit Date
5. Session 5: 3 weeks post Quit Date
6. Session 6: 4 weeks post Quit Date

A note on vaping:

- If a woman is only vaping and not smoking any tobacco she should be recorded as a non-smoker.
- If a woman is vaping and smoking tobacco, she should be referred to the stop smoking service to help her stop using tobacco completely.
- Women who are vaping having recently quit smoking should be offered a referral to help them remain smokefree.

Vaping is substantially less harmful than smoking tobacco and if a woman is vaping to help her quit or stay smokefree she should be supported to do this. Guidance on the use of e-cigarettes during pregnancy is available here:

- Use of electronic cigarettes before, during and after pregnancy: A guide for maternity and other healthcare professionals
- E-cigarettes in pregnancy: Infographic for pregnant women and families
- Use of e-cigarettes (vaping) in the home: advice for parents

E-cigarette users should take steps to prevent children from accidentally swallowing e-cigarette liquid or small parts of devices. As is the case with medicines and cleaning products, e-cigarettes and e-liquids should be kept out of the reach of children. As with all rechargeable electrical equipment, to reduce the risk of fire you should always use the correct charger and should not leave your e-cigarette charging unattended or overnight. E-cigarettes should be charged away from babies and toddlers.

Resources to support women and healthcare professionals:

- Carbon Monoxide (CO) screening: advice for health professionals
- Test your breath: information for pregnant women
- Smoking in Pregnancy Challenge Group training resources including video & infographic on CO screening
- E-learning for healthcare training on delivering Very Brief Advice and CO screening (this is also available via the Royal College of Midwives)
- National Centre for Smoking Cessation and Training (NCSCT) training modules:
    - Very Brief Advice on Smoking (VBA) for Pregnant Women
    - Specialty course on Smoking Cessation in Pregnancy and the Post-Partum Period

Throughout pregnancy

1. Additional CO monitoring should be offered to women **throughout their pregnancy** with the outcome recorded.

Smokers

a. Specialist stop smoking services should give feedback to midwifery teams around engagement or non-engagement with services and quit attempts. This will help encourage midwives to raise smoking at subsequent antenatal appointments.

b. If a smoker accepted the referral to the stop smoking service following her booking, or a subsequent appointment, and has engaged with the service:
   i. She should be asked about her quit attempt and given positive reinforcement on the benefits of being smokefree for her and her baby.
   ii. These conversations should be recorded in a woman's notes.

c. If a smoker opted-out of a referral to the stop smoking service, or has not engaged with the stop smoking service:
   i. Ask her about her smoking status;
   ii. Explain the risks of smoking during pregnancy and the benefits of quitting for her baby;
   iii. Offer another referral to the service.

Women should be asked about their smoking at each appointment with the offer of support always made available to them. This is especially important if there are smoking related complications eg small for gestational age.

Non-smokers

a. If a woman was a recent ex-smoker at the beginning of pregnancy, ask her about smoking and remind her that there is support available to help her stay smokefree.

At 36 weeks

In line with the requirements of SBLCB V2, all women should be CO monitored at their 36 week appointment with the outcome recorded. Testing of all women at the 36 week appointment can be used to congratulate and encourage those who have stopped smoking, and to refer women with a CO measurement of 4ppm or above for specialist support. The collection of smoking status at 36 weeks should supplement the recording of smoking status at time of delivery (SATOD). It should not be used as a replacement.

To ensure this CO monitoring is taking place, trusts should consider making this a mandatory field within maternity notes. Some areas are also recording the CO parts per million rather than a 'yes/no' response to increase accuracy of data monitoring.

