This publication was withdrawn on 5 November 2026

This publication has been superseded by Saving babies' lives version three: a care bundle for reducing perinatal mortality and NICE guideline [NG209] on Tobacco: preventing uptake, promoting quitting and treating dependence.

Public Health England

Protecting and improving the nation's health

This guidance is being reviewed and will be updated in due course. In the meantime, the current guidance should be followed.

Maternity high impact area: Supporting parents to have a smokefree pregnancy



About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-leading science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy to advise and support government, local authorities and the NHS in a professionally independent manner.

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Foreword – Professor Viv Bennett

Giving every child the best start in life is a key strategic priority for Public Health England. If we want to achieve universal health improvement for babies and children and to narrow the health gap for those who are most vulnerable, we need to work together to embed care and support for healthy conception and pregnancy through care pathways for everyone of reproductive age.

Improving prevention through individualised care pathways, with groups of women at specific or increased risk of poor outcomes, and at a population level, is key to achieving the ambitions and recommendations of Better Births and reducing inequalities in outcomes for mothers and babies.

This resource supports the drive to increase action on prevention to improve wellbeing, reduce risk and tackle inequalities from preconception through to 6 to 8 weeks postpartum and ensure every woman is fit for and during pregnancy and supported to give children the best start in life. Every woman should have access to services and support to plan a healthy intended pregnancy and advice to adopt healthy behaviours and for reducing or managing risk factors. Reducing unplanned pregnancy rates and improving heath for and during pregnancy improves individual and population outcomes and represent a significant return on investment.

These resources set out the latest evidence, guidance, resources and local practice examples for 6 key topic areas known to affect maternal and child outcomes. They aim to promote prevention across the maternity pathway by providing clear calls to action for NHS and Local Authority Commissioners, and providers and professionals including midwives, health visitors and primary care to promote a life course approach to prevention.

My thanks to the author and the team, you should be rightfully proud of your work. On behalf of PHE I am pleased to present this work to support local areas to achieve best possible outcomes

Professor Viv Bennett CBE
Chief Nurse and Director Maternity and Early Years, Public Health England

Foreword – Professor Jacqui Dunkley Bent

As England's first Chief Midwifery Officer for the NHS, I want to make sure that all women are given the right information to make safe choices that are heard and respected during a woman's life course including the preconception, pregnancy, birth and as they transition into parenthood. Consistent advice and guidance from health care professionals across the maternity pathway can make a significant contribution to the health of future generations by reducing risk before and during pregnancy. Evidence has linked the environment in the womb to the health of the baby, child and adult.

If we are to make big, long-term improvements in maternity care we need to address the inequalities that we see in society. This is as true in England as it is in the rest of the world. I want to work with groups that we inconsistently engage with such as travellers, sex workers, asylum seekers, refugees and other groups, to make sure that they receive the best maternity care possible so that their human rights are respected.

Recommendations from the National Maternity Review: Better Births are being implemented through Local Maternity Systems (LMSs) to ensure that care is personalised and therefore safer. This means that more care is provided in the community so that it is available for women that will benefit most. LMSs bring together the NHS, commissioners, local authorities and other local partners with the aim of ensuring women and their families receive seamless care, including when moving between maternity or neonatal services or to other services such as primary care, health visiting, mental health or post-natal care.

Our NHS Long Term Plan aims to support people to live longer, healthier lives by helping them to make healthier lifestyle choices and treating avoidable illness early. Our new services will help more people to stop smoking, maintain a healthy weight and make sure their alcohol intake is within a healthy limit. These behaviours are all contributing factors that can be modified before, during and after pregnancy to improve outcomes. This means working with colleagues across the health sector to ensure a person-centred life course approach for women and their families.

These documents support a system wide approach to embedding prevention across the maternity pathway. They provide the latest evidence and guidance to NHS and Local Authority commissioners and providers with the aim of promoting a comprehensive view of maternity care in England. My thanks to the team developing these documents, you should be proud of your work.

Professor Jacqueline Dunkley-Bent
Chief Midwifery Officer for the NHS

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Maternity high impact areas: overview

Why the 6 maternity high impact area documents have been developed and how they contribute to public health priorities

The maternity high impact area documents were developed to assist Local Maternity Systems (LMS) embed prevention approaches to better support women before, during and after pregnancy through a whole system life-course approach.

The documents provide LMS's with the latest evidence, guidance, resources and local practice examples for the high priority topic areas known to affect maternal and child outcomes in England. Implementation of the high impact areas will help support recommendations in Better Births, the Maternity Transformation Programme and the NHS Long Term Plan.

