Fuse Quarterly Research Meeting

Wednesday 22 July 2015: 9.30am-1.00pm
Venue: Room RV405, Reg Vardy Building, Sir Tom Cowie Campus, Sunderland University, SR1 3SD

Payment for health behaviours: the case of health promoting financial incentives

Aims and objectives

Poor engagement in health promoting behaviours is a key determinant of morbidity and mortality worldwide and results in substantial social, healthcare and economic costs. Despite consistent efforts to encourage uptake of healthy behaviours, unhealthy behaviours remain common. Developing effective methods to encourage uptake of healthy behaviours will result in substantial benefits to society as a whole.

Providing financial incentives to encourage healthy behaviours is one method to encourage uptake of healthy behaviours. Health promoting financial incentives (HPFI) have been defined as cash or cash-like rewards provided directly to individuals contingent on their performance of healthy behaviours.

Research in this area has found that HPFI can be effective in encouraging individuals to participate in health-promoting behaviours, although evidence is mixed in terms of effect size. In the United States of America (USA) for example, the 2010 Affordable Care Act allowed employers to offer rewards, or impose penalties, for those meeting healthy behaviour targets such as quitting smoking. Similar HPFI operate within the German social health insurance scheme. In the United Kingdom (UK), there is growing Governmental interest in using HPFI as part of the 'nudge' agenda. Despite this empirical and political support for HPFI, the acceptability of HPFI interventions is often questioned.

This QRM will provide an overview of research on HPFI, drawing upon case study examples of how HPFI have been used in research and practice.

This event aims:

- To provide details of recent (research) projects focused on financial incentives
- To present a balanced account of the pros and cons of health promoting financial incentives
- To debate the effectiveness and acceptability of using financial incentives to change health behaviours

How will this work on the day?

The format of the event emphasises the opportunity for debate on the pros and cons of HPFI. Three presentations will be heard from academics and policy and practice partners, ending with an opportunity for delegates to debate the use of HPFI, and put their questions and comments to the speakers via a discussion panel forum.

Who should attend?

- Intervention deliverers
    - Local Authority officers involved in public health improvement
- Public health leads/commissioners
- Other potential attendees
    - Public Health England
    - Academics, researchers and public health students

Outline programme

9.30am	**Registration/Arrival**
10.00am	**Chair's introduction** • Speaker: **Claire Sullivan**
10.10am	**Speaker session 1, 20 minutes** • Speaker 1: **Prof Pat Hoddinott**. Title: 'Designing Incentive Trials for Behaviour Change in Women around Childbirth'.
10.30am	**Question & Answer** session with Prof Pat Hoddinott
10.40am	**Speaker session 2, 20 minutes** • Speaker 2: **Prof David Tappin**. Title: 'Financial Incentives for Smoking Cessation in Pregnancy: the CPIT Trial'
11.00am	**Question & Answer** session with Prof David Tappin
11.10am	**Coffee break**
11.25am	**Speaker session 3, 15 minutes** • Speaker 3: **Mr Andrew Radley.** Title: 'Financial Incentives for smoking Cessation in Pregnancy: How much more certain are we that they help?'
11.40am	**Question & Answer** session with Mr Andrew Radley
11.50am	**Speaker session 4, 15 minutes** • Speaker 4: **Dr Emma Giles**. Title: 'Acceptability of financial incentives in the UK population'
12.05pm	**Question & Answer** session with Dr Emma Giles
12.15pm	**Panel discussion** • Discussion with Pat, David, Tricia and Jean Adams
12.55pm	**Close of session** • Speaker: **Claire Sullivan**, thanks, invitation to next QRM
1.00pm	**End**

About the venue

Sunderland University are hosting the event. If you wish to find out more about the location please visit: http://www.sunderland.ac.uk/city/travelinformation/cardirectionsandparking/.

Travelling

The Sir Tom Cowie Campus has two large car parks; one next to the Reg Vardy Centre, and one next to The David Goldman Informatics Centre. The National Glass Centre also has a car park. It is designated as Visitor Parking only. However, it is often easier to use public transport. The University is well served by local buses and Nexus Metro (St Peter's Metro Stop).

Booking your place

The event is free to attend, but you do need to book on the Fuse website. Please note places are limited and early booking is advised.

Speaker and panellist biographies

Jean Adams, NIHR Research Fellow, UKCRC Centre for Diet and Activity Research, University of Cambridge

Jean is currently involved in a range of work exploring issues around dietary public health and food policy – particularly focusing on food marketing, food retailing, cooking and how these factors interact with socio-economic position. Jean currently holds an NIHR Career Development Fellowship which funds an ongoing programme of research on the effectiveness and acceptability of financial incentives for encouraging healthy behaviours. Jean joins Profs Hoddinott, Tappin and Mr Radley in a panel discussion centred on financial incentives.

Emma Giles, Senior Lecturer in Public Health, Health and Social Care Institute, Teesside University

Emma will present work from a four-year programme of research studying the effectiveness and acceptability of financial incentives for health behaviours. Focus groups with members of the public, a survey of UK residents, and interviews with policymakers, form part of the suite of research investigating the acceptability of incentives. Acceptability has been found to be variable due to concerns surrounding bribery and coercion, however acceptance increases for certain population groups including pregnant women and those on a lower income.

Pat Hoddinott, Chair in Primary Care, Nursing Midwifery and Allied Health Professions Research Unit, University of Stirling

Pat will present key findings from the BIBS (Benefits of Incentives for Breastfeeding and Smoking cessation in pregnancy) study. These behaviours are socially patterned and the design of incentive trials needs to take this into account to ensure health inequalities are addressed. The BIBS study synthesised systematic review evidence with primary qualitative, survey and discrete choice experiment research findings to produce a logic model for intervention design. The metaphor of a ladder was used to help translate the logic model into suitable language for service users to understand. Trial 'rungs' were identified that fit with everyday life 'rungs', as incentives alone were considered unlikely to succeed in either reach or effectiveness. The final model had face validity with service users representing the target population who smoke and choose to formula feed.

Andrew Radley, Consultant in Public Health Pharmacy, NHS Tayside

In a recent Cochrane Review, Cahill and Perera note that the use of incentives can improve recruitment and demonstrate higher quit rates and Lumley found incentives to be the most effective intervention. Within smoking cessation services, use of incentives for smoking cessation in pregnancy has been routinely delivered and appear to compare favourably with other standard cessation approaches. The recent phase II clinical trial provides substantial evidence for the efficacy of incentives when compared to routine care. A phase III trial to show the generalisability of an incentives approach in a range of settings is awaited.

However, a number of questions still remain about how useful incentives are in behaviour change. Cahill and Perera observe that there is little evidence to demonstrate a long-term effect from incentives on cessation and may not reduce relapse rates. Researchers have been interested in the way incentives may distort normal behaviours.

Smoking in pregnancy is a harmful health behaviour that is challenging for women to address. Smoking in pregnancy is most frequently observed in communities with high levels of social disadvantage. Perhaps a larger concern for policymakers should be the relatively low rates of engagement of pregnant smokers, even with incentives and the high drop-out rates seen with cessation interventions. Evidence of an enhanced sense of failure of stigma amongst those who drop out of incentive schemes in a general population may also be relevant. This presentation will highlight the evidence on effectiveness of providing incentives to pregnant women to quit smoking, and discuss some of the ethical arguments underpinning their use and limitations found in practice.

David Tappin, Professor for Clinical Trials in Children, School of Medicine, University of Glasgow
David will present work from the CPIT (Cessation in Pregnancy) trial. This study was a phase II exploratory individually randomised controlled trial comparing standard care for pregnant smokers with standard care plus the additional offer of financial voucher incentives to engage with specialist cessation services and/or to quit smoking during pregnancy. Financial incentives were found to be acceptable and may at least double the quit rate when added to existing pregnancy smoking cessation services. This well designed exploratory trial has confirmed acceptability and effectiveness in one UK area linked to one 'specialist' pregnancy cessation service. Methodology has been developed to run a definitive multicentre UK trial adding financial incentives to routine Stop Smoking Services in pregnancy.

Designing Incentive Trials for Behaviour Change in Women around Childbirth

Pat Hoddinott

Heather Morgan, Gill Thomson, Nicola Crossland, Shelley Farrar, Deokhee Yi, Jenni Hislop, Victoria Hall Moran, Graeme MacLennan, Stephan U Dombrowski, Kieran Rothnie, Fiona Stewart, Linda Bauld, Anne Ludbrook, Fiona Dykes, Falko F Sniehotta, David Tappin, Marion Campbell, Mastrick Mother and Baby Group, Aberdeen and St Cuthbert's Children's Centre Blackpool

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uclan
University of Central Lancashire

BIBS study: Benefits of Incentives for Breastfeeding and Smoking cessation: A platform study for the design of trials

- Mixed methods and partnership approach – with mother and baby groups in disadvantaged areas as study co-applicants
- Systematic reviews
- Qualitative interviews
- Surveys: UK Public
  Health professionals
  Discrete Choice Experiment

NIHR Health Technology Assessment programme funded project

Morgan H, et al.. *Health Technology Assessment* 2015: 19; 30
http://www.nets.nihr.ac.uk/projects/hta/103102

The problem

- Smoking and not breastfeeding cluster in disadvantaged communities
- Financial incentives + intensive support show promise (Morgan et al. 2015; Giles et al. 2015)
- Little is known about mechanisms of action of incentives (Marteau et al. 2009, Promberger et al. 2013)
- Therefore assumptions are made
  when designing trials
- How linear is the cause effect mechanism?

Aim

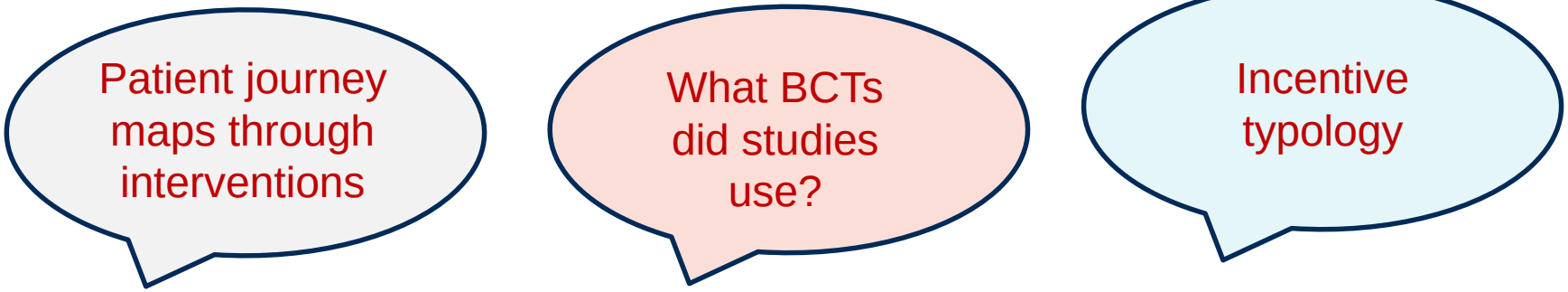
To understand the mechanisms of action of incentives for smoking cessation in pregnancy and breastfeeding to inform intervention/trial design

How?

- Ecological and adaptive systems approach to understanding behaviour
- Iterative
- Integrated theory, evidence, qualitative data and metaphor into a final logic model to fit our complex data

What we did

- Reviews of incentive effectiveness literature
- Review of the qualitative research on barriers and facilitators to stopping smoking in pregnancy and breastfeeding
- PPI, qualitative interviews, intervention vignettes



Patient journeys through smoking cessation in pregnancy incentive trials included in a meta-analysis

Study and category	M2	M3	M4	M5	M6	M7	M8	Birth	M1	M2	M3
Donatelle 2000[135] A1	WB£IG TWB£S	TWB£S	TWB£S	TWB£S	TWB£S	TWB£S	WB£ TWB£S	TWB£S	TWB£S	WB£ TWB£S	
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Higgins 2004[138] A1				WB£ Q B£B£B£B£B£ B£B£ B£B£ B£B£	B£B£ B£B£ B£B£	B£ B£ B£	B£	B£	WB£ WB£ B£ B£ B£ B£	WB£ B£ B£	WB£ B£ B£
Mantzari 2012[103] A1		T G£ B£ B£	B£ B£		B£		B£ G£			B£	

36 face to face contacts
- incompatible with work or childcare
- transport costs

What BCTs were used besides incentives?