1. CO reading of 4ppm or above

   (pathways as above)

2. CO reading below 4ppm

   (pathways as above)

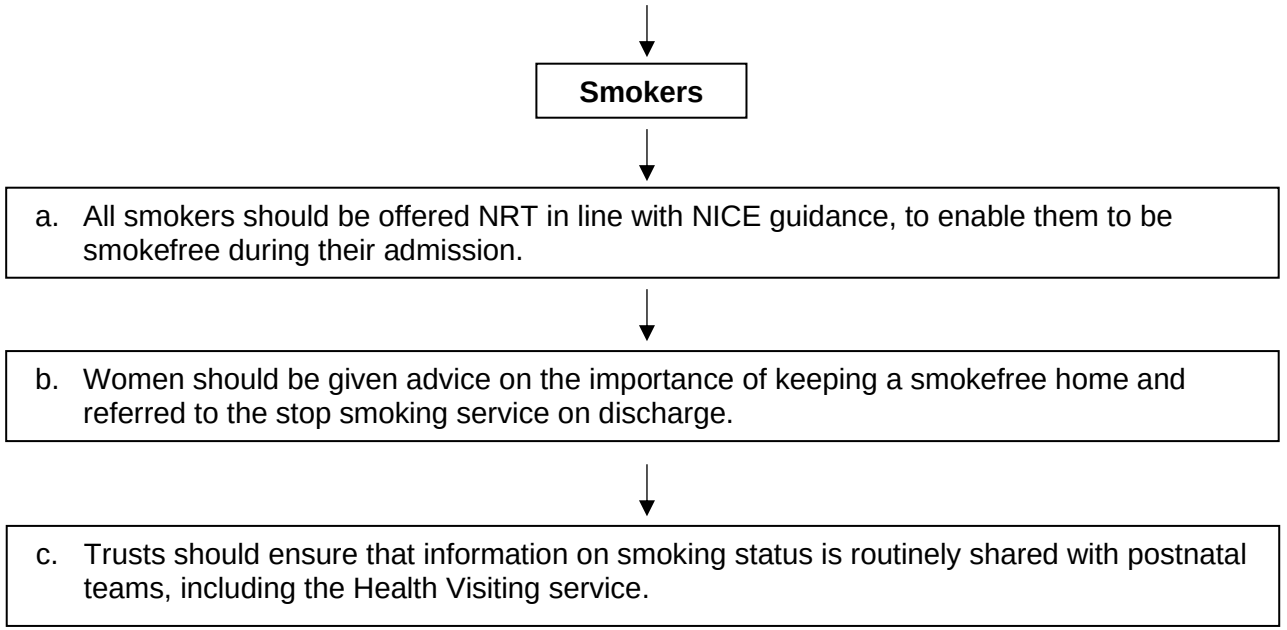
At time of birth

Smoking status at time of delivery (SATOD) must be asked and recorded for **all women**.

Trusts should have a clear process as part of admissions protocol to ask and record smoking status.

Asking women about their smoking status on admission will help to ensure that smokers can be given access to NRT to enable them to be smokefree during their delivery.

Women who are smokers at their 36 week appointment should be made aware of the hospital's smokefree policy antenatally and midwives should engage with women around support and provision of NRT to help them prepare to be smokefree during their time in the hospital.



Intrapartum		
Touch Points	**Home Birth**	**Hospital / Birth Centre**
Bare Minimum	Smoke free home Training for staff on key messages and appropriate interventions	Smoke free site Training for staff on key messages and appropriate interventions
Good	Option of CO screening on arrival / post delivery Sharing of information with health visitor as standard part of handover Midwives offer VBA Referral made on discharge to stop smoking services	CO reading on admission/triage Sharing of information with postnatal wards and community midwifes as standard part of handover Option of CO monitoring before discharge Midwives offer VBA Referral made on discharge to stop smoking services
Excellent	Dedicated stop smoking staff / specialised stop smoking midwife Midwives offer VBA to partner and family members	Identify opportunities for intervention during length of stay Availability of NRT during and after inpatient stay Dedicated stop smoking staff / specialised stop smoking midwife Midwives offer VBA to partner and family members Referral made on discharge to stop smoking services
Continuity of care for smokers		

***** This table is based on work conducted by Yorkshire and the Humber Maternity Clinical Network and West Yorkshire and Harrogate LMS

Monitoring and Evaluation

At booking appointment:

What should your LMS know?

