



Incentives for smoking cessation in pregnancy – are they the way forward?

Heather Morgan
Research Fellow, B.I.B.S



Health Services Research Unit
University of Aberdeen



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Overview

- **Background – incentives and BIBS project**
- **Approach and results**
- **Key themes**
- **Emerging issues – role for incentives and how they might be effectively used**



Evidence

- **Incentives**

- **For service users – most effective for one-off behaviours e.g. screening appointments (Jochelson 2007)**
- **For service providers – linked to Quality and Outcomes Framework (QOF) will change GP behaviour (Petersen 2006)**

- **Disincentives are also effective – e.g. increased taxes (Sutherland 2008)**

Definitions

- **Incentives:** financial or non-financial tangible (dis)incentives
- **Recipients:** pregnant/postpartum women, families and/or healthcare providers at local, regional or national level



BIBS

- **Benefits of Incentives for Breastfeeding and Smoking cessation: a platform study for a trial**
- **Project duration: February 2012 – September 2013**
- **This project is funded by the NIHR Health Technology Assessment programme (project number 10/31/02) and will be published in full in Health Technology Assessment in late 2014**
- **The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the HTA programme, NIHR, NHS or the Department of Health**



The team



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- **PI: Pat Hoddinott**
 - **Research team: Quantitative and qualitative research fellows, health economist, information specialist**
 - **Grantholders:**
 - University of Aberdeen: Anne Ludbrook; Marion Campbell**
 - University of Central Lancashire: Fiona Dykes**
 - University of Stirling: Linda Bauld**
 - University of Glasgow: David Tappin**
 - University of Newcastle: Falko Sniehotta**
 - Mastrick Mother and Baby Group, Aberdeen**
 - St Cuthbert's Children's Centre, Blackpool**

Project aims

- **To determine evidence for the effectiveness of incentive interventions delivered within or outside the NHS to a) individuals, families or b) organisations, that aim to increase and sustain smoking cessation in/after pregnancy and breastfeeding;**
- **To determine evidence for effective incentive delivery processes and how they work to increase and sustain smoking cessation and breastfeeding, including their acceptability and how they fit with existing barriers, facilitators and intrinsic and extrinsic motivators to behaviour change;**
- **To assess acceptability and feasibility of a shortlist of candidate incentives for smoking cessation and trying breastfeeding using qualitative data;**
- **To establish whether a trial will be feasible for our shortlisted incentive(s) and, if so, to identify the most appropriate trial outcomes and define how they would be measured.**

Project components

- **Ongoing** mother and baby/toddler group collaboration (with co-applicants in Aberdeenshire and Lancashire) using participatory research methods
 - **Stage 1** – Two systematic reviews/evidence syntheses:
 - smoking cessation in pregnancy
 - breastfeeding
 - **Stage 2A** – Group and individual interviews with service users (Aberdeenshire and Lancashire) and health professionals (UK)
 - **Stage 2B** – Web survey for general public (MORI, UK) and health professionals (UK)
 - **Stage 3** – DCE (discrete choice experiment) for service users (Aberdeenshire and Lancashire) and women of childbearing age/current or former smokers (Research Now TM, UK)
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Stage 1 – Systematic review

Smoking cessation in pregnancy

- **Analysis of research studies and reports on incentives used to help women stop smoking and not relapse;**
- **To examine whether incentives work and which incentives work best – size, type, timing, delivery process.**