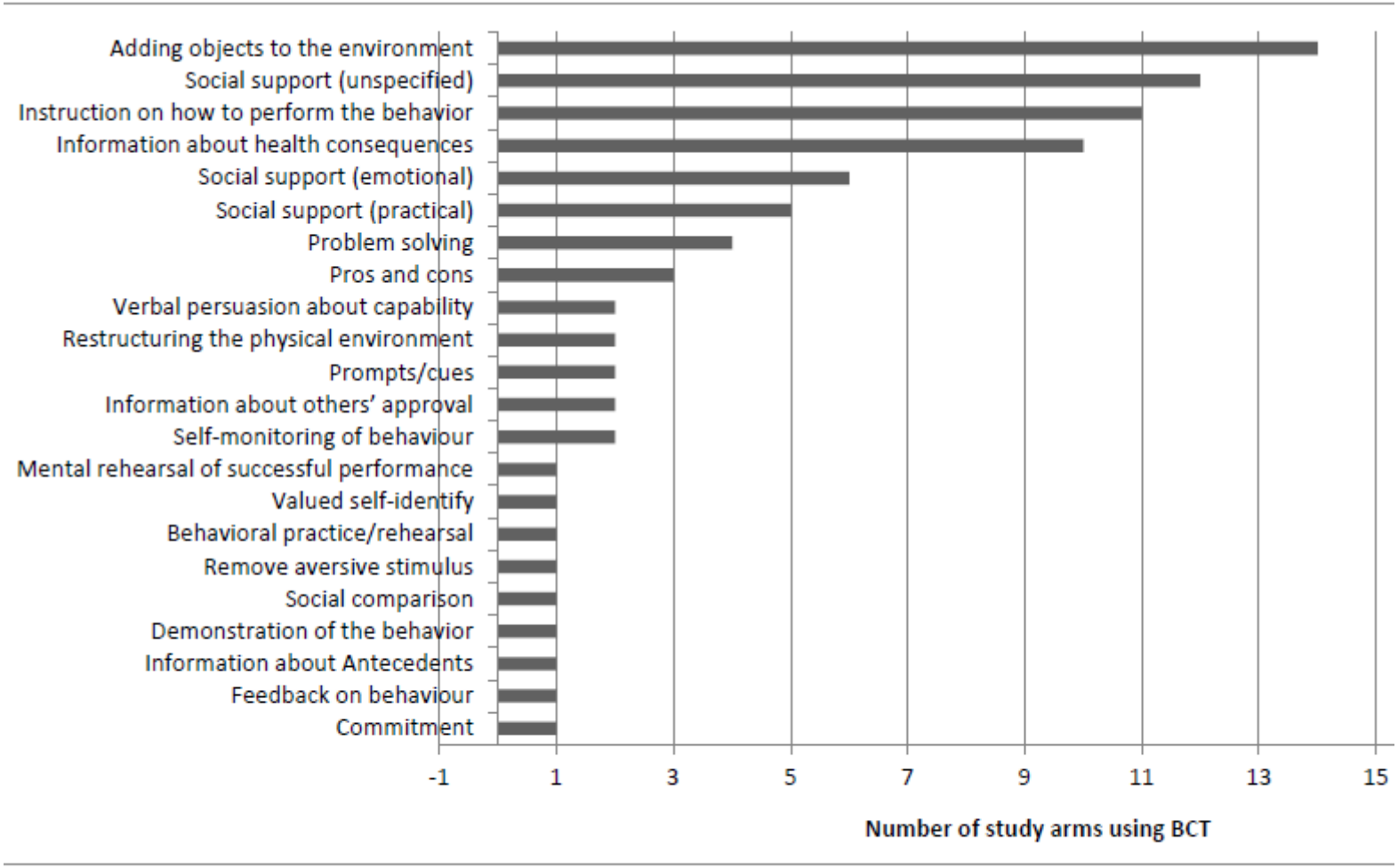


Figure 15 Behaviour change techniques used in included breastfeeding studies

Crossland et al. Incentive Types and Meanings. *Social Science and Medicine.* 2015;128(3):10-17

Shopping vouchers offered women rare opportunities for feeling valued, choice, and reward for effort amidst adversity

Incentive type	Examples	
Vouchers and/or cash	Cash, shopping vouchers range US$5<$250	Mantzari et al., 2012; 1995; Edwards et al., 2009; 013; Finch & Daniel, 2002;
'Gifts', 'gift voucher' or 'lottery prize'		., 1998; Lillington et al., 1995; Edwards et al., 2009; Cluss et a 11; McBride et al., 2004; Ripley-Moffitt et al., 2008; Dungy et al., 1992; Cohen & Mr 994; Reeves Tuttle & Dewey, 1995; Wright et al., 2012
Baby items	Nappies, bottles, wipes, powder, baby bibs/clothes, sipper cups, car seat, stroller, infant health kit, toys	Gulliver et al., 2004; Edwards et al., 2009; Lillington et al., 1995; Nichter et al., 2007; Sciacca et al., 1995a; Sciacca et al., 1995b; Reeves Tuttle & Dewey, 1995; Zimmerman, 1999; Volpe & Bear, 2000
Maternal gifts	Toothbrushes, chewing gum; chocolate, aromatherapy massage, hair/beauty vouchers, flowers, bubble bath, photograph, exercise sessions	Lowe et al., 1997; Morgan et al., 2005; Ussher et al., 2008; Pbert et al., 2004; Gulliver et al., 2004; Sciacca et al., 1995a; Sciacca et al., 1995b Zimmerman, 1999; Reeves Tuttle & Dewey, 1995; Volpe & Bear, 2000; Thomson et al., 2012
Social experience	Day trip, cinema, football tickets, meal/drink out	Albrecht et al., 1998; Gulliver et al., 2004; Sciacca et al., 1995a; Sciacca et al., 1995b; Thomson et al., 2012
Behaviour related items (excludes prescriptions e.g. nicotine replacement)	Breast pump, breast pads, cream, expressing kit	Bliss et al., 1997; Hayes et al., 2008; Dungy et al., 1992; Rasmussen et al., 2011; Chamberlain et al., 2006; Cohen & Mrtek, 1994; Bai et al., 2000; Sciacca et al., 1995a; Sciacca et al., 1995b; Zimmerman, 1999
Food	Food packages, healthy snacks	Finch & Daniel, 2002; Chiasson et al., 2011; Thomson et al., 2012
Household services	Cleaning	Gulliver et al., 2004; Pugh & Milligan, 1998
Awards and certificates	Congratulations card 'Quit certificate'	Morgan et al. 2005

Surveys of acceptability

7 most promising incentive strategies:

- four provided shopping vouchers to women
- one was a breast pump worth £40
- two were payments to local health services for meeting targets for verified behaviour change

Key Findings:

Being older, female, leaving school early and living in the North were independent predictors of disagreement with shopping vouchers

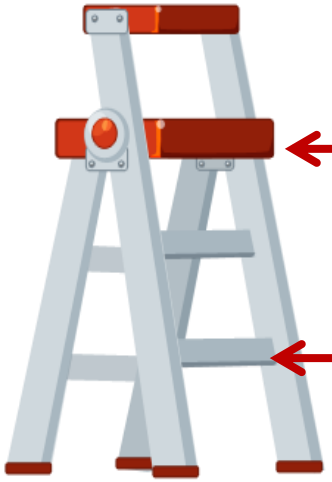
Hoddinott et al. Public Acceptability. *BMJ Open;* 2014;4:e005524

Why did we combine theory, evidence, metaphor and logic models?

- Logic models are recommended for public health interventions (Armstrong 2008)
- Partnership: intervention co-design
- Acknowledge the power of real life narratives and situations – rational, emotional, senses
- Maximise utility for all stakeholders
- Because one intervention doesn't suit all women, in all contexts, over the course of a pregnancy

Consensus for metaphor

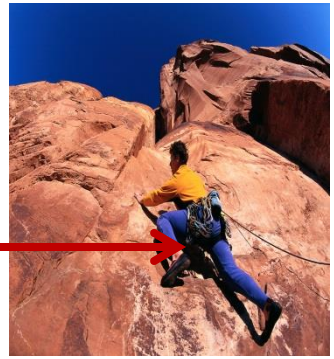
Goals, Incentive, Achievement and Reward

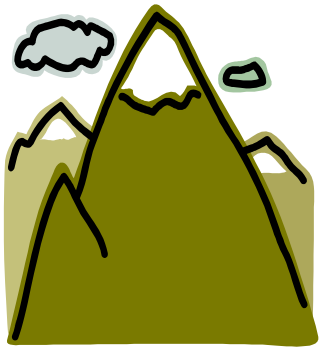


Behaviour maintenance

Inequalities of access

Help to reach goal





Individual responsibility

- **Access and reach**
- **Universal meaning**
- **Multiple purposes**

Real, everyday

Unstructured

Ladders

Metaphor	Represents	Examples
Rungs	Something/someone/a situation that helps or motivates a woman and supports her at each step	Intrinsic desire and willpower A pregnancy event Family support An incentive programme
Damaged rungs	Intrinsic or extrinsic barriers or de-motivators that a woman may encounter	A partner relapses and starts smoking again Stressful events
Missing rungs	Lack of contemplation of the behaviour, independence from or rejection of rungs	A woman might not believe the health evidence Never seen a woman breastfeed

Incentive ladder logic model for behaviour change

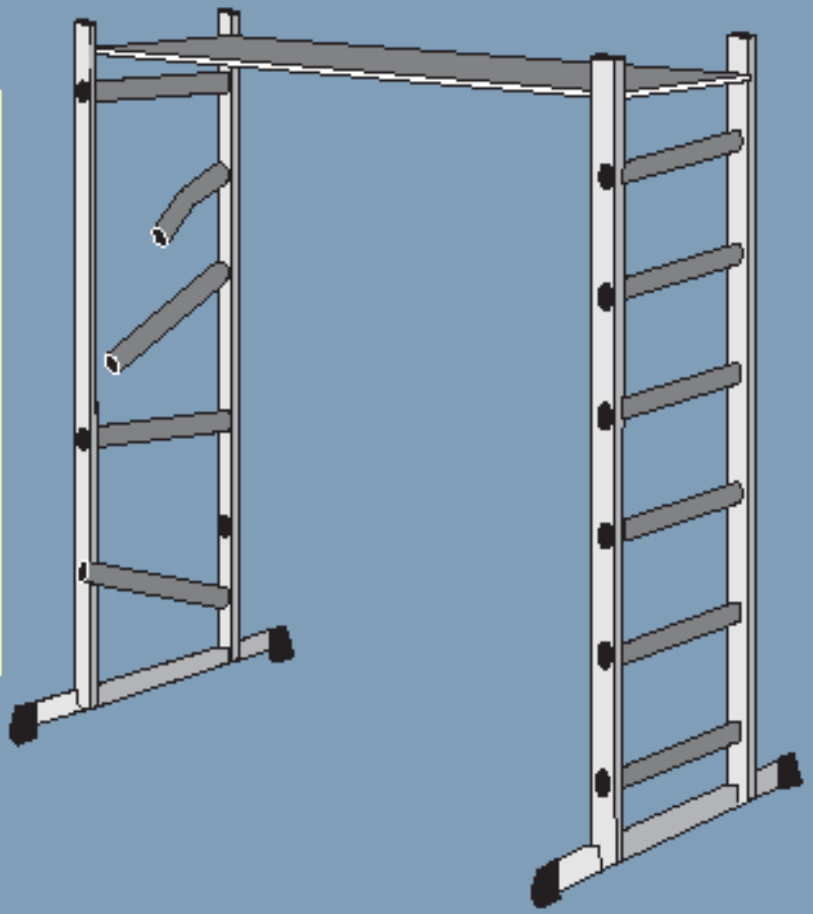
Health and Wellbeing

unintended consequences

behaviour, outcomes and maintenance

unintended consequences

preparatory behaviour(s)