- Data capture: What is your smoking at time of booking (SATOB) rate? Are all women CO monitored and the level recorded?
- Referral: how many women are being referred into the stop smoking service(s)?

Key questions:

- Have all midwives seeing women antenatally had training in CO monitoring and very brief advice (VBA)?
- What is the feedback process between midwives and stop smoking services? Eg. regarding women who don't attend appointments or whether women have quit.
- Do all midwives have their own CO monitor?
- Who is responsible for maintenance of CO monitors, eg replacement batteries and mouth pieces?
- How do women access NRT to support their quit attempts?

Throughout pregnancy

What should your LMS know?

Key questions

- Are midwives asking about smoking at antenatal appointments in addition to the booking and 36 week appointments?
- Are women with an elevated CO reading being referred to specialist stop smoking services throughout pregnancy?

36 weeks appointment

What should your LMS know?

- Percentage of women with a CO reading of 4ppm or above at 36 weeks.
- Number of women referred to the stop smoking service at 36 weeks.

Key questions

- Are all women with an elevated CO reading being referred to the stop smoking service at 36 weeks?
- What is the difference between SATOB and smoking rates at 36 weeks?
- What is the feedback process between midwives and stop smoking services? Eg. regarding engagement or non-engagement whether women have quit.

At time of birth

What should your LMS know?

- Data capture: what is your smoking at time of delivery (SATOD) rate?
- CO monitoring: are women being CO monitored at time of delivery?

Key questions

- Are smokers being offered NRT to enable them to be smokefree for delivery?
- Are all women being asked about their smoking status at time of delivery, and is this data being recorded?
- When are women being asked about their smoking status at time of delivery?
- What is the difference between SATOB and SATOD?
- What is the difference between smoking status recorded at 36 weeks and SATOD?

4. Smokefree pathways: post-partum

Children are particularly vulnerable to the damaging effects of secondhand smoke because of their immature and developing organs.[11] Evidence shows that secondhand smoke is a preventable cause of numerous health conditions including bronchitis, asthma, pneumonia, meningitis and sudden infant death syndrome.[12]

The Royal College of Physicians has estimated that household smoking increases the incidence of childhood asthma by as much as 50% and results in 20,000 cases of lower respiratory tract infection each year.[12] Exposure to secondhand smoke in childhood can also lead to long term respiratory problems, including an increased risk of chronic respiratory illness and lung function deficits in later life.[13]

It is therefore essential we continue to support women and their families' post-partum to ensure children can grow-up in a smokefree environment. In addition to those women who are unable to quit smoking during pregnancy, among those who do quit it's estimated that as many as 76% will relapse to smoking post-partum,[14] this is especially the case among women who live with other smokers.

Post-partum inpatient

- Post-partum women and their partners/families who smoke should be informed of the risks of secondhand smoke including higher risk of sudden infant death syndrome. They should be advised to keep a smokefree home, and smoking status should be recorded in postnatal notes and the child health record.
- Women who have successfully quit smoking during pregnancy should be supported to remain smokefree, with positive reinforcement on the benefits of being smokefree and providing a smokefree environment for her baby.
- Upon discharge women who are smoking, or need continuing support to prevent relapse, should be referred to local stop smoking services.
- Partners and other household members should also be referred where it is possible to engage them in these conversations.

Breastfeeding

- Prevalence of breastfeeding is lowest among young mothers from lower socioeconomic groups. These women also have the highest smoking rates. Women who have quit smoking for at least a month are more likely to initiate breastfeeding.[15] Additionally, women who quit smoking tend to continue breastfeeding for a longer period of time than those who continue to smoke.[16,17]
- Smoking cessation and relapse prevention advice should therefore be delivered with breastfeeding advice to maximise efforts to initiate and maintain breastfeeding.[18]

Neonatal unit

- Information on smoking status should be shared with staff on neonatal units (NNU) and recorded on admission to NNU.
- Staff on neonatal units, including outreach workers, should be trained to deliver very brief advice to women and families, especially around the importance of keeping a smokefree home.
- There should be a consistent approach to the delivery of very brief advice and offer of a referral to stop smoking services.