The maternity high impact areas addressed in this publication suite are:

- improving planning and preparation for pregnancy
- supporting parental mental health
- supporting healthy weight before and between pregnancy
- reducing the incidence of harms caused by alcohol in pregnancy
- supporting parents to have a smokefree pregnancy
- reducing the inequality of outcomes for women from Black, Asian and Minority Ethnic (BAME) communities and their babies

The documents were produced between 2019 and 2020 and updated prior to publication in light of the COVID-19 pandemic. Emerging evidence from the UKOSS COVID-19 study shows the disproportionate impact of COVID-19 on Black, Asian and ethnic minority pregnant women, and overweight and obese women, highlighting the importance of a continued focus in these areas. The results are also in line with earlier MBRRACE-UK findings relating to poorer outcomes for pregnant women in these groups outside of the pandemic. The HIA reports take account of new evidence and ways of working, particularly in relation to the most vulnerable mothers and babies as part of PHE's Best Start in Life strategic priority.

These resources contribute to the strategic ambitions of NHS Universal Personalised Care Model and the Modernisation of the Healthy Child Programme. Additionally, the high impact areas reflect the needed approaches to tackle health inequalities, as outlined in the Marmot Review 10 Years On.

The high impact areas are intended to be used alongside the Healthy Pregnancy Pathway and sits within the broader All Our Health framework that brings together resources and evidence that will help to support evidence based practice and service delivery, Making Every Contact Count, and building on the skills that healthcare professionals and others have to support women.

How these documents were developed

The development of this document was led by Monica Davison (Public Health England) and Dr Ellinor Olander (Centre for Maternal and Child Health Research, City University of London) with support from Dr Felix Naughton (School of Health Sciences, University of East Anglia) from October 2019 to March 2020. The documents were reviewed by Martyn Wilmore, Jo Locker, Catherine Swann and Tamara Bacchia (Public Health England). The document was systematically developed using 3 strands of evidence – academic research, current UK guidance and policy and the experiences of those working in Local Maternity Systems. Firstly, a rapid review was conducted using Scopus and PubMed to identify international reviews and UK empirical studies published since 2014 on supporting smoking cessation before, during and after pregnancy. Relevant journals not included in these databases (such as 'Journal of Health Visiting') were hand searched. Search terms included pregnancy and smoking cessation and variations of these. Good quality evidence was ensured by only including peer-reviewed research. To be included studies had to provide information on supporting smoking cessation before, during and pregnancy and could be randomised controlled trials, surveys, service evaluations and qualitative studies with either women or healthcare professionals. These inclusion criteria were used to ensure focus was on practical suggestions in line with current guidelines for those working within Local Maternity Systems.

Secondly, the websites of Institute of Health Visiting, NICE, NHS England, Royal College of Midwives, Royal College of Obstetricians and Gynaecologists and Public Health England were searched to identify relevant and current reports and guidelines as well as good practice examples. The database OpenGrey was also used to identify practice examples. Examples were deemed good practice if they were in line with current guidelines and provided information on positive outcomes for women. The most recent MBRRACE ('Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries') reports were also checked for relevant information.

Finally, the draft document was reviewed by topic experts, public health experts and healthcare professionals. Twenty-four representatives from Local Maternity Systems, national bodies and Public Health England also attended a review workshop in January 2020. Based on this feedback the documents were revised and further academic research was added when it had been deemed missing from the first draft. The document was subsequently reviewed by a small number of topic experts within PHE

before being finalised. As such, this document benefited from many people providing feedback, and we thank them for their time and input.

Who these documents are for and how they should be used

These resources are for Local Maternity Systems professionals who wish to acquaint themselves with the latest evidence and good practice guidance on maternity priority topics in England.

The documents should be used a guide to support the early signposting of evidence-based actions that can be practically applied according to local population needs.

Executive summary

The importance of a smokefree pregnancy

Smoking is the largest modifiable risk factor for poor birth outcomes and a major cause of inequality in child and maternal health.(1, 2)

Smoking rates at the time of delivery has been decreasing for many years, but are still above the national ambition of reducing smoking at time of delivery to 6% or lower by the end of 2022.(3) Reducing the number of women who smoke during pregnancy through offering specialist stop smoking support is also a priority in the NHS Long Term Plan.(4)

High impact area connections with other policy areas and interfaces

This document could be read in conjunction with other policy documents and initiatives including:

- towards a smoke-free generation: a tobacco control plan for England (2017)
- annual Report of the Chief Medical Officer (2014)
- better births (2016)
- Saving Babies' Lives Care Bundle Version 2 (2019)
- women's reproductive health is a public health issue (2019)
- Smoking in Pregnancy Challenge Group

Additionally, the NHS Long Term Plan sets out specific commitments to reduce maternal smoking rates. The importance of effective outcomes relies on strong partnership working between all partners in health (primary and secondary), local authority including early years services and voluntary sector services.

Summary of key actions

This is a summary of key actions for LMSs to undertake in implementing prevention approaches in their work to address 'Maternity high impact area: Supporting parents to have a smokefree pregnancy'.

See sections Evidence-based approaches to support smokefree pregnancies and Associated tools and guidance, below, for supporting evidence, guidance and good-practice case studies.