Everyday Life Rungs

- intrinsic influences
- extrinsic influences
- pregnancy and birth:routine care and opportunities
- private-public interface

Incentive Programme Rungs

Content

- incentive components
- other programme components (Includes BCTs)

Delivery

- settings
- providers
- recipients
- timing, communication modes and intensity

Face validity of ladders

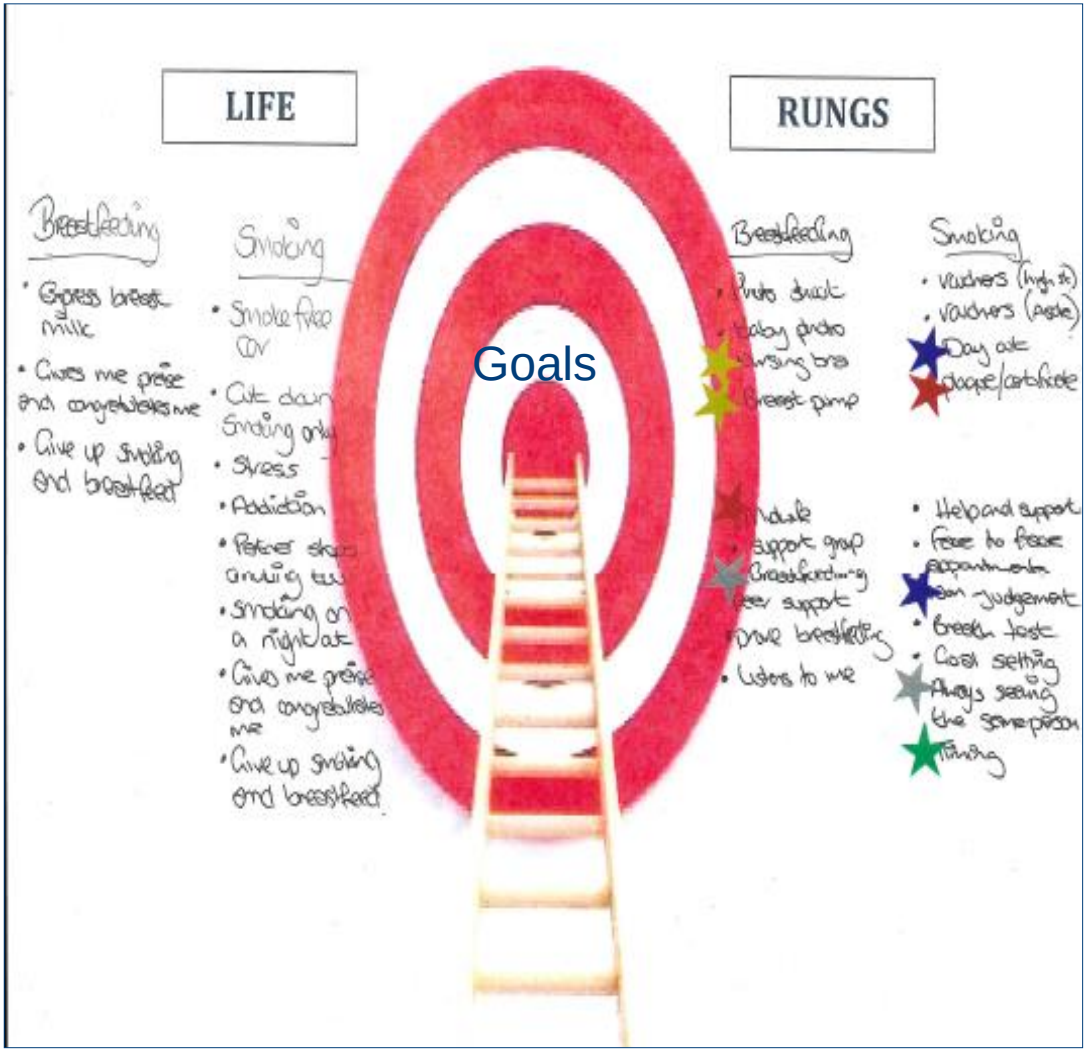
Labelled and unlabelled rungs

Smoke free car

Stress

Smoking on night out

Express breast milk



Day out

Certificate

Breast pump

Face to face

Listens to me

Always seeing the same person

Ladders, linearity and incentive trial design

- There were conflicting narratives of everyday emotional, social and material environments and the meaning of incentives for behaviour change could rapidly change
- Women struggle on their own, even to the extent of concealing behaviour
  - Important for outcome data
  - Involve significant others/buddies

Ladders, linearity and incentive trial design

- Rigid, prescriptive interventions which place the onus on the woman to behave ‘correctly’ may risk women feeling judged and pressurised
- Engagement: to avoid losing face, women may resist enrolment or disengage with services
- Tailoring to circumstances is valued
- Uncertainty remains about reach and whether incentives can address health inequalities.

Conclusions

- Complex adaptive mechanisms – wellbeing is a key driver of decision making
- Incentive(s) + BCTs + intensive individually tailored interventions show promise
- Detailed reporting of intervention/comparison group components and their delivery, usual care and context in trials is required to enable us to draw meaningful conclusions about what works and the reach
- The ladder model has face validity – but is more linear than the data
- More fieldwork is required ……

THANK YOU

- Funded by the NIHR Health Technology Assessment programme (project number 10/31/02).
- NMAHP-RU (Stirling), HSRU and HERU (Aberdeen) receive funding from the Chief Scientist Office of the Scottish Government Health and Social Care Directorates.
- 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

Publications

- **Morgan et al.** Full BIBS report. *Health Technology Assessment* 2015: 19; 30 *http://www.nets.nihr.ac.uk/projects/hta/103102*
- **Hoddinott et al.** Public Acceptability. *BMJ Open;* 2014;4:e005524.
- **Thomson et al.** Unintended Consequences. *PLoS ONE.* 2014:9(10): e111322
- **Crossland et al.** Incentive Types and Meanings. *Social Science and Medicine.* 2015;128(3):10-17
- **Hall Moran et al.** Incentives to Promote Breastfeeding: A Systematic Review. *Pediatrics.* 2015:135,(3).

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Tweet: @PatHoddinott

Smoking during Pregnancy

David Tappin

Professor of Clinical Trials for Children

Health Impacts

Mothers

- Lifelong smokers lose 10 years of life
- Children grow up to be smokers

Potential gains

- Because pregnant women are less than 40 years old if they quit they will regain all 10 years of life that would be lost
- Children may not grow up to be smokers

Child Health Impacts

Perinatal

- Stillbirth
- Pre-term birth (<37 weeks)
- Foetal growth restriction

Child Health

- Sudden Unexplained Death in Infancy (SUDI); Lower Respiratory Illness; Asthma & wheeze;
  Invasive meningococcal disease

Background to smoking and cessation during pregnancy

- **80%** women have babies so pregnancy is an ideal opportunity to help nearly all women who smoke to quit while still healthy
- **20%** of pregnant women smoke in Scotland
- Extra early health services savings - pregnancy **(£100-£700**) & child's first year **(£150 - £300**) per smoker who quits

Glasgow Pregnancy Stop Smoking Service

- Well developed pro-active smoking cessation service for pregnant women that adheres to NICE guideline
- All self-reported smokers are referred to specialist advisers (opt-out) electronically at maternity booking who make contact by phone to ask about smoking and cessation and to make a face to face appointment

Treating pregnant smokers

If pregnant smokers set a quit date they are treated using Withdrawal Orientated Therapy

Treating pregnant smokers

If pregnant smokers set a quit date they are treated using Withdrawal Orientated Therapy and are offered free Nicotine Replacement Therapy

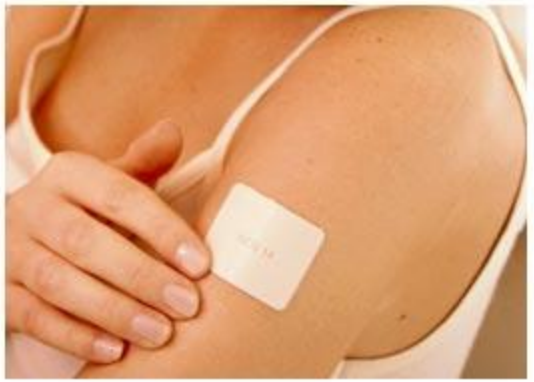
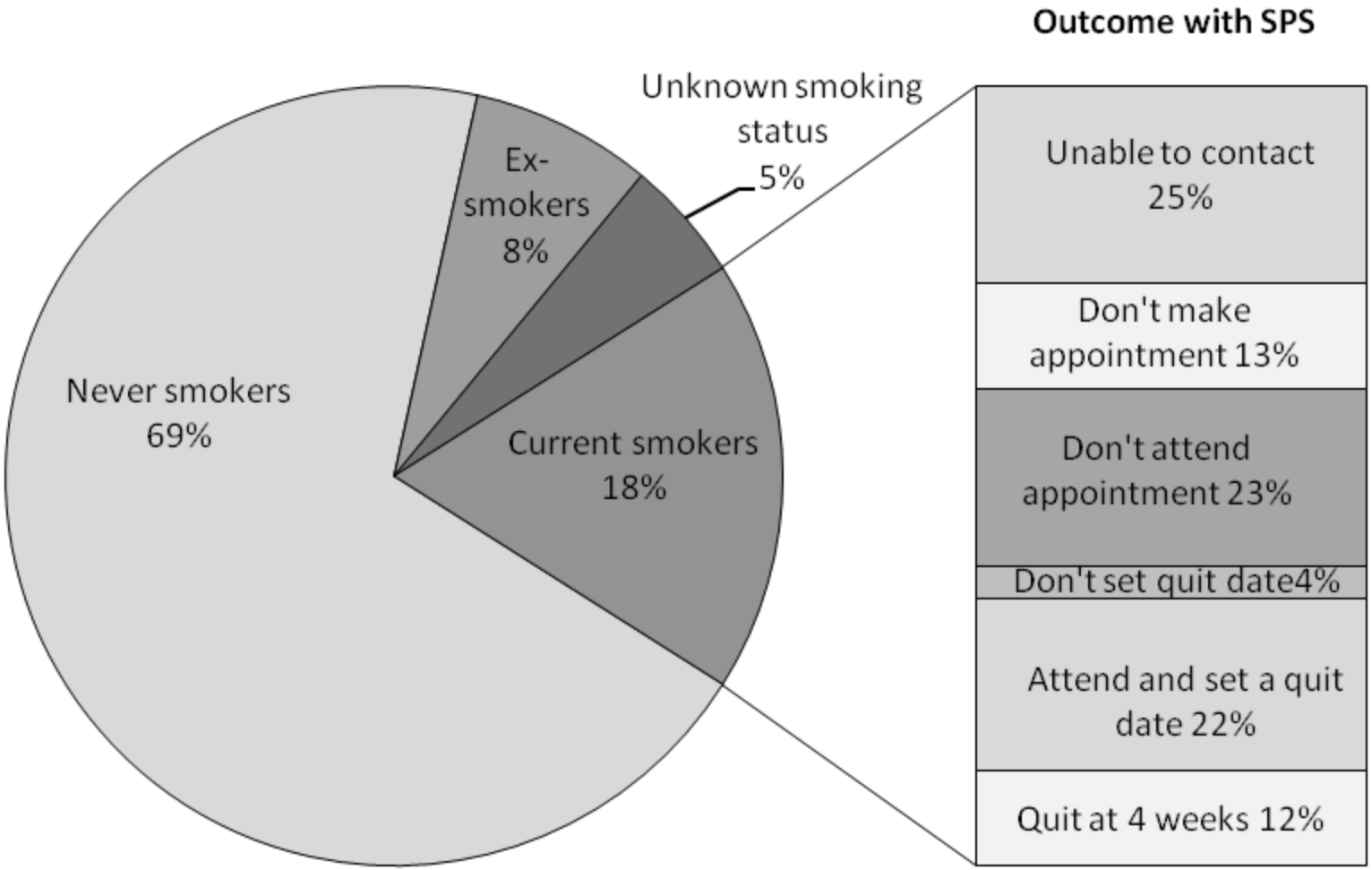
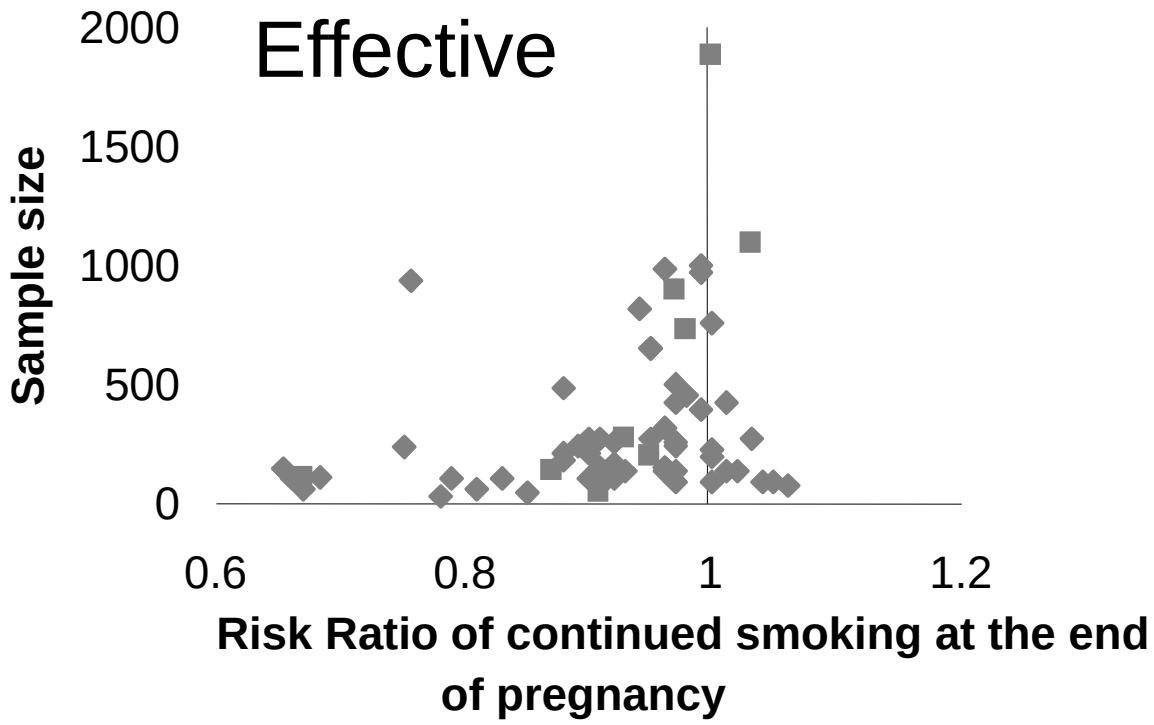