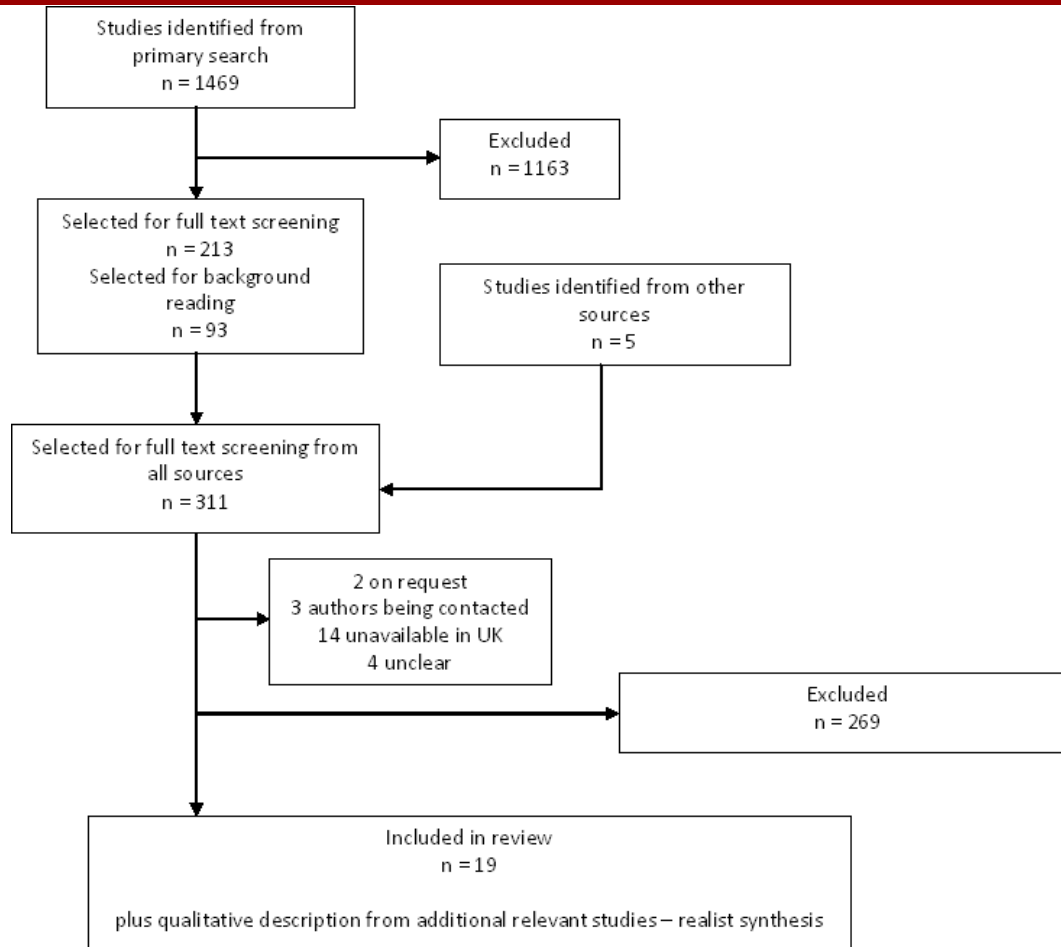


Mixed methods evidence synthesis

- **Effectiveness – all experimental designs**
- **Incentive delivery processes, engagement, mechanisms of action, barriers, facilitators, intrinsic and extrinsic motivators to behaviour change, acceptability and feasibility**
- **Assess fit with wider incentives literature and identify research gaps**



Flow diagram



Included studies

- **Nineteen studies included (18 incentivised individuals and 1 incentivised an organisation)**
 - **Varied in terms of:**
 - combinations of other intervention components being provided alongside incentive (advice/info, interactive education/self-help guides, partner/'buddy' involvement, counselling)
 - self-report vs. biochemical verification of quit status (and method of biochemical verification)
 - whether incentive was provided contingent upon success and, if not, whether it was provided to all study groups
 - composition of control group (study arm, longitudinal data prior to intervention, population estimate)
 - quality (e.g. sample size, reporting of data)
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Results

- **4 studies compared regular contingent incentive payments with non-contingent incentives**

Time	Intervention % quit	Control % quit
~last trimester of pregnancy	32% - 42%	9% - 25%
2 to 3 months postpartum	21% - 33%	0% - 6%
6 months postpartum	8% - 27%	0% - 3%

- **3 studies compared non-contingent incentive payments with no incentive. Results more varied – incentives were lower in value/less regularly provided (and may have been included primarily to aid retention or engagement)**

