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Reducing smoking in pregnancy: impact of introducing the babyClear© programme

The babyClear© programme was introduced across North East England to reduce maternal smoking rates, which were the highest in England. Fuse, the Centre for Translational Research in Public Health, has been evaluating the outcomes from this work and this briefing details some of the key findings.

babyClear© is an intervention package designed to support the implementation of National Institute for Health and Care Excellence (NICE) guidance on smoking in pregnancy, by standardising stop smoking interventions and referral pathways across the region.

This focused on training maternity staff to consistently deliver standardised brief interventions at the antenatal booking appointment and provide a clear, enhanced referral pathway from maternity services into Stop Smoking Services (SSS). Systematic identification of smokers using carbon monoxide (CO) screening and opt-out referral to SSS were critical elements of this booking intervention.

A more intensive risk perception intervention, delivered by a small cohort of midwives at the 12-week scan, focused on the dangers of continued smoking during pregnancy and was targeted at those women still smoking at this stage in pregnancy.

Training and materials were supplied to localities for the first year of implementation through Strategic Health Authority (SHA) funding and by Fresh - Smoke Free North East, the region's dedicated tobacco control office. Fuse, funded by the National Institute for Health Research (NIHR) School for Public Health Research (SPHR), undertook an evaluation of key quantitative and qualitative outcomes.

Routine information from Trust maternity services on deliveries before and after the introduction of babyClear© and data from Stop Smoking Services on the number of referrals and quit attempts were obtained by the research team. This information was linked to generate a total cohort of 37,726 singleton deliveries, of whom 72 per cent were non

-smokers and 28 per cent were smokers at the time of their first booking appointment.

Introduction of the risk perception element was delayed in many Trusts, although this is now in place across the region. Therefore, the results here describe the effectiveness of the 'core' booking intervention (identification of pregnant smokers using universal CO monitoring, opt out referral to SSS, increased follow up for smokers, and skills training to all frontline staff in maternity and SSS). It is likely that the risk perception element has an additional positive impact on overall effectiveness.

Key Findings

- **Impact on referral rates:** Referral rates to Stop Smoking Services (SSS) increased progressively in the first three months after implementation, and were 2.5 times higher in month four, compared to the baseline period (95% CI 2.2-2.8).
- **Impact on quit rates:** Quit rates nearly doubled after introduction (aOR 1.8; CI 1.5-2.1). They were higher in pregnancies with a recorded referral to a SSS (aOR 3.2) and where there was a record of setting a quit date with a SSS (aOR 4.8).
- **Impact of smoking on birth weight:** Babies born to women who quit smoking during pregnancy were, on average, 6 per cent heavier than babies born to women who smoked throughout, equivalent to an additional 210g for a baby born at full term.
- **Costs per delivery and per additional quit:** The cost of implementing the babyClear© core package over five years was estimated at £31 per delivery, with over 90 per cent of those costs due to increased referrals to SSS. 31 pregnant women needed to be treated to generate an additional quit at a total cost of £952.
- **Impact on smoking rates:** For a Trust with 3,000 deliveries per year, it is estimated that the core package alone would deliver 96 additional quitters annually, reducing local smoking at time of delivery (SATOD) rates by around 3 per cent.

Key: CI (confidence interval); aOR (adjusted odds ratio)

Qualitative Findings

Pregnant smokers, whilst finding the babyClear© interventions unsettling at first, understood the rationale behind them. The fact that maternity staff framed messages in a positive way around “concern at high CO levels” was also felt to be credible, and women came to view routine carbon monoxide (CO) screening as a positive tool and, for smokers, a positive aid in re-enforcing quitting.

Interviews with maternity staff emphasised the importance of leadership and champions in helping embed the babyClear© approach locally. They also emphasised the need for the process to become part of routine antenatal care, and were clear that more joined-up working between maternity staff and SSS teams reduces the potential for smokers to opt-out of support. Pregnant women were not put off by being challenged on their smoking behaviour so long as they were approached sympathetically; they responded well to support that was flexible, tailored and frequent.

Overall, whilst there was local variability in how the babyClear© intervention was implemented across the region (particularly the risk perception element), there was a high level of fidelity in delivery of it according to the core principles outlined overleaf.

“Babies born to women who quit smoking during pregnancy were, on average, 6 per cent heavier than babies born to women who smoked throughout”

REFERENCE

Bell R, et al. *Evaluation of a complex healthcare intervention to increase smoking cessation in pregnant women: interrupted time series analysis with economic evaluation*. Tobacco Control, 2017.

Web: www.tobaccocontrol.bmj.com/content/early/2017/02/10/tobaccocontrol-2016-053476

FURTHER INFORMATION

For information on evaluation:

Dr Ruth Bell, Newcastle University
Email: ruth.bell@newcastle.ac.uk
Telephone: +44 (0) 191 208 8769

For information on babyClear© implementation:

Ailsa Rutter, Fresh - Smoke Free North East
Email: ailsa.rutter@freshne.com
Telephone: +44 (0) 191 333 7140

Fuse brings together the five North East Universities of Durham, Newcastle, Northumbria, Sunderland and Teesside to deliver robust research to improve health and wellbeing and tackle inequalities. Fuse is one of the five UK Public Health Research Centres of Excellence and a member of the National Institute for Health Research (NIHR) School for Public Health Research (SPHR).

Website: fuse.ac.uk/research/briefs
Blog: fuseopencienceblog.blogspot.co.uk
Facebook: facebook.com/fuseonline
Twitter: @fuse_online
Email: info@fuse.ac.uk
Telephone: 0191 222 729



**When you smoke,
your baby smokes.**

All the important facts you need to know about
the dangers of smoking in pregnancy.

Capture from PH4968 North Tees and Hartlepool NHS Foundation Trust Baby door leaflet