Figure 3: Smoking in pregnancy, NHSGGC 2013: prevalence at booking and outcomes with Smokefree Pregnancy Service



Interventions to help pregnant smokers to quit (Cochrane Review)



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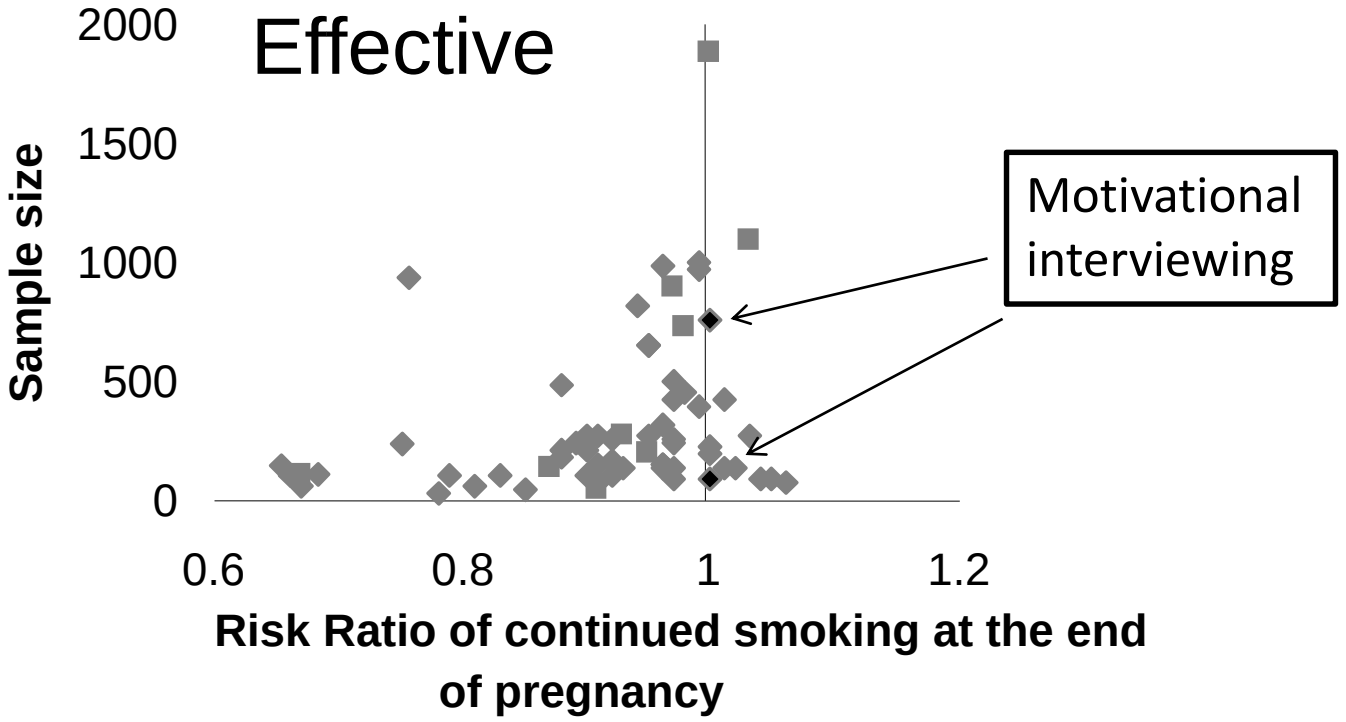


Interventions to help pregnant smokers to quit – Nicotine replacement therapy (NRT)

- In non-pregnant population – NRT doubles quit rate
- 2 large randomised controlled trials in pregnancy

  No significant increase in quit rate over placebo patches

Coleman T. N Engl J Med 2012;366(9):808-18

Berlin I. BMJ 2014;348:g1622.

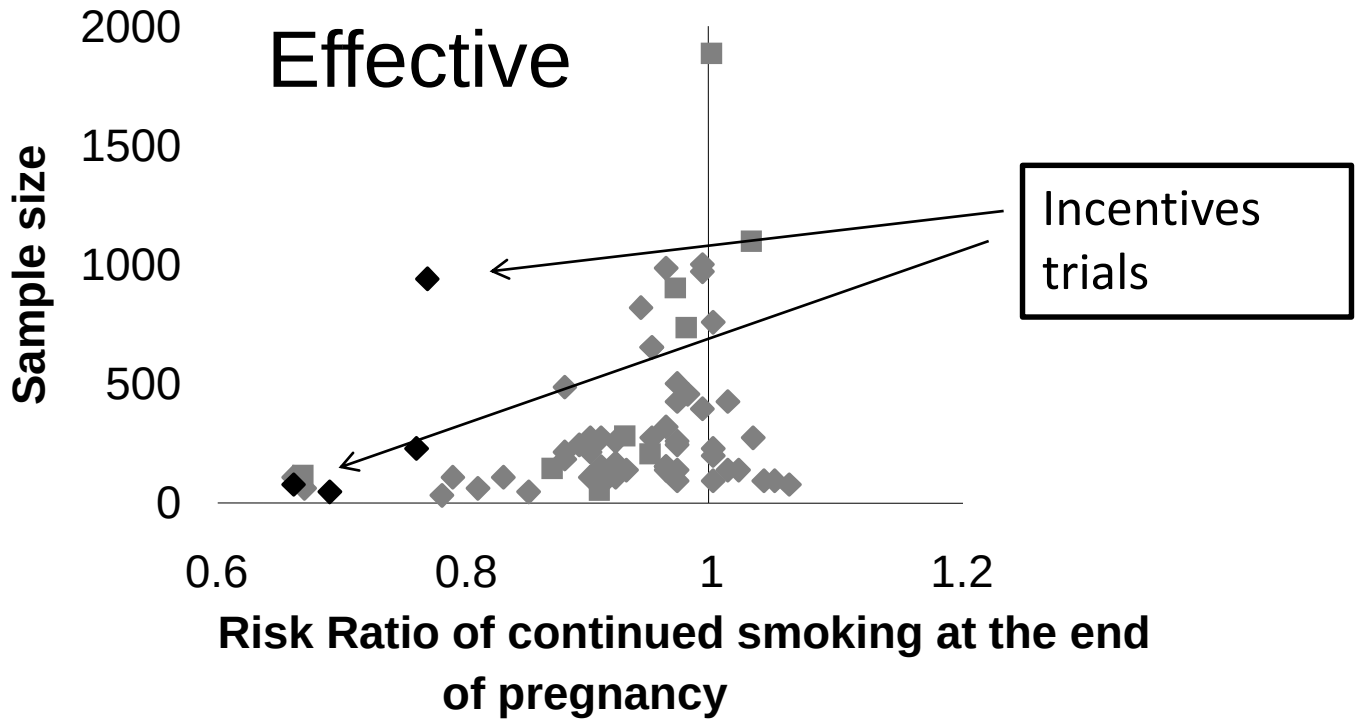
Interventions to help pregnant smokers to quit – Physical Activity

No significant increase in quit rate

Ussher M. BMJ 2015;350:h2145

What smoking cessation intervention does work in pregnancy?

Financial incentives to help pregnant smokers to quit (Cochrane Review)



Why Financial Incentives?

- Used in other areas with some success e.g. weight loss
- Cochrane review - financial incentives more effective than other strategies
- NICE recommendation for UK trial in pregnancy