Health visitor appointments

- Health visitors have a crucial opportunity to engage with women and their families. Providing advice to other smokers in the household and offering referrals can be key to ensuring that children can grow-up in a smokefree home.
- Smoking status should be shared with health visitors from the antenatal appointment so they can offer consistent advice and referrals.
- Health visitors should be trained to deliver VBA for smokers and information on the importance of maintaining a smokefree home.
- Areas, such as Hackney, that have focused on training health visitors have designated health visitor champions to lead work on smoking cessation and be a key point of contact.
- A case study on embedding this support within health visiting services can be accessed here.

Adverse outcomes

- Smoking is a leading cause of adverse birth outcomes. Where there have been adverse outcomes trusts should include reviewing smoking status and the support offered in their review of the care provided to a woman and her baby.
- LMSs should engage with trusts regarding mortality reviews to ensure that smoking is considered, and any lack of support identified through these reviews is then addressed in the pathway of support.

Monitoring and evaluation

What should your LMS know?[1]

- Numbers of staff working with families post-partum that have received training in very brief advice.
- Proportion of smokers on admission whose babies are admitted to NNU
- Proportion of women smoking at new birth visit

[1] While these are not standard data collection items, they are important indicators for measuring the need for post-partum stop smoking support and capacity of local services to deliver effective stop smoking interventions.

Key questions

- Are women recorded as smokers being referred to stop smoking services on discharge to support smokefree homes?
- Are women who have quit during pregnancy receiving ongoing support to prevent relapse?
- Have staff working on NNU been trained to deliver brief interventions on smoking and the importance of smokefree homes?
- Is smoking status during pregnancy and SATOD shared with health visiting teams?
- What is the feedback loop between health visiting and midwifery teams regarding smoking?
- Have health visitors had training in delivery of VBA for women and their households?
- Do health visitors have CO monitors?

Postnatal to Early Years									
Touch Points	**Post Birth in Hospital/Home/Birth Centre**	**Discharge to Community Midwife (still in hospital)**	**First Postnatal Contact at home CMW/MSW**	**Where Baby remains on NNU**	**1st visit transfer to health visitor/FNP (day 10-14)**	**6-8wk P/N HV visit**	**6-8wk GP P/N check**	**Sexual Health contraception P/N**	**Children's Centres, Voluntary Organisations and Children's Services**
Bare Minimum	Accurate SATOD Brief advice for smokers Smoke free hospital grounds NRT for patients	All women given advice about smoking around baby, smoke free homes and cars. HV informed of smoking status	CO testing all women Smoke free homes	NNU staff give brief advise and danger of baby exposed to second hand smoke	Smoking status VBA Smoke free homes	Review previous appointment situation / advice VBA Smoke free homes	Smoking status VBA Referral to stop smoking services	Smoking status VBA Referral to stop smoking services	Smoking status VBA Referral to stop smoking services Smoke free homes advice
Good	CO verified SATOD (on admission) Positive feedback for quitters and relapse prevention Smokers referred to stop smoking service Smokers discouraged from handing baby after smoking	Smokers referred to stop smoking service	Smokers referred to stop smoking service Include partners/family members	NNU staff trained in very brief advice Referral to stop smoking service Smokers discouraged form handling baby after smoking	CO test Referral to stop smoking service Relapse prevention	Review previous appointment situation / advice	Stop smoking advisor at GP Practice	Pre conception smoking advice	Pre conception smoking advice

Excellent	CO verified SATOD Stop smoking peer support workers Stop smoking advisor on site	A/N stop smoking adviser advised of birth/discharge	Visit from stop smoking adviser at home CO monitors that measure Environmental CO	CO monitoring on NNU	HV/FNP/NN registered as stop smoking level 2 advisors	Review previous appointment situation / advice Smoking data is collected and feedback nationally		Level 2 smoking advisors trained/on site	Level 2 smoking advisors trained/on site
DATA									