Frontline healthcare professionals

All women

- inform women of the risks associated with second-hand smoke

Women who smoke

- identify all women who smoke
- make every Contact Count and encourage women to quit smoking
- bust myths regarding smoking in pregnancy
- inform women of the risks associated with smoking for them and their baby
- provide very brief advice on smoking cessation
- make referral to stop smoking services using an opt-out process
- collaborate with other healthcare professionals to provide appropriate training and stop smoking support before, during and after pregnancy

Providers

- consider including very brief advice on stopping smoking training in service specifications to help healthcare professionals support women and their partners to quit smoking
- monitor and evaluate smoking referral and uptake rates
- engage with the local community, including Maternity Voices Partnership, to co-develop services that are accessible, appropriate and not stigmatising for the local population
- appoint a Local Maternity System Smokefree Pregnancy Champion

Commissioners

- commission stop smoking support that is appropriate for women before, during and after pregnancy and their families
- reduce health inequalities by commissioning services which respond to local need set against clear outcome measures, empowering providers to make service improvements
- monitor and evaluate smoking rates
- consider investing in additional forms of evidence-based support for stopping smoking in pregnancy, such as digital support and financial incentives, and ensure access to any additional support is equitable. These should complement face to face support

Partnership approaches to improve outcomes

This is a summary of key actions to improve partnership approaches in collaborative commissioning, effective service delivery, and professional mobilisation.

Effective collaborative commissioning can lead to a reappraisal of the serious health, social and economic impacts of smoking on the wellbeing of women, pregnant and pre-pregnant, on children, on families and on the long-term health of the population.

Service delivery can be made more effective through a review of service design, investment to enable the roll-out of continuity of carer and other specialist services which respond to the needs of women who smoke during pregnancy.

Professionals can be mobilised to reduce the incidence of smoking in pregnancy through improving access to smoking cessation training for all midwives, health visitors and other health professionals.

Collaborative commissioning

- use the Public Health Outcomes Framework indicator reported and benchmarked by Public Health England to inform local commissioning information sharing agreements in place across all agencies
- integrate commissioning of services, this could include services that are available in pregnancy and subsequently after pregnancy
- contribute to and utilise data from UK Midwifery Study System(5)
- link with early years services, including children's centres
- ensure information sharing agreements are in place across all agencies
- plan the design of delivery of services together through Local Maternity Systems

Effective service delivery

- improve access for women of childbearing age to evidence-based stop smoking support
- improve identification of pregnant women who smoke at booking and throughout pregnancy, and effective referral pathways into support to quit
- integrate IT systems and information sharing across agencies to help support women before, during and after pregnancy
- improve partnership working, for example maternity, health visiting and local community organisations
- develop integrated pathways to include prevention and early intervention. This includes local processes to enable smooth transfer of records during transition from midwifery to health visiting services

- ensure systematic collection of user experience, for example, NHS Friends and Family Test
- provide consistent, evidence-based information for women on risks associated with smoking before, during and after pregnancy
- provide regular training for healthcare professionals on supporting behaviour change related to smoking, how to discuss this issue sensitively and refer for support in a way that will motivate attendance

Professional or partnership mobilisation

- provide multi-agency training on supporting women with quitting smoking and maintaining this behaviour
- deliver effective prevention and treatment services
- identify skills and competencies to inform integrated working and skills mix

Measuring success

High quality data, analysis tools and resources are available for all public health professionals to identify the health of the local population. This contributes to the decision-making process for the commissioning of services and plans to improve people's health and reduce inequalities in their area. Healthcare professionals and wider stakeholders need to demonstrate the impact of local support and services, this can be achieved using local measures:

Access

- evidence of a multi-agency approach to implementing evidence-based referral pathways and support to help pregnant women quit smoking
- co testing could be undertaken with all pregnant women at the antenatal booking appointment, with the outcome recorded(6)
- additional CO testing could be offered to pregnant women as appropriate throughout pregnancy, with the outcome recorded(6)
- proportion of women with elevated CO levels referred for specialist stop smoking interventions(7)
- proportion of referred smokers setting quit dates with specialist stop smoking support(7)
- smoking at time of delivery prevalence data as captured in the Public Health Outcomes Framework and broken down into inequalities

Effective delivery

- the extent to which local NHS organisations are embedding support to quit for pregnant women who smoke
- the availability of local authority and NHS funded stop smoking support(8)
- referral for those with elevated levels (4ppm or above) for support from a trained stop smoking specialist, based on an opt-out system. Referral pathway can include feedback and follow up processes(6)
- all relevant maternity staff could receive training on the use of the CO monitor and having a brief and meaningful conversation with women about smoking(6)
- maternity care providers could examine their outcomes in relation to the interventions and trends within incidents where smoking in pregnancy is identified to have been a contributory factor
- maternity providers are encouraged to focus improvement in the following areas:
    1. effective identification of women who smoke during their pregnancies
    2. increase the provision of effective training of staff in relation to smoking during pregnancy
    3. working with local partners to develop effective pathways of care for referral for specialist stop smoking advice
- review and act upon local data: Use tools available (such as the Clinical Quality Improvement Metrics and Local Tobacco Profiles) to review the current situation with smoking and data quality, compare with other nearby or demographically similar Trusts and identify if improvements can be made(6)
- proportion of staff within Local Maternity System trained in CO monitoring and to deliver brief interventions