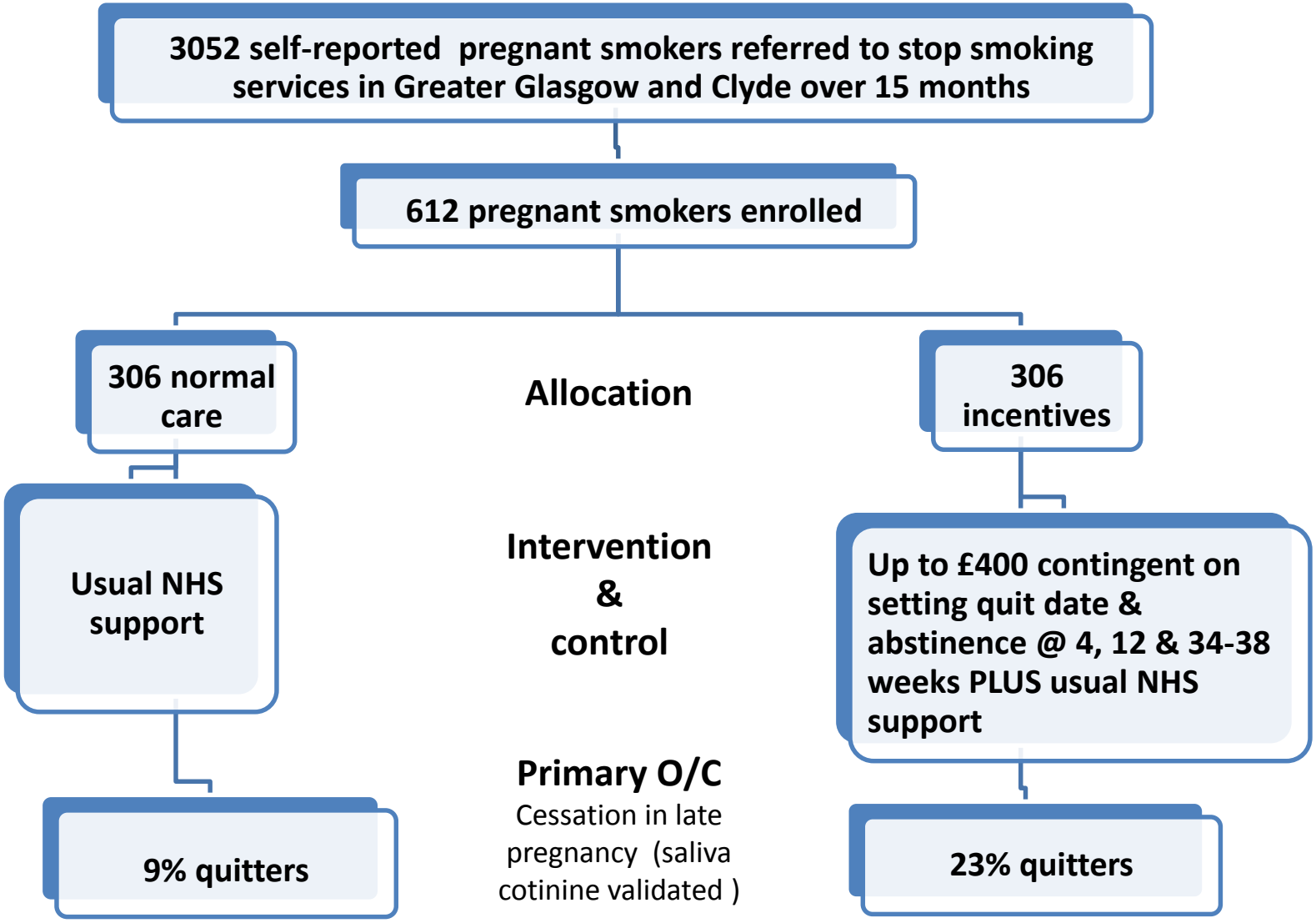
Cessation in Pregnancy Incentives Trial (CPIT): effectiveness & cost effectiveness

Funded by the Chief Scientist Office , Director of Public Health NHSGG&C Health Board, Glasgow Centre for Population Health, Royal Samaritan Endowment Fund, Yorkhill Children's Charity

UKCTAS
UK Centre for Tobacco & Alcohol Studies

Jun'15

Trial Design



Voucher Spend

Retailer	Spend		Retailer	Spend
Argos	£11,053		Matalan	£3,915
BHS	£755		Mothercare	£4,872
Boots	£3,312		New Look	£4,485
Comet	£50		Officers Club	£72
Debenhams	£1,842		Peacocks	£114
DW Fitness	£139		Poundstretcher	£1,360
Early Learning Centre	£153		River Island	£2,666
Ernest Jones	£25		Semichem	£462
H Samuel	£149		Shoezone	£202
Halfords	£248		Superdrug	£1,183
HMV	£418		The Factory Shop	£1,184
Homebase	£287		TJ Hughes	£313
House Of Fraser	£40		Toys R Us	£3,891
Iceland	£8,626		Wilkinson	£461
JJB Sports	£170		**Total**	**£51,363**

Main Trial Results

Primary Outcome

- **14%** absolute increase in quit rates late pregnancy **9%** vs **23%**
- Relative risk of having stopped smoking by the end of pregnancy **2.63** [95% CI 1.73-4.01, p<0.0001]

Main Trial Results

Secondary Outcomes

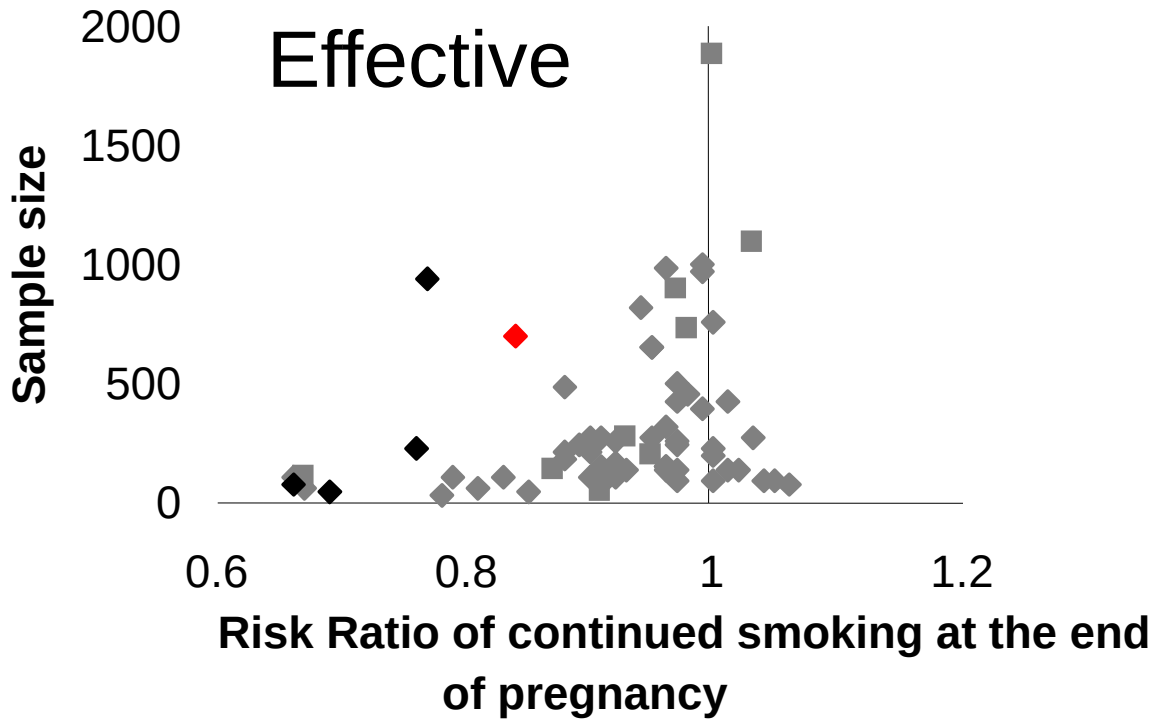
- Improved postnatal cessation at 6 months post delivery **4%** vs **15%**

  Tappin D, Bauld L. BMJ 2015; 350: h134.

  'The Tappin 2015 trial may be viewed as a benchmark study, for the scale of recruitment (612 women) and the robustness of its findings.'

  Cahill K. Incentives for smoking cessation. Cochrane Database of Systematic Reviews 2015

Financial incentives to help pregnant smokers to quit



Cessation in pregnancy incentives trial (further analysis)

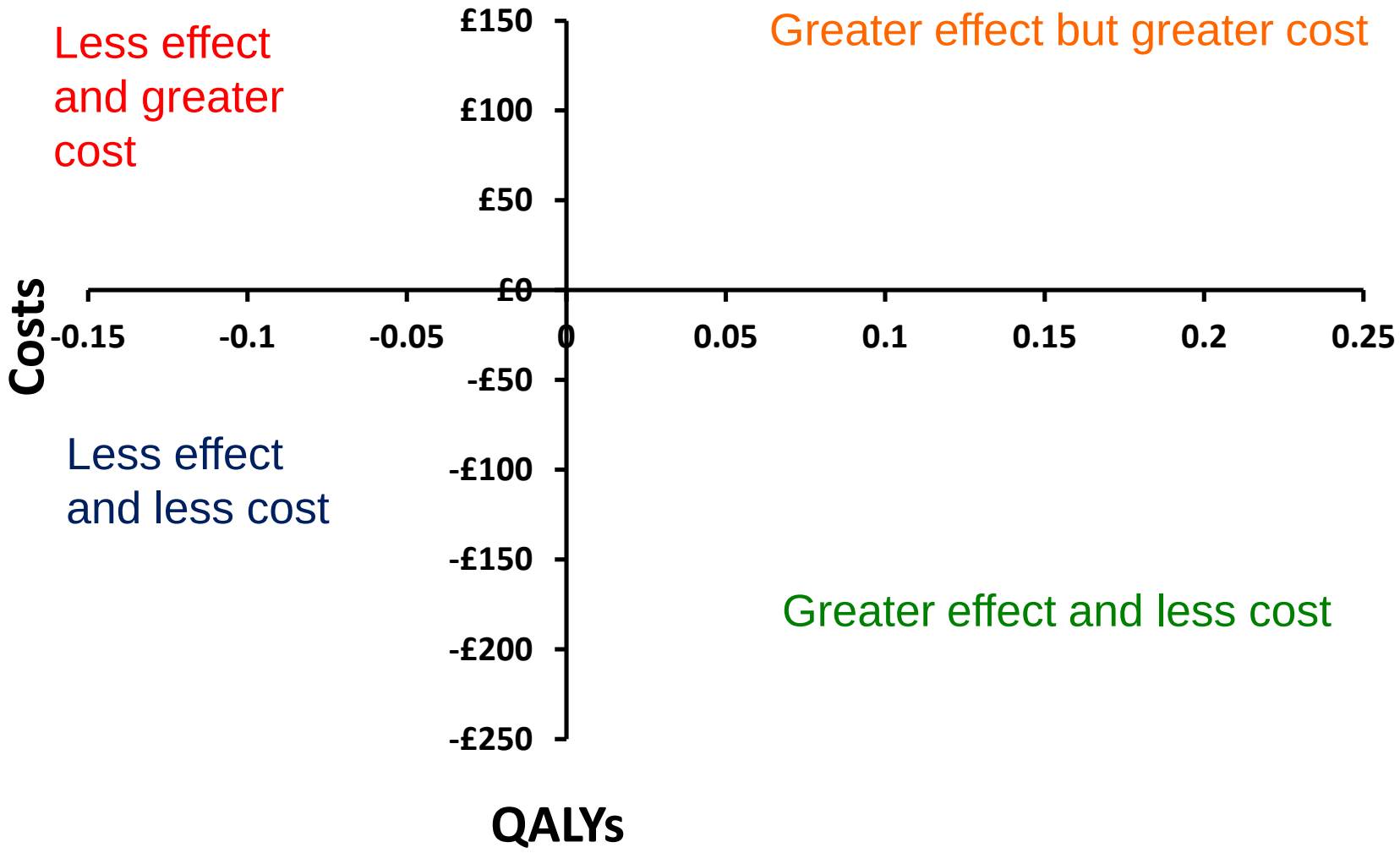
- **There was an increase in birthweight of 150g** for the extra 14% of pregnant smokers who quit with incentives

