

Delivering Healthy Ambitions Better for Less



Overview.

Smoking by pregnant women is associated with an increased risk of a range of adverse outcomes, resulting in increased healthcare costs for both the mother and the infant. 17% of women (c.11,000) in Yorkshire and the Humber continue to smoke during pregnancy with a directly attributable cost to the average PCT of £500k-£625k.

Why reduce smoking in pregnancy?

Babies die as a consequence of maternal smoking. The impact of maternal smoking on the pregnant mother includes increased risk of spontaneous abortion, placental complications, preterm rupture of the membrane and ectopic pregnancy.

The impact of maternal smoking on the infant includes restricted intrauterine growth, decreased birth weight and increased risk of preterm delivery. In later life it is associated with sudden unexpected death, respiratory illness, conduct disorder, attention problems and attention deficit hyperactivity disorder.

NICE guidance has confirmed that certain episodes in people's lives, such as pregnancy, provide opportunities for significant and positive behaviour change, for example quitting smoking.

What is the challenge?

Women who continue to smoke after discovering that they are pregnant tend to live in circumstances which make it difficult for them to quit the habit, for example they may live with a smoker or live in a community where smoking is the norm. Due to the social stigma attached to smoking during pregnancy, many pregnant smokers do not disclose their true smoking habit.

The majority of pregnant smokers who do continue to smoke throughout their pregnancy reduce the amount they smoke, however, evidence indicates that their intake of toxins is not actually reduced. The focus by practitioners need to be unequivocally on stopping and not just condoning cutting down which could discourage pregnant mums from taking the final step and quitting. [Lawrence T, Aveyard P, Croghan E. What happens to women's self-reported cigarette consumption and urinary cotinine levels in pregnancy? Addiction 98: 1315-20.](#)

Interventions effective with helping smokers to quit in general will not necessarily work with pregnant women. Although many women do stop smoking during their pregnancy, relapse rates are high and the majority (60%) start smoking again within the first 6 months postpartum. If a pregnant woman's partner smokes, she is likely to continue smoking during pregnancy and her partner's behaviour may impact on any efforts she makes to quit.

How could we deliver reducing smoking during delivery?

NICE Public Health Guidance 26: How to stop smoking in pregnancy and following childbirth published June 2010 suggests actions to reduce smoking during pregnancy. The recommendations will also benefit women who are planning a pregnancy or have an infant aged under 12 months. The recommendations include the following actions:

1. Identification and referral: action for midwives

- Assess the women's exposure to tobacco control through discussion and use of a Carbon monoxide test
- Provide information on the risks of smoking and health benefits of stopping
- Advise pregnant women to stop smoking – not just cut down
- Refer them for help to quit and explain that it is normal practice to do this

2. Identification and referral: action for others

- Use any appointment or meeting as an opportunity to ask women if they smoke
- Offer those who want to stop a referral to the NHS Stop Smoking Services
- Those with specialist training should provide information on the risks of smoking and health benefits of stopping

3. Recommendations for NHS Stop Smoking Services

The recommendations are aimed at specialist advisors and cover the following areas:

- Contacting referrals
- Providing support
- Use of NRT and other pharmacological support
- Working with other agencies
- Disadvantaged pregnant women who smoke
- Partners and others in the household who smoke

Patient benefits

Eliminated maternal smoking leads to better quality of life, better health and reduced healthcare usage throughout the life of the mother, the new born baby and other members of the family.

Mothers will benefit from: a decreased risk of spontaneous abortion, placental complications, preterm mature rupture of the membrane and ectopic pregnancy.

Infants will benefit from: unrestricted intrauterine growth, increased birth-weight, reduced chance of preterm delivery. In later life, reduced risk for sudden unexpected death, respiratory illness, conduct disorder, attention problems, attention deficit hyperactivity disorder.

Efficiency benefits – the evidence

Cessation of maternal smoking up to the end of the first trimester rapidly eliminates the excess risk of low birth weight (LBW) babies and yields immediate short term health and economic benefits by reducing the number of LBW babies. [Lighthwood J, Phibbs C, Glantz S. Short – term health and economic benefits of smoking cessation : low birth weight. Pediatrics 1999; 104: 1312-1320.](#)

Over the first five years of life, the mean difference of the cost of hospital inpatient service utilisation of infants born to women who smoked at least 20 cigarettes compared to infants whose mothers did not smoke was £462 (95% CL £353 - £571); for those whose mothers smoked 10 – 19, £307 (CI £221-£394. [Petrou S, Hockley C, Mehta Z, Goldacre M. The association between smoking during pregnancy and hospital inpatient costs in childhood. Soc Science & Med; 60; 5: 1071 – 1085.](#)

Maternal smoking contributes to between 17% and 26% of lower birth weight babies. LBW infants are admitted to neonatal intensive care units at a higher rate than normal weight babies. Data from the Neonatal Research Network showed that babies born before 26 weeks' gestation spend at least 111 days in hospital during infancy and incur costs of more than £100,000. There may also be an emotional and financial burden placed in the families and community support systems. [Yeanev N, Murdoch E, Lees C. The extremely premature neonate: anticipating and managing care. BMJ 2009; 338: 100 – 103.](#)