Outcomes

- percentage of women with a CO measurement ≥4ppm at booking(6)
- percentage of women with a CO measurement ≥4ppm at 36 weeks(6)
- percentage of women who have a CO level ≥4ppm at booking and <4ppm at the 36 week appointment(6)
- number of women setting a quit date with specialist advisors and proportion successfully quit at 4 and 12 weeks after quit data and at 36 weeks gestation (if available)
- percentage of women recorded as smoking at time of delivery
- cost per successful quit attempt

User experience

- feedback from NHS Friends and Family Test
- feedback from local Maternity Voices Partnership groups

Other measures can be locally developed and could include initiatives with other stakeholders within the local maternity system.

Supporting evidence and good practice guidance

Context

Smoking during pregnancy causes up to 2,200 premature births, 5,000 miscarriages and 300 perinatal deaths every year in the UK.(2) It is associated with a 47% increase in the odds of stillbirth.(9)

Women who smoke are less likely to breastfeed their baby and longer term are more likely to develop oral cancers, and coronary heart disease. Health risks for the baby include increased risk of congenital heart defects(10), asthma(11) and visual problems.(12)

In 2018-19 data from England indicates that 10.6% of pregnant women continued to smoke until the end of their pregnancy.(13) This data also shows clear geographical differences, in Blackpool the rate is 23.4% and in Westminster the rate is 1.1%.

English data also indicates that younger women are more likely to smoke at the time of their booking appointment, with almost 1 in 4 women (24.8%) aged under 25 smoking compared to 7.1% of women aged 35 and over. Women of white (15.9%) and mixed (13.9%) ethnicity were most likely to smoke when compared to women from other ethnic groups.

Of those women who manage to quit smoking during pregnancy, approximately 3 in 4 women return to smoking within the first 6 months of their baby's birth, meaning ongoing support to help women remain smokefree is also important.(14)

Approximately 20% of women are exposed to second-hand smoke in their home throughout their pregnancy, leading to many of the same adverse birth outcomes experienced by women who smoke.(15) Women who live with a smoker are 6 times more likely to smoke throughout pregnancy and those who live with a smoker and manage to quit are more likely to relapse to smoking once the baby is born.(8, 16)

The importance of Local Maternity Systems

Better Births, the Maternity Transformation Programme and NHS Long Term Plan set out a clear vision and principles for how maternity services can be brought together through Local Maternity Systems with strong links to services to provide personalised, kinder and safer care to women and their families.

The purpose of a Local Maternity System is to provide system leadership for transformation, putting in place the infrastructure that is needed to support services to work together effectively, including interfacing with other services that have a role to play in supporting women and families before, during and after birth.(13)

Local Maternity Systems' strategic role

Better Births recommends that on a more local level, providers and commissioners should operate as local maternity systems, with the aim of ensuring that women, babies and families are able to access the services they need and choose, in the community, as close to home as possible. The purpose of a Local Maternity System is to provide place-based planning and leadership for transformation through:

- developing and implementing local plans to transform services
- shared clinical and operational governance to enable cross-organisational working and ensure that women and their babies can access seamlessly the right care, in the right place at the right time

Local Maternity System membership

Potential membership of a Local Maternity System is presented in Figure 1 and includes service users, commissioners, providers and community groups and organisations. By bringing these stakeholders together, the Local Maternity Systems can create shared protocols, information sharing and coherent plans to implement and apply the Better Births vision and principles to meet their population's needs.

Figure 1: Potential membership of a Local Maternity System

Potential membership of a Local Maternity System	
Service user voice	• Maternity Voices Partnerships, Healthwatch and representative parent groups where appropriate • local stakeholders and charities representing service users
Commissioners	• Clinical Commissioning Groups • NHS England • local authority directors of public health • other local authorities as appropriate • providers
Providers	• providers of NHS antenatal, intrapartum and postnatal care including independent midwifery practices and voluntary and community sector providers involved in providing the local NHS funded maternity offer • local Neonatal Operational Delivery Network • primary care • mental health teams, including mother and baby units, IAPT, AMHS, CAMHS • stop smoking services • community child health and tertiary centres • local authority providers of health visitor services, children and adult social care teams and public health programmes • leisure centres • dental services
Others	• representatives of other clinical networks, higher education establishments and teaching hospitals involved in workforce training and research • local workforce advisory boards • representatives of the staff voice, such as professional organisations and trade unions • community organisations

Smokefree support in Local Maternity Systems

Numerous providers offer support to smokers, see Figure 2 for some examples.