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Key audit points and data collection opportunities:

The NHS has identified the following four indicators, set out in the Saving Babies' Lives Care Bundle V2 and NICE Guidance:

- Smoking at time of booking (SATOB) rate;
- Smoking rate at 36 weeks of pregnancy;
- Smoking at time of delivery (SATOD) rate;
- Proportion of women with elevated CO levels referred for a specialist stop smoking intervention

Other opportunities for data collection and auditing are:

- Percentage of women CO monitored at booking appointment;
- Percentage of women who opt out of referral to the specialist stop smoking service;
- Percentage of women referred who do not engage with the specialist service;
- Number of women who do engage with the specialist service who achieve a four week quit;
- Number of referrals at different appointments

Further resources:

- Smoking in Pregnancy Challenge Group
- Supporting a Smokefree Pregnancy: E-learning for Healthcare
- National Centre for Smoking Cessation and Training:
    - Standard Treatment Programme for Pregnant Women
    - Stopping Smoking in Pregnancy: A briefing for maternity care providers
    - Pregnancy and the Post-Partum Period: Specialty module

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1 NHS Digital. Statistics on Smoking at time of Delivery England. 2019.

2 National Institute for Health and Care Excellence. Smoking: Stopping during pregnancy and after childbirth. 2010. Accessed March 2019.

3 National Institute for Health and Care Excellence. Smoking: Acute, maternity and mental health services. 2013. Accessed March 2019.

4 Widdows K, Roberts SA, Camacho EM, Heazell AEP. Evaluation of the implementation of the Saving Babies' Lives Care Bundle in early adopter NHS Trusts in England. Maternal and Fetal Health Research Centre, University of Manchester, Manchester, UK. 2018.

5 NHS Digital. 2019. Statistics on Women's Smoking Status at Time of Delivery, England Quarter 3 2018-19. Accessed March 2019.

6 Department for Health and Social Care. November 2017. New maternity strategy to reduce the number of stillbirths. Accessed March 2019.

7 Smoking in Pregnancy Challenge Group. Review of the Challenge 2018. July 2018.

8 The Lullaby Trust. Impact of smoking on future rates of stillbirth, neonatal and infant mortality and poor birth outcomes in England. 2018.

9 Public Health England. Smoking prevalence in young adults age 18-34 years: Annual Population Survey 2012-2018. 2019.

10 ASH and Cancer Research UK. A changing landscape: Stop smoking services and tobacco control in England. 2019.

11 BMA. Breaking the cycle of children's exposure to tobacco smoke. 2007

12 Royal College of Physicians and Royal College of Paediatrics and Child Health. Passive smoking and children. 2012.

13 American Thoracic Society. Children Exposed to Smoking Face Long-Term Respiratory Risks. ATS International Conference. California. 2012.

14 Jones, M., Lewis, S., Parrott, S., Wormall, S., & Coleman, T. Re-starting smoking in the postpartum period after receiving a smoking cessation intervention: A systematic review. Addiction, 2016, 111(6), 981–990

15 Collins BN, DiSantis KI, Nair US. Longer previous smoking abstinence relates to successful breastfeeding initiation among underserved smokers. Breastfeed Med. 2011 Dec;6(6):385-91. doi: 10.1089/bfm.2010.0076.

16 Higgins TM. Higgins S. Heil S. Badger G. Skelly J. Bernstein I. et al. Effects of cigarette smoking cessation on breastfeeding duration. Nicotine Tob Res. 2010 May;12(5):483-8. doi: 10.1093/ntr/ntq031.

17 Neal M. Hughes E. Holloway A. Foster W. Sidestream smoking is equally as damaging as mainstream smoking on IVF outcomes. Hum Reprod. 2005 Sep;20(9):2531-5

18 Weiser TM. Lin M. Garikapaty V. Feyerharm RW. Bensyl DM. Zhu BP. Association of maternal smoking status with breastfeeding practices: Missouri 2005. Pediatrics. 2009;124(6):1603-10. doi: 10.1542/peds.2008-2711.