Financial benefits

More than 11000 mothers in YH were smoking at delivery in 2009-10. The mean difference of the cost of hospital inpatient service utilisation relative to mothers who did not smoke was estimated at £100,000 per infant in 2009, due to low birth weight births. Across Yorkshire & Humber, this equates to costs of between £3.3m and £5.5m in 2009/10. This figure does not include the health care cost of birth complications e.g. spontaneous abortion, placental complications, preterm mature rupture of the membrane and ectopic pregnancy or the long term healthcare costs of respiratory problems affecting the child throughout life.

In the first 5 years of life, children born to mothers smoking between 10 and 20 cigarettes per day cost the health service an additional £307 in 2005 prices. Assuming 2% inflation per year, the estimated impact on our region was almost £3.7m in 2009/10.

PCT	Number of Maternities	Number of smoking mothers	Range of total costs of smoking in pregnancy	
			17%	26%
Barnsley PCT	2,972	670	374,217	454,461
Bradford & Airedale PCT	8,480	1,243	845,537	1,074,497
Calderdale PCT	2,560	305	231,914	301,034
Doncaster PCT	3,507	833	455,668	550,357
East Riding of Yorkshire PCT	2,918	438	294,368	373,154
Hull PCT	3,724	860	475,708	576,256
Kirklees PCT	5,319	742	517,841	661,454
Leeds PCT	9,962	1,321	947,039	1,216,013
North East Lincolnshire PCT	2,019	493	266,796	321,309
North Lincolnshire PCT	1,755	376	214,452	261,837
North Yorkshire & York PCT	8,355	1,203	825,870	1,051,455
Rotherham PCT	2,897	790	410,269	488,488
Sheffield PCT	6,353	861	610,119	781,650
Wakefield District PCT	4,075	954	524,846	634,871
Yorkshire & the Humber PCT	64,896	11,089	6,994,645	8,746,837
PCT Average			499,617	624,774

This table shows the estimated costs of smoking in pregnancy per PCT. The range of costs relate to the % of low birth weight babies attributed to smoking in pregnancy, a significant proportion of which could be saved through the actions identified in this briefing.

Implementation

- Ensure full implementation of NICE Public Health Guidance 26: 'How to stop smoking in pregnancy and following childbirth'
- Require midwives to ask about smoking status through the pregnancy and during the post natal period
- Ensure that the recording of smoking status throughout pregnancy is a mandatory field in the software system and that it cannot be bypassed or ticked 'unknown'
- Require all staff in the Midwifery Service who come into contact with pregnant women, e.g. midwives, sonographers, consultation, healthcare assistants midwifery support groups to give brief advice to quit (see Better for Less briefing 'Making every contact count')
- Require mandatory training in brief interventions of all staff in the Midwifery Service who come into contact with pregnant women, e.g. midwives, sonographers, consultation, healthcare assistants, midwifery support groups etc.
- Require that midwives delivering intensive stop smoking interventions are trained to the same standard as NHS stop smoking advisors
- Identify a 'champion' from the Midwifery Service to take an active role in reducing smoking during pregnancy and following childbirth throughout the organisation

Resources and References

Better for Less Briefing
Making Every Contact Count
NHS Yorkshire and Humber, 2010
www.healthyambitions.co.uk/betterforless

NICE Clinical Guidance
How to stop smoking in pregnancy
and following childbirth, June 2010
<http://www.nice.org.uk/PH26>

High Impact Action to Reduce Smoking
Before, During and After Pregnancy
Yorkshire & Humber Regional Public Health, 2008

Orleans, C., Barker, D., Kaufman, N., Marx, J.
Helping pregnant smokers quit:
meeting the challenge in the next decade.
Tobacco Control, 2000. 9 ((supple 3)): p. 6-11.

DiClemente, C., Dolan-Mullen, P., Windsor, R.
The process of pregnancy smoking cessation:
implications for interventions.
Tobacco control, 2000. 9(suppl III): p. 16-22.

Melvin, C., Gaffney C.
Treating nicotine use and dependence of
pregnant and parenting smokers: an update.
Nicotine & Tobacco Research, 2004. 6 (April): p. S107-124.

Russell, T., Crawford, M., Woodby.
Measurements for active cigarette smoke exposure in
prevalence and cessation studies: why simply asking
pregnant women isn't enough.
Nicotine & Tobacco Research, 2004. 6(April): p. S141-151

Contacts

Tobacco Policy

Patricia Hodgson
Regional Tobacco Policy Manager
patricia.hodgson@dh.gsi.gov.uk

Strategy

Tim Barton
NHS Yorkshire and the Humber
tim.barton@yorksandhumber.nhs.uk

Economic Modelling

Helen Mercer
NHS Yorkshire and the Humber
helen.mercer@yorksandhumber.nhs.uk