Additional results

- **Attrition rates overall were generally between 19-28%. However, there was variation in terms of the time of drop out, and treatment arm:**
 - **In last trimester the range of attrition rates suggest a 0% to 20% excess control group attrition might be expected**
 - **By end of pregnancy attrition occurs in both groups (1%-10% in intervention group, 3%-16% in control group)**
 - **Postpartum attrition is generally lower (0%-5% and about the same rate in treatment and control groups)**
 - **Data on additional outcomes are available from some studies on cumulative quit rates/duration of abstinence, deception rates (i.e. differences between self-report vs. biochemical validation), reduction in cigarette intake (among those not quitting), and average earnings from incentives**
 - **Based on news results picked up by our search, we have also made contact with three local NHS services to request data regarding three reported UK-based initiatives**
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Findings

- **Complex intervention so comparisons across studies can be problematic**
 - **Results so far suggest incentives may be beneficial**
 - **Insufficient data available to consider the minimum amount(s) required to initiate longer-term behaviour change**
 - **Additional incentivisation may be particularly useful at key stages (e.g. postpartum)**
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Barriers to engaging in incentive interventions

- **Stigma – being pregnant and being treated**
 - **Lack of childcare**
 - **Lack of transportation**
 - **Engaging in a large number of appointments**
 - **Setting of treatment/intervention**
 - **Low motivation for follow up**
- (Gulliver 2004)**

More questions than answers?

Some themes...



Lifestyle – context and risk

- **Disadvantaged/low income target population**
- **Chaotic lifestyles?**
- **More likely to engage in risky behaviours?**
- **Lotteries/raffles (Gulliver 2004, Lillington 1995) more appealing than guaranteed incentives (Heil 2008, Higgins 2004) where expectation/pressure is built up?**



Formality

- **Preference for less formal, less bureaucratic engagement with health professionals/programme providers?**
- **Better engagement with research staff than with health professionals in recruitment to/retention in study (Walsh 1997, c.f. Gadomski 2011)**
- **BUT: monitoring and contingency is essential for women (Donatelle 2000, Higgins 2004) as well as for providers to focus on target populations (Pound 2005)**
- **What else is essential?**

Partners/'buddy'

- **Involving partners not shown to improve loss to follow up, however, it does improve outcomes (Gulliver 2004)**
 - **Partner encouragement and support is key (Ripley-Moffitt 2008) or helps (Gulliver 2004, McBride 2004)**
 - **Couple-based interventions (McBride 2004)?**
 - **BUT traditional masculinities (Bottorff 2009 and Oliffe 2010)?**
 - **And gendered smoking behaviours/identities (Bottorff 2006), where partner smoking status is the greatest predictor of relapse (Wakefield 1998)**
 - **Non-smoking female supporter – 'buddy' (Donatelle 2000, Lillington 1995)?**
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Community

- **Positive reinforcement and social support is crucial (Donatelle 2000)**
 - **Community programmes with donations from local businesses (Gulliver 2004, Cluss 2011)**
 - **Endorsement of smoking cessation and relapse avoidance?**
 - **Perception of peer pressure or incentives that change behaviour?**
 - **Also to bear the burden of the cost?**
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Cost effectiveness

- **Annual cost to NHS of smoking in pregnancy: £8m-£64m for maternal outcomes and £12m-£24m for infant outcomes (Godfrey 2010)**
 - **Cost of incentives? Controversial? What about cost of other ineffective interventions?**
 - **Public/smoker support for low-mid rather than high value incentives (Lynagh 2011)**
 - **CPIT trial Glasgow in progress – sharing data – e.g. \leq £400 per participant**
 - **Vouchers (Donatelle 2000) or items, e.g. nappies (Gadomski 2011)?**
 - **Targeting most receptive groups prenatally (Ripley-Moffitt 2008) – average effects may disguise sub-group effects – more cost effective?**
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Summing up: is there a role for incentives?

Promising, but:

- **Simple vs. multi-faceted**
- **Guaranteed vs. lottery**
- **Health professional vs. independent programme providers**
- **Contingent vs. non-contingent**
- **Individual vs. joint**
- **Generic (hedonic) vs. health-directed incentive (utilitarian)**
- **Targeted vs. universal**
- **Acceptability**



**Thank you for
your attention**