Economic Evaluation

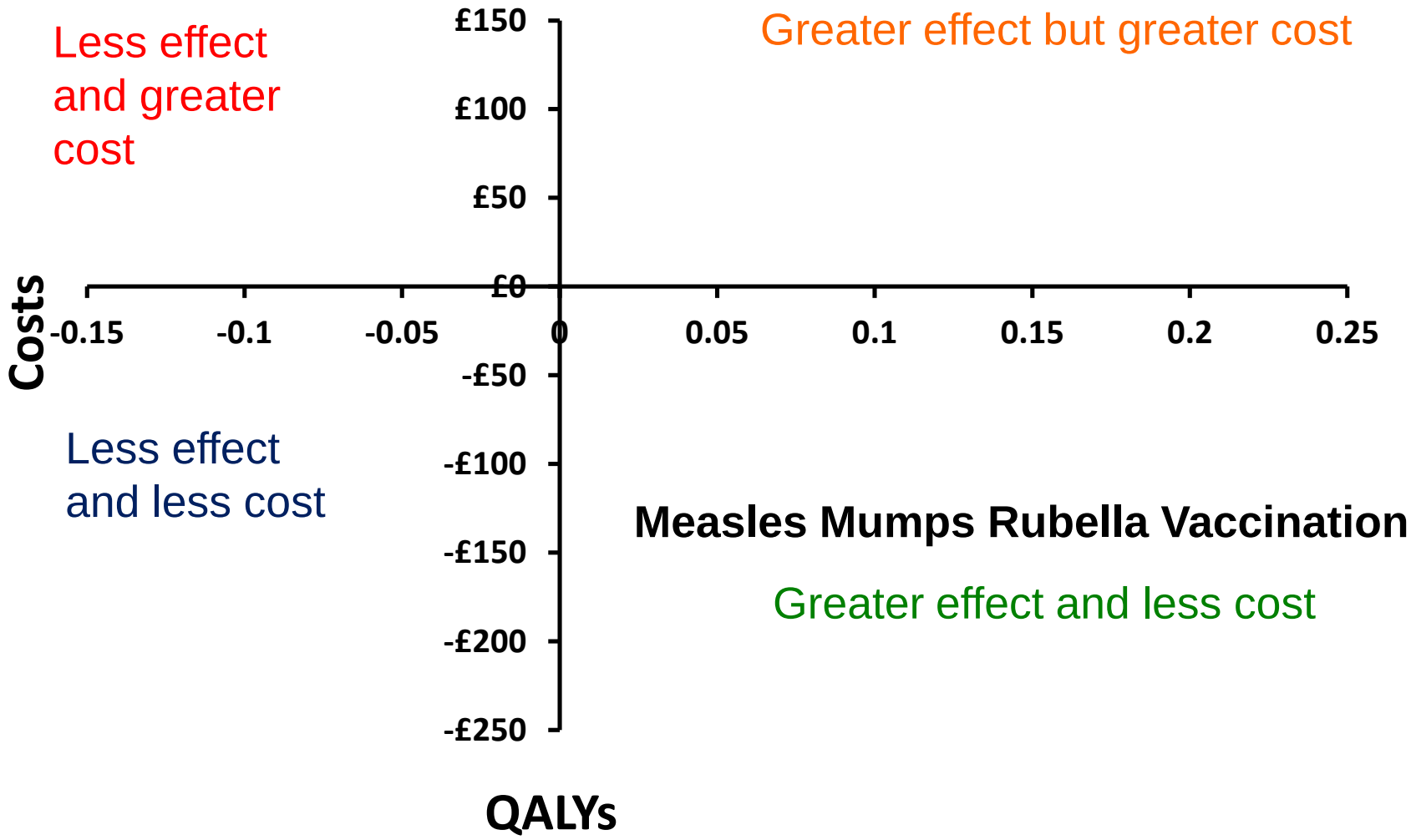
- Lifetime analysis: Incremental cost per QALY

  NICE threshold £20,000 per QALY

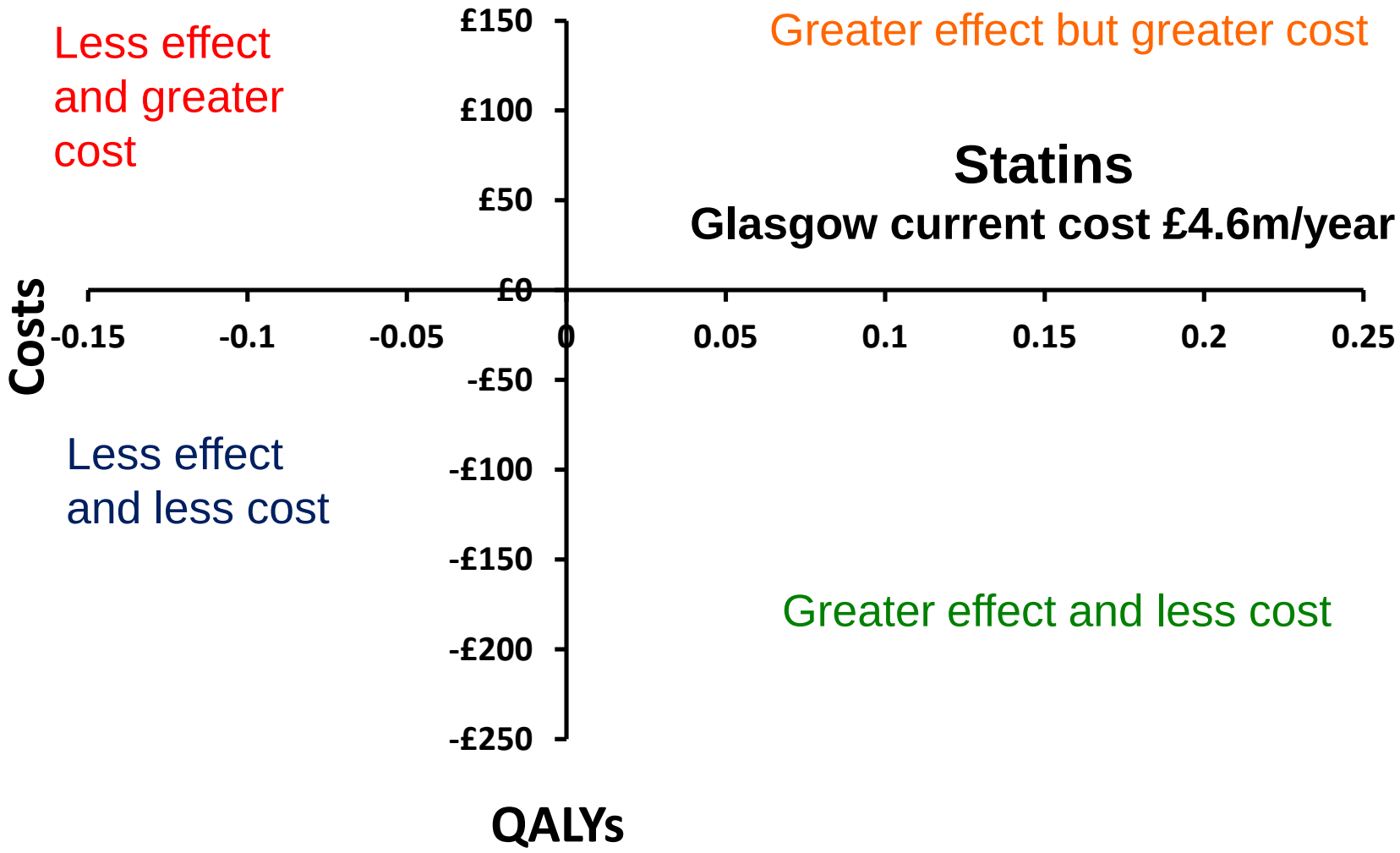
Cost effectiveness plane



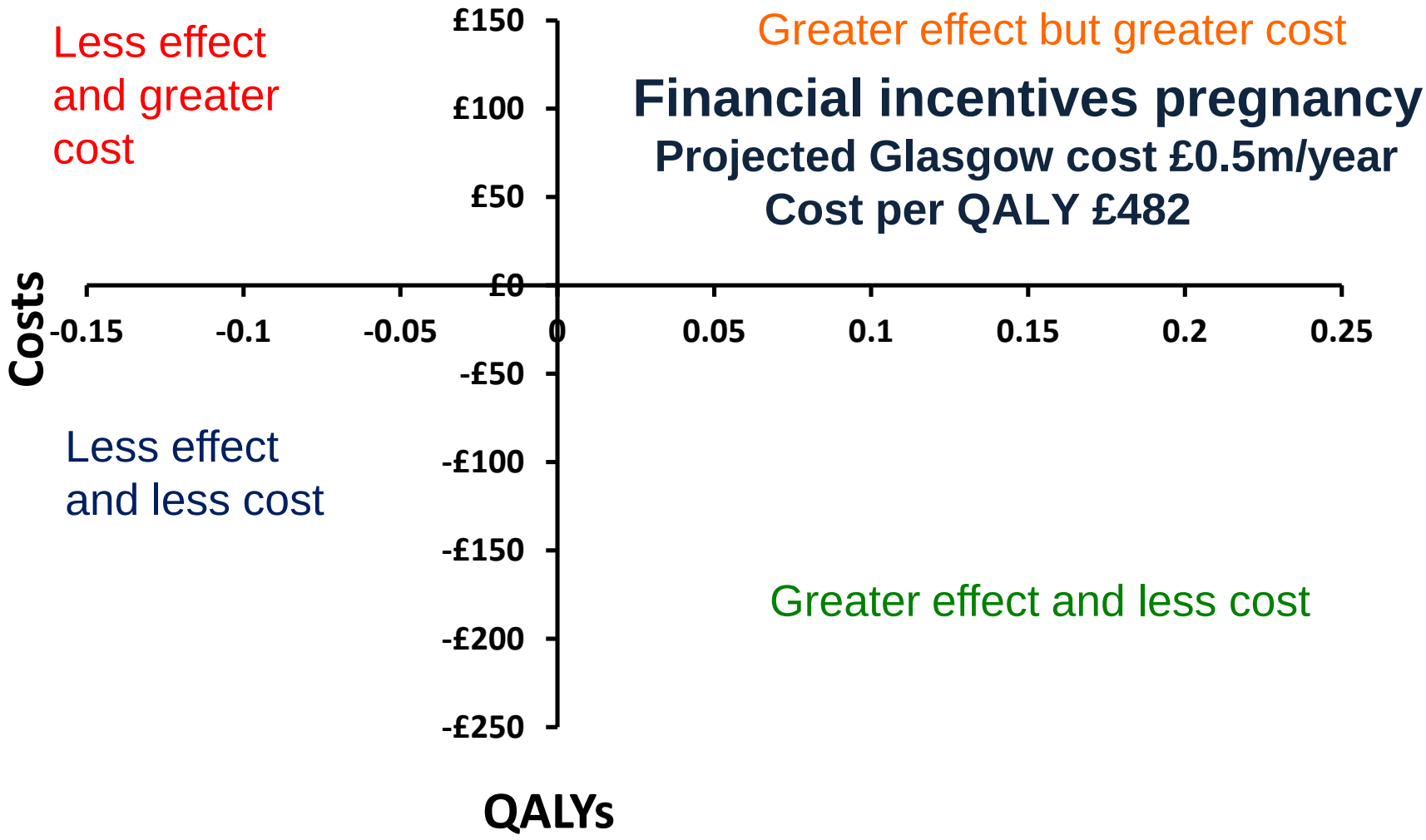
Cost effectiveness plane



Cost effectiveness plane



Cost effectiveness plane



Conclusions

- Financial incentives may double the quit rate (8.6% to 22.5%) when added to stop smoking in pregnancy services
  - uncertainty due to lack of evidence about generalisability - single centre exploratory nature of CPIT II trial
- Financial Incentives are likely to be highly cost-effective & well below the NICE threshold of £20,000/QALY
  - uncertainty due to lack of evidence about long term cessation – 6 month postnatal cessation self-report only

Conclusions

Multi-centre definitive phase III trial is required

'Whilst CPIT II was a rigorous trial it may not convince significant numbers of policy makers particularly given that using financial incentives is a controversial intervention. Consequently, it is my opinion if we could show that the intervention was as effective in other areas of the UK and the effect persisted to 6 months after the baby was born, then this should convince the majority of decision-makers.'

David Torgerson, Director of York Trials Unit

Questions?

Payment for health behaviours: the case of health promoting financial incentives

Financial Incentives for smoking Cessation in Pregnancy: How much more certain are we that they help?

Andrew Radley
NHS Tayside
July 2015

Give It Up For Baby: outcomes and factors influencing uptake of a pilot smoking cessation incentive scheme for pregnant women

A Radley, P Ballard, D Eadie, S MacAskill, L Donnelly, D Tappin

BMC Public Health 2013, **13**:343

Outline

- Brief background
- How it works
- Who it appears to work for
- Who it doesn’t appear to work for
- Further developments……

Brief background: Qualitative experiences

- Smoking is an embedded and unquestioned part of the identities of many women
- Smoking in pregnancy triggers anxiety and guilt.
- Quitting seen to disrupt relationships and removing a habit perceived as helping to cope.
- Partners play a very important role (Fleming 2013).