Figure 2: Examples of providers who meet women at one of the following time points – pre-conception, pregnancy or postpartum

Community midwives
Dental services
Family and children's centres/hubs/early years
Fertility clinics
Health visitors
Maternity Unit/Birth Centre
Neonatal unit
Primary Care (including GPs and practice nurses)
Pharmacies
School nurses
Sexual health services
Secondary/tertiary NHS Settings and services (non-maternity)
Family Nurse Partnership

To help the Local Maternity System, Public Health England has produced a self-assessment tool related to addressing smoking in pregnancy to help identify local strategic priorities and support action planning. The CLeaR smoking in pregnancy deep dive self-assessment tool is available here.

Figure 3 outlines key information to monitor and evaluate in a Local Maternity System Smokefree pregnancy pathway. The Local Maternity System can support training for all staff working with women and families before, during and after pregnancy. The Local Maternity System can also identify services available for women during pre-conception and in the post-natal period to ensure stop smoking messages are consistent in all services.

Figure 3. Suggested information for Local Maternity System to monitor and evaluate regarding smoking in pregnancy and postpartum

Time point	Issues to monitor and evaluate
At booking appointment	• data capture: What is your smoking at time of booking (SATOB) rate? Are all women CO monitored and the level recorded? • referral: Are all women with elevated CO levels of 4ppm and above, or with a self-reported smoking status, being referred into stop smoking support?
36 weeks appointment	• percentage of women with a CO reading of 4ppm or above at 36 weeks. • number of women referred to stop smoking support at 36 weeks.
At time of birth	• data capture: what is your smoking at time of delivery (SATOD) rate? • CO monitoring: are women being CO monitored at time of delivery?*
Postpartum**	• proportion of smokers on admission whose babies are admitted to Neonatal Unit • proportion of women smoking at new birth visit

* While recording of CO levels at time of delivery is not a national requirement, it will help identify smokers on admission who may require nicotine replacement therapy to assist with managing nicotine withdrawal in hospital
** 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.

Using evidence to embed prevention through a community-centred approach

A place-based, or community-centred, approach aims to develop local solutions that draw on all the assets and resources of an area. This is illustrated through the All Our Health smokefree townscape.

Taking a place-based approach is important as smoking rates vary depending on geography, socioeconomic group and age.(3) Smoking is also associated with poor mental health and alcohol misuse (see other Maternity HIA documents). It is therefore important to co-design services with local population to ensure services are appropriate for the local community. Who commissions and provides stop smoking services will also vary in different areas.(8)

The Maternity Transformation Programme has suggested the development of Community Hubs as central locations for primary and secondary care. These hubs can provide holistic care for women and their families and also provide stop smoking services(15) (including direct access to NRT) and could maintain their premises as smokefree sites.(17)

Local Maternity Systems are encouraged to have a Smokefree Pregnancy Champion in every local area to lead action on the Local Maternity System smoking prevention pathway.(3, 8) Local authorities, Clinical Commissioning Groups and NHS Trusts can also explore ways to work collaboratively across Local Maternity System footprint to realise economies of scales in implementing NICE guidance on smoking in pregnancy.(8)

To reduce smoking rates in pregnancy, prevention needs to target women of reproductive age. A life course approach is needed with young women being educated from an early age about women's health.(1)

To aid Local Maternity Systems in developing the most appropriate stop smoking support, NHS Trusts could be supported to accurately complete the Maternity Services Dataset.(8) This includes assessing CO levels at booking and to capture CO validated smoking status at 36 weeks` gestation as standard practice, in addition to smoking at time of delivery data.

Healthy Pregnancy Pathway

The maternity high impact area documents can be used alongside the Healthy Pregnancy Pathway.

The Healthy Pregnancy Pathway is an online interactive tool that provides Local Maternity easy access to the latest maternity life-course guidance using a stepped-up service level approach, from universal to targeted and specialist care systems grounded in the community setting.

The Healthy Pregnancy Pathway uses a place-based approach through the integration with the All Our Health Townscapes.

The Healthy Pregnancy Pathway uses the following service-level descriptors across the maternity pathway (preconception, antenatal and birth 6 to 8 weeks):

- **Universal service** is offered to all people, ensuring they receive immunisations, screenings, contraception, maternity advice, support and referral to specialist services according to need.
- **Targeted service** provides people with timely, personalised expert advice and support when they need it for specific issues, such perinatal mental health, diabetes management and breastfeeding.
- **Specialist service** provides people specialist practitioner treatment, where providers will often work with other agencies to coordinate holistic wrap around support for people with acute or ongoing needs, including complex needs management.

Evidence-based approaches to support smokefree pregnancies

This section outlines the supporting guidance and good-practice case studies for Maternity high impact area: Supporting parents to have a smokefree pregnancy.