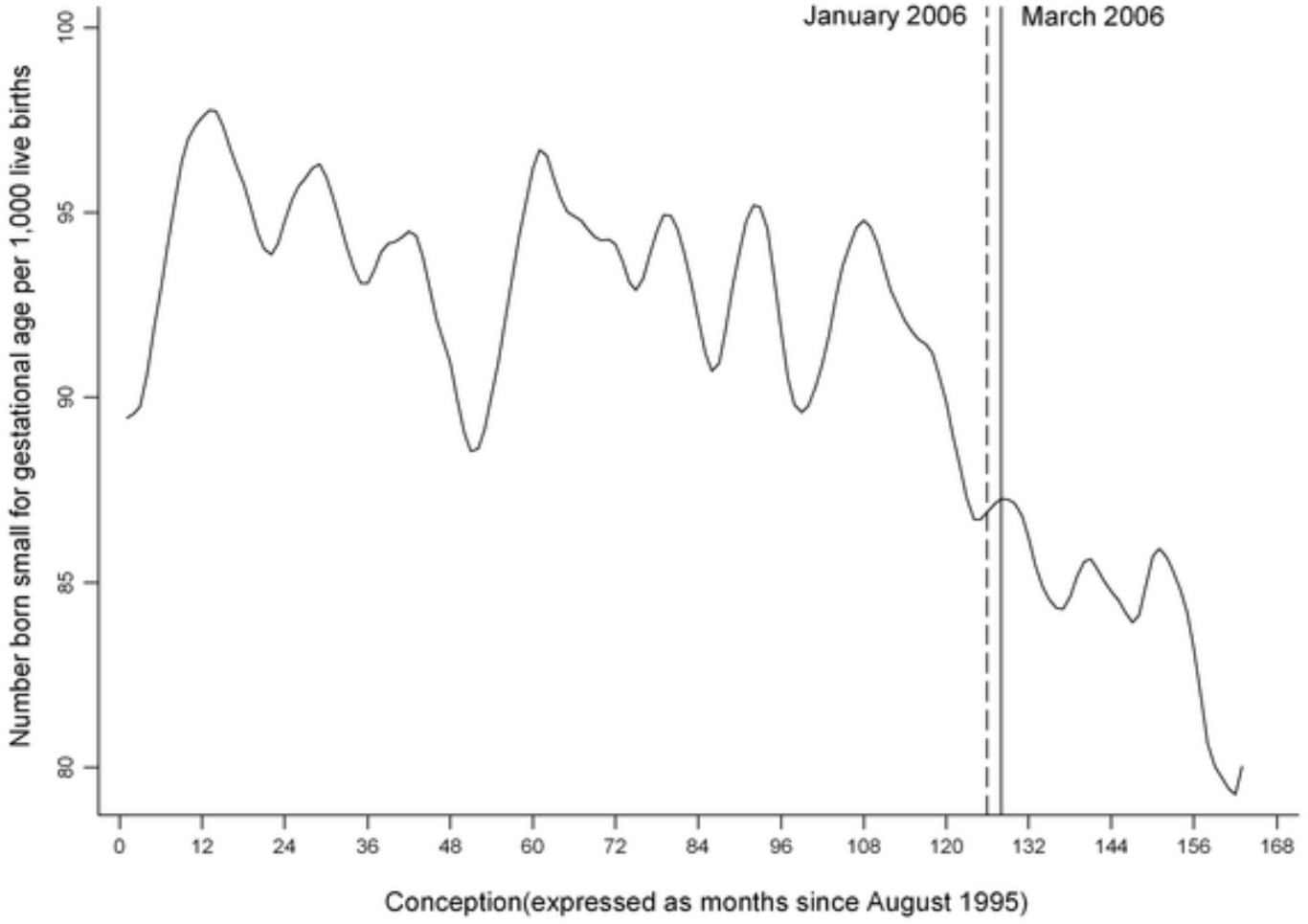
Acknowledgement to Catherine Chamberlain

Brief background: Smoking in pregnancy

- Most significant 'potentially preventable' cause of preterm birth & low birth weight (Lumley 2009)
- Marker of social disadvantage and principal cause of health inequality (Social determinants of health report 2008)
- Smoking declining, but still high rates among women from lower socioeconomic groups (Mackay 2012)
- Complex associations with poverty, marginalisation, mental health (including race-related stress) (Orr 2012)

Acknowledgement to Catherine Chamberlain

Figure 2. Time trend in the number of infants delivered small for gestational age per 1,000 live births.



Mackay DF, Nelson SM, Haw SJ, Pell JP (2012) Impact of Scotland's Smoke-Free Legislation on Pregnancy Complications: Retrospective Cohort Study. PLoS Med 9(3): e1001175. doi:10.1371/journal.pmed.1001175
http://www.plosmedicine.org/article/info:doi/10.1371/journal.pmed.1001175

Contentious issues

- Emphasis on rights of unborn child can be used to impose male privilege and assume authority over women's behaviour (WHO 2001).
- Risk increasing marginalisation and stigma (Fleming 2013).
- Social pressure can inspire resistance and rebellion (Bond 2012; Wiggington 2013).
- Individual policies risk victim-blaming and unlikely to impact on root causes (i.e. inequalities) (Baum 2009).

Acknowledgement to Catherine Chamberlain

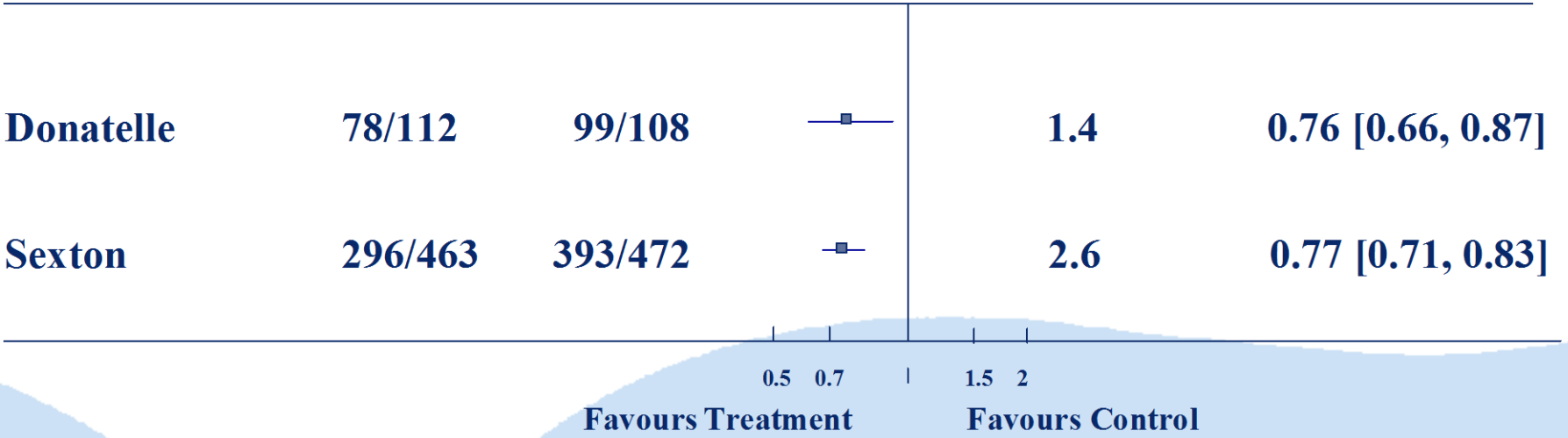
Previous Experience

- 2004/05 – Nationally funded (£60K) midwife-led project in Dundee showed no quitters at 12 months

- 2006 – 6 pregnant women contacted standard services across Tayside – none stayed for 4 weeks

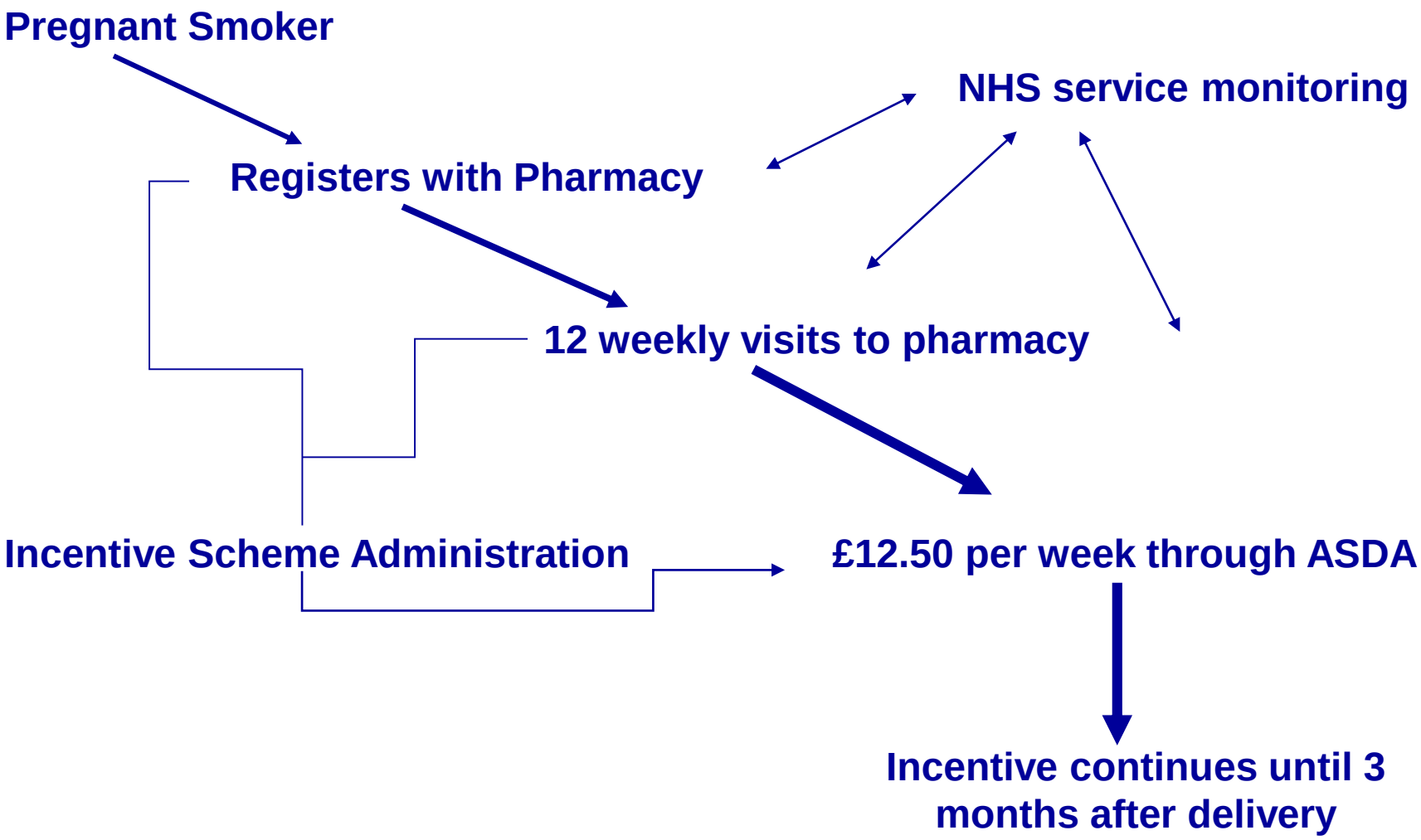
Rewards - Cochrane Review

Study	Treatment	Control	Relative Risk (Random) 95% CI	Weight (%)	Relative Risk (Random) %CI
Donatelle	78/112	99/108		1.4	0.76 [0.66, 0.87]
Sexton	296/463	393/472		2.6	0.77 [0.71, 0.83]



The Cochrane Collaboration

Systems and Information Flows



Numbers and Average Percentage of Women Smoking in Pregnancy 2008-2010

	Number (2008-2010)	Tayside (%)	Scotland (%)
SIMD 1	1,210	39.8	31.4
SIMD 2	779	25.6	23.1
SIMD 3	441	14.5	16.4
SIMD 4	449	14.7	11.1
SIMD 5	161	5.3	6.6
Unknown			11.9

Source: Tobacco Profiles 2012
www.Scotpho.nhsnss.scot.nhs.u

Baseline GIUFB participant characteristics
(registered March 2007-December 2009)

Age (years)	Number	Percent (%)
< 20	55	14.0
20-25	110	28.0
25-30	101	25.7
30-40	117	29.8
> 40	10	2.5

N=393

Baseline GIUFB participant characteristics
(registered March 2007-December 2009)

"How long before your first cigarette in a morning?"