See above for a summary of this section under heading Summary of Key Actions.

Preconception

Smoking levels are highest for men and women in reproductive age (18 to 34 years) and opportunities to help them quit before pregnancy are currently being missed.(1)

Examples of the providers women may meet during pre-conception include GPs, general practice nurses, pharmacists, or healthcare professionals in sexual health and fertility clinics.

The key action for these providers is identifying smoking status and referring to stop smoking services. They could also be encouraged to offer very brief advice, myth busting and support for self-management. Managers could identify and support appropriate staff training, such as Making Every Contact Count and Very Brief Advice on smoking.

Pregnancy

Key providers who meet women during pregnancy include midwives, GPs and health visitors. Other providers include dental teams who can provide very brief advice when women receive their free dental care. At the booking appointment, smokers should be identified by CO assessment and automatically referred to stop smoking support. In subsequent maternity appointments, women could be asked if they engaged with this stop smoking support, and refer them again if appropriate (see Figure 4).(18) Research indicates this opt-out referral increases the number of women receiving stop smoking support (19) and that women are interested in receiving support to be smokefree in both early and late pregnancy.(20)

When discussing smoking status, information could be provided about the risks of smoking to the unborn child and woman herself, as well as the hazards of exposure to second-hand smoke.(18) During this discussion, the woman’s context needs to be considered. For example, in vulnerable groups smoking is commonly done to relieve stress and acceptability of smoking is often high.(21)

Prevalence within the same family may also be high with both mothers and grandmothers smoking. Teenage women smokers have been found to think that:

- they could quit on their own
- stop smoking services could not tell them anything new
- stop smoking services could not provide the kind of support that would help them to quit
- stop smoking services are judgemental and would give them a ‘hard time’(22) so may need referral and support tailored to them (see case study: teenage pregnancy).

Figure 4: Examples of a smokefree pathway 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.

Case study 1: Teenage pregnancy - Baby Be Smoke Free

Baby Be Smoke Free was developed based on a literature review and scoping work with 32 teenage pregnant smokers (aged 16 to 19 years) and 60 specialist teenage midwives.(22)

Baby Be Smoke Free is an interactive online intervention available within the (obstetric ultrasound department) for self-administration by the women while waiting. It provides an anonymous and self-led journey through the resource at a speed appropriate to the user. The aim was to facilitate a quit attempt by making accessing stop smoking services as a desirable activity and enabled the user to confidentially refer herself to her local stop smoking service.

The resource starts with a short film which animates important key messages with a composite scenario which is based on real-life experience, qualitative insight research and clinical information. After the film, the viewer is directed to the intervention homepage, which also contained interactive applications. The resource also provides strategies to help women protect themselves from the second-hand smoke of family, friends and partners.

After using the tool, 4 of the 16 smokers (25%) made a self-referral to receive additional quit support. Young women also found the resource to be relevant to them, engaging and delivering relevant knowledge.

Tommy's the Baby Charity led the work on this resource.

Postpartum

Relapse is common among women who successfully quit smoking in pregnancy.(14, 23) Key providers who meet women during postpartum include health visitors, midwives, GPs and Children Centre staff. The key focus during this time is to provide very brief advice, refer to stop smoking services, inform about smoking around baby and benefits of a smokefree home (see case study: health visiting, next page).

To help health visitors support women with smoking cessation, midwives could inform them of women's smoking status. Pre-conception smoking advice can also be provided to smoking women.

Case study 2: Health visiting – Hackney Council and Homerton University Hospital NHS Foundation Trust

To support women quit smoking postnatally, a key performance indicator was added to the health visiting specification requiring health visitors to ask women about their smoking status at the new birth visit. The target was set to ask 95% of women. To do this, health visitors received CO monitors and training on very brief advice and CO monitoring. The aim is also for all women to be CO monitored, preferably at the new birth visit, otherwise at the second appointment. If a woman smokes, the health visitor talks through the harms of second-hand smoke, the benefits of a smokefree home and offers to refer her to the stop smoking service. This offer is also available to partners/family members who smoke.

So far, 60% of women are being CO monitored at the new birth visit; and all health visitors have their own CO monitor. New feedback mechanisms are being built between Maternity, Health Visiting and the Stop Smoking Service so that health visitors have information on previous smoking status and referrals/quit attempts.

This project has been funded by the health visiting budget and training was provided by the local stop smoking service.

Stop smoking support

Face to face behavioural support from a trained professional over several weeks is the most effective method of supporting pregnant women to quit. Nicotine Replacement Therapy (NRT) is safe before, during and after pregnancy and could be provided in line with evidence-based protocols and prescribing guidelines to women and their partners, in conjunction with behavioural support, to maximise its use as a quitting aid.

There is growing evidence that e-cigarettes are effective at helping smokers to quit, and they are considered to be a significantly less harmful alternative to smoking. However, they are not a licensed stop smoking medication, and therefore, are not recommended as first-line treatment in pregnancy. Licensed NRT products, along with behavioural support, should be the recommended option for pregnant smokers looking to quit. If the expectant mother is interested in using an e-cigarette as part of her quit attempt, or believes that continued use of an e-cigarette will help her stay smokefree, she should be supported to do so. Trained advisors should provide basic guidance on how to use the e-cigarette and discuss using in combination with NRT and behavioural support as appropriate. There is no reason to believe that use of an e-cigarette has any adverse effect on breastfeeding.(17)

Misconceptions about the relative harm of nicotine in pregnancy persist amongst the public and many healthcare providers. LMSs could ensure that all staff who have

contact with women who smoke are able to deliver accurate information about the relative harm of nicotine compared to continued tobacco smoking.(24, 25)

Incentive schemes, alongside behavioural support, are a promising avenue for supporting women to quit smoking(26, 27) when added to established and effective referral and support pathways (see 'Case study: Incentives', below).

Case study 3: Incentives – Bolton NHS Foundation Trust

To support pregnant women to quit and stay smokefree, Bolton NHS Foundation Trust has participated in the Greater Manchester Smokefree Pregnancy programme that has enabled them to provide an evidence-based financial reward incentive scheme. This is available to pregnant women who quit smoking and receive support and CO validation from a specialist advisor.

The women are supported through the first 4 weeks of their quit journey with behavioural support and the offer of a £10 'Love2Shop' voucher per week, if accompanied by a valid CO reading. Monthly meetings are then available until birth, with £20 per month for a continued CO validated quit. The women can also recruit a person to be their 'significant other' who either joins the mother in quitting smoking or is a non-smoker who will support the woman's quit journey. Significant others are rewarded with £60 'Love2Shop' vouchers if the woman remains quit until birth.

Midwives undertook CO monitoring with very brief advice training, leading to an increase in CO monitoring levels from 47% to over 90%, as well as increased referrals. Senior leadership support has been imperative to facilitate a whole system approach. A specialist stop smoking midwife, supported by 3 specialist stop smoking maternity support assistants, has implemented the programme locally.

So far, an 83% 4-week CO validated quit rate has been achieved through the women who are receiving behavioural support from the maternity support workers. Women in the incentive scheme receive weekly visits to CO validate and support through the first month then monthly until birth. The referrals to the service have increased since vouchers were offered and enthusiasm or eagerness to participate by the women has significantly improved.

Funding for this work has been received by Greater Manchester Health and Social Care Partnership (GMHSCP) Transformation funding as part of the devolution deal to improve Population Health.

In relation to digital interventions, there is evidence that mobile phone text messaging can be effective in helping smokers quit(28, 29), including pregnant women(27, 28).

These interventions have potential for wide reach and can be tailored to pregnancy (see 'Case study: Tailored text message support', below). Internet and app-based interventions also exist, but with less evidence of effectiveness. However, digital interventions should not be seen as a replacement for the offer of face to face stop smoking support. They can be effective for women who are unable or unwilling to access these services or used in combination with face to face support.

Case study 4: Tailored text message support

To provide pregnant women with behavioural support for quitting smoking, a research collaboration between the Universities of East Anglia, Cambridge and Nottingham developed and evaluated an automated, tailored text message support system called MiQuit. MiQuit delivers advice and support orientated to pregnancy and is highly-tailored to the woman's motivation to quit, and her attitudes, beliefs and behaviours related to smoking. It consists of a 12-week programme, sending approximately 100 text messages over this period, targeting motivation to quit, preparation for making a quit attempt, boosting self-confidence, providing relapse prevention and being smoke-free postpartum.

MiQuit has been evaluated in 2 randomised controlled trials.(30, 31) When the data from these trials are pooled (a total of 614 women), they show a benefit for MiQuit over and above usual care. These studies also estimate the 'cost per quitter' from MiQuit as £133, which is approximately 5 times lower than the costs of the NHS stop smoking services for pregnant women who smoke. A large 'definitive' trial of MiQuit (a total of 1,002 women) was completed in 2019 with results due in 2020.

MiQuit has been tested in practice in several environments. An A5 single-sheet leaflet placed in booking notes without health professional endorsement promoting MiQuit has led to an uptake of 3-4% of estimated pregnant smokers in one NHS Trust over a 6-month period. When MiQuit was promoted via paid for online adverts, an uptake rate of 5% among those clicking on Google adverts and 2% clicking on Facebook adverts was observed, resulting in an estimated cost per quitter of £736. Those who signed up to MiQuit via Google adverts had a median gestation of 5 weeks, indicating this approach can reach women much earlier in pregnancy than other approaches achieve.

Funding for MiQuit development and evaluation has been through public or charity funds, including Cancer Research UK and the National Institute for Health Research

Training of healthcare professionals

To provide the support discussed above training could be available to all providers who meet women before, during or after pregnancy (see figure 3). Training could empower healthcare professionals with skills to identify and refer smokers appropriately and without judgement to local stop smoking support. It could also provide information regarding the harms associated with smoking, the role of nicotine (separate from tobacco) and include how to support whole households and not only pregnant women.(8) A smaller cohort of health professionals could also be trained to become stop smoking advisors, able to deliver the ongoing programme of stop smoking behavioural support, along with advice about appropriate stop smoking products.

All healthcare professionals who smoke could have access to stop smoking support and could be given time off to attend appointments where necessary and appropriate.(17) Policies and support could be in place to help staff who are unable to quit to remain smokefree during working hours.(32)

Associated tools and guidance

Information, resources and best practice to support frontline health professionals, providers and commissioners working in Local Maternity Systems

Intelligence toolkits and outcomes frameworks

Relevant indicators can be found in the Pregnancy and Birth Profile in the Child and Maternal Health section of PHE's Fingertips Platform. These indicators are presented in a standardised format showing trends over time, local benchmarking and relevant inequalities. This profile will be enhanced to include the new indicators which are under development and to provide a downloadable report (stocktake of progress) against the high impact areas.

Local practice examples

- Improving smoking cessation in pregnancy at East Suffolk and North Essex NHS Foundation Trust, NHS England, 2019
- Midwifery support worker parenting sessions, NHS England, 2018
- Smoking in Pregnancy – Case Studies, Smokefree Action

Resources for healthcare professionals

- A lifetime of difference: Delivering very brief advice on smoking in pregnancy makes the difference. e-learning for Healthcare, 2019,
- E-learning for health: All Our Health: Smoking and Tobacco.
- E-learning for health: Supporting a smokefree pregnancy
- Health visiting and relapse prevention. Smokefree Action, accessed January 2020
- Information service for healthcare and childcare professionals, Start4Life, accessed September 2018
- NHS Improvement. Driver diagram and change package, accessed December 2019
- NHS Maternity Statistics, England 2018-19
- Smoking in pregnancy resources for health professionals working to reduce smoking in pregnancy. Action on smoking and health, accessed December 2019
- Smoking in Pregnancy Resources. Smoking in Pregnancy Challenge Group.
- Standard treatment programme for pregnant women, National Centre for Smoking Cessation and Treatment, 2019
- Stopping smoking in pregnancy: A briefing for maternity care providers, National Centre for Smoking Cessation and Treatment, 2019
- Training resources in VBA and specialist pregnancy and postpartum advisors, National Centre for Smoking Cessation and Treatment

- Using e-cigarettes before, during and after pregnancy. Smoking in Pregnancy Challenge Group.
- Very brief advice on smoking for dental patients, National Centre for Smoking Cessation and Treatment

Resources for women and their families

- NHS information service for parents, Start4Life, accessed December 2019
- Personal Quit Plan
- Planning for pregnancy tool, Tommy's, accessed December 2019
- Start4Life Pregnancy, Accessed December 2019

Policy

- Smoke-free generation: tobacco control plan for England. Department of Health and Social Care, 2017
- Saving Babies' Lives Version Two: A care bundle for reducing perinatal mortality. NHS England, 2019
- NHS Long Term Plan. NHS England, 2019
- Better for women report, Royal College of Obstetricians and Gynaecologists, 2019
- Healthy Child Programme: Pregnancy and the first five years of life, Department of Health and Social Care, 2009
- National Maternity Review. Better Births: Improving outcomes of maternity services in England. A Five Year Forward View for maternity care. 2016
- Position Statement: Support to Quit Smoking in Pregnancy. The Royal College of Midwives. 2019
- What does the data tell us? Women's reproductive health is a public health issue. Public Health England, 2019
- National Maternity Review: Better Births (2017)

Guidance

- Health visiting and midwifery partnership – pregnancy and early weeks, Department of Health and Social Care and Public Health England,
- NHS information service for parents, Start4Life, accessed December 2019,
- Start4Life Pregnancy
- Delivering better oral health: An evidence-based toolkit for prevention, Public Health England, 2014
- Evidence into Practice Supporting smokefree pregnancies through incentive schemes, Smoking in pregnancy challenge group, 2019

NICE guidance

- Antenatal care for uncomplicated pregnancies, NICE clinical guideline [CG62], 2019
- Behaviour change: general approaches, NICE Public Health guideline [PH6], 2007
- Behaviour change: individual approaches, NICE Public Health guideline [PH49], 2014
- Smoking, NICE pathway, accessed December 2019
- Smoking: workplace interventions, NICE Public Health guideline [PH5], 2007
- Smoking: acute, maternity and mental health services, NICE Public health guideline [PH48], 2013
- Smoking: harm reduction, NICE Public health guideline [PH45], 2013
- Stop smoking interventions and services, NICE guideline, [NG92], 2018,
- Smoking: stopping in pregnancy and after childbirth, NICE Public health guideline [PH26], 2010

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