	Number	Percent (%)
5 minutes	126	32.1
6-30 minutes	96	24.4
31-60 minutes	50	12.7
> 1 hour	51	13.0
Missing	70	17.0

n = 393

GIUFB Outcomes: Quit Rates

(%)	Tayside	Dundee	Perth& Kinross	Angus	P<0.05
Number	393	160	144	89	
4 weeks	211 (53.7)	76 (47.5)	86 (59.7)	49 (55.1)	D v P 0.033
12 weeks	125 (31.8)	46 (28.8)	52 (36.1)	27 (30.3)	
12 weeks postpartum	65 (16.5)	25 (15.6)	31 (21.5)	9 (10.1)	P v A 0.025

GIUFB Outcomes: 4 Week Quit Rates

SIMD	Cohort	Number	Percent (%)
1	142	66	46.5
2	115	64	55.7
3	61	35	57.4
4	41	28	68.3
5	23	12	52.2
Paid Employment			
Yes	176	105	59.7
No	149	72	48.3
Missing	68	34	50.0

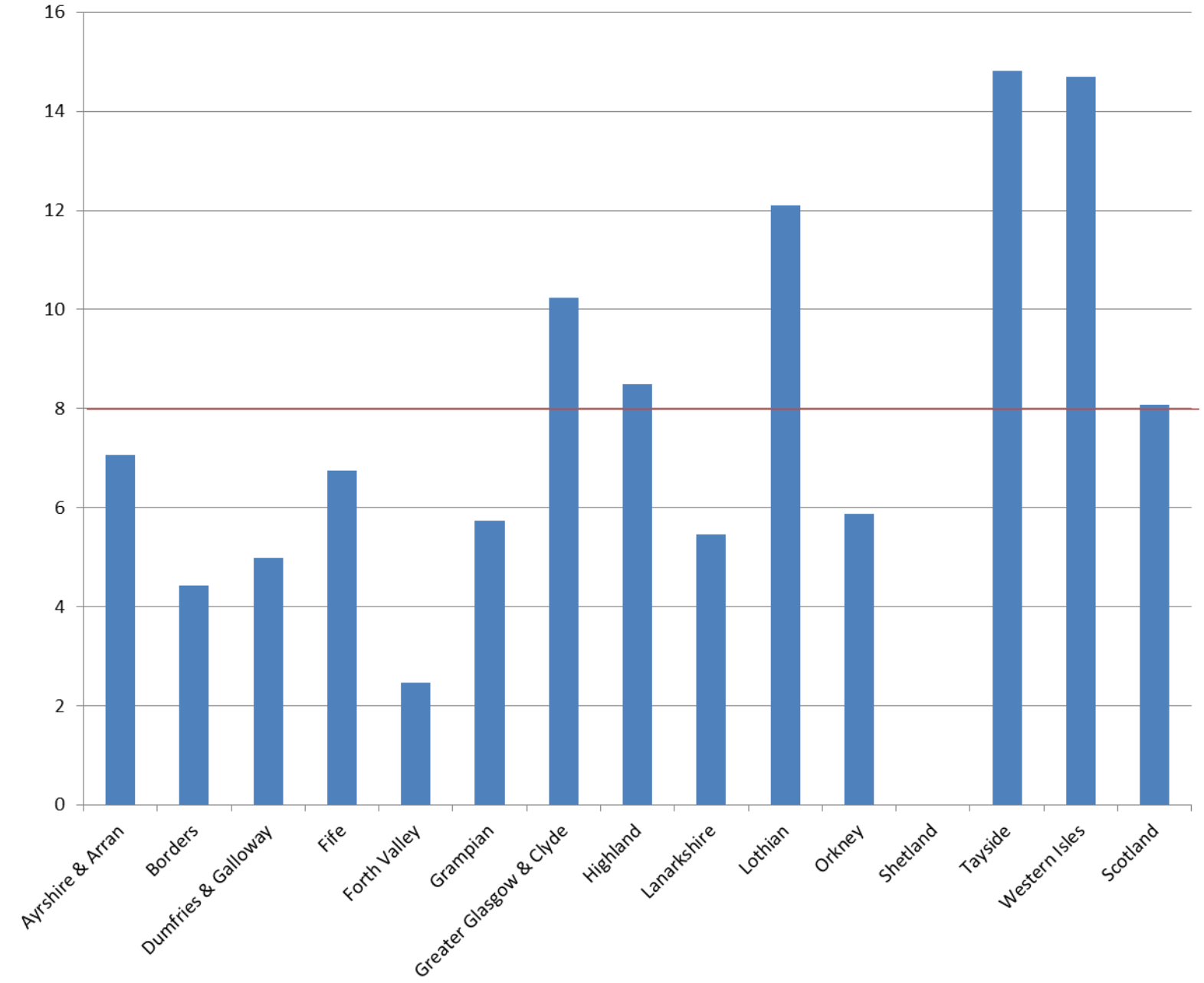
GIUFB Outcomes: ITT Analysis 2009

(%)	Births	Smokers 1st Booking	Quits	4 Week Quits	12 Week Quits	12 Week Post Partum
Tayside	4,283	1,061 (24.8)	213 (20.1)	83 (7.8)	55 (5.1)	42 (4.0)
Dundee	1,754	493 (28.1)	65 (13.2)	25 (5.5)	15 (3.0)	11 (2.2)
Perth& Kinross	1,361	269 (19.8)	74 (27.5)	33 (12.3)	25 (9.3)	21 (7.8)
Angus	1,168	299 (24.8)	71 (23.7)	20 (6.7)	14 (4.7)	10 (3.3)

GIVE IT UP FOR BABY: Outcomes 2011

	Number	Reach ITT (%)
Number of pregnant women smoking at first booking	942	
Number of quit attempts made	370	39
Number of quit attempts reaching 4 weeks	146	15
Number of quit attempts reaching 3 months	91	10
Number of quit attempts successful at delivery	68	7
Number of quit attempts successful at 3 months post delivery	54	6

Smoking in Pregnancy 2011 - 4 Week Quits



GIVE IT UP FOR BABY: Outcomes 2015

	P&K	Angus	Dundee	Total	%
Reached 4 weeks	357	175	253	785	**54**
Reached 12 weeks	235	108	154	497	**34**
3 Month Post Partum	113	45	76	234	**16**
	705	328	483	1516	

GIVE IT UP FOR BABY:
a priori characteristics of Completers

Variable	Parameters	Pearson's χ^2 (2-sided)
Locality	Angus, Dundee, Perth	>0.001
Age Group (years)	<20, 20-30, >30	0.345
SIMD	1-2, 3, 4-5	0.438
Employment Status	Employed/ unemployed	0.005
Number of Quit Attempts	0, 1, 2+	0.132
Cigarettes per day	<10, 11-20, >20	0.04
Time after waking	Within 30 mins / after 30 mins	0.01

n=988

Reflections

Main considerations?
Aimed to reduce as many barriers to participation.
Facilitated via pharmacies

What constitutes a positive result?
Turning up and engaging with intervention

Unintended negative consequences?
may exacerbate sense of failure and resultant stigma associated with relapse…and increase reluctance to re-engage with services (Allan 2012)
Breadline survivors' (socially and financially disadvantaged mothers) more likely to have conflict with pharmacists and contest results (Radley 2013)
potential impact on client-provider relationship

Challenges

1. Increase engagement with women in Dundee and Angus
2. Increased engagement with midwives in Dundee and Angus
3. Look at utilising social networks as a level of public health intervention.
4. Improvement science!

Summary

- Demonstrates the inverse care law?
- Demonstrates social gradients in health
- Widens the health inequalities gap?
- Advantages groups with greater self efficacy?

fuse The Centre for Translational Research in Public Health

The acceptability of using financial incentives to encourage uptake of healthy behaviours: results from focus groups with the UK public

Dr Emma L Giles, Dr Jean Adams, Prof Elaine McColl, Prof Falko Sniehotta, Shannon Robalino

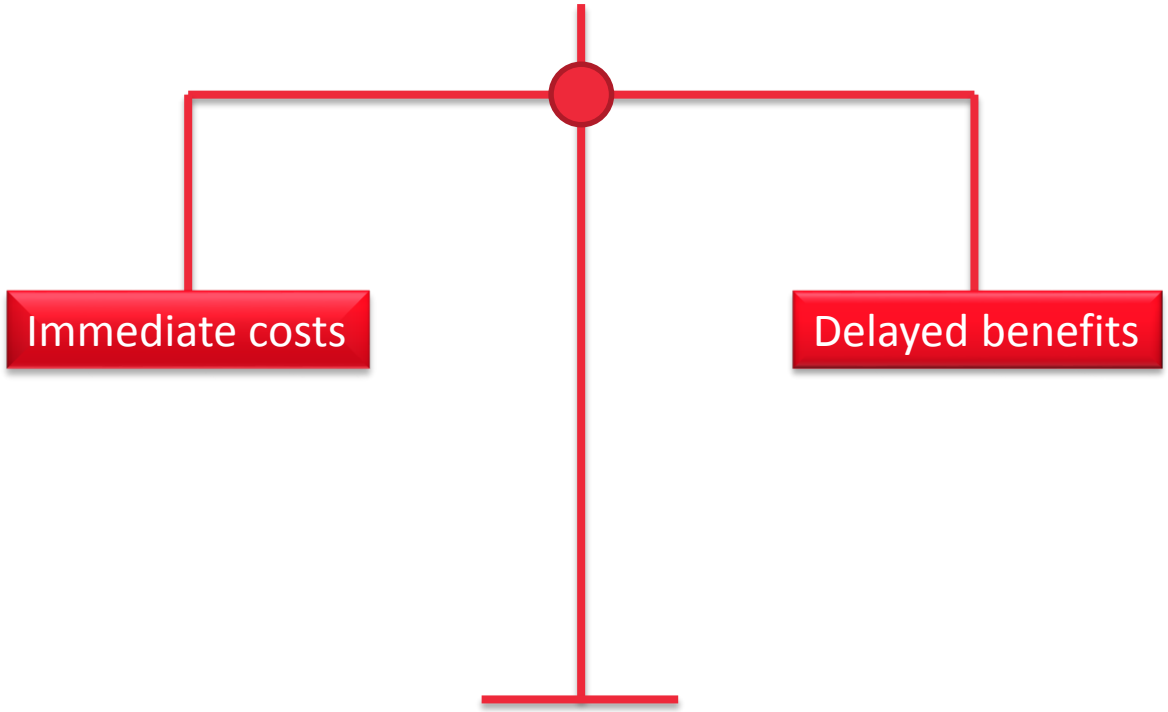
e.giles@tees.ac.uk

Healthy behaviours

- Not smoking
- 30 mins of exercise most days of the week
- Drinking moderately
- Eating 5-a-day
- Using sunscreen
- Attending for screening
- Attending for vaccination

Why don’t people do healthy behaviours?

- Environmental constraints
- Social norms
- Socio-demographics
- Time perspective



What's already 'known' about financial incentives for healthy behaviours?

- Work better for simple one-off behaviours than complex sustained behaviour change
  - e.g. Jochelson (2007) King's Fund
- Effects diminish quickly after incentives are withdrawn
  - e.g. Oliver et al (2009) J Health Services Res & Policy
- They are controversial
  - e.g. Cookson & Popay (2008) BMJ
- Evidence of effectiveness for smoking cessation & vaccination and screening (systematic review)
  - E.g. Giles et al (2014) Plos One

HPFI are effective, but are they acceptable?

Research Questions:

- What aspects of financial incentives for healthy behaviours are acceptable & unacceptable?
- Acceptable to who?
  - Potential recipients
  - Professionals involved in delivery
  - Policy makers involved in implementation
  - General public involved in funding
- How should financial incentives be designed?

Data collection and analysis

- **Eight focus groups (n=86):**
  - 2 with ‘older affluent’
  - 2 with ‘older less affluent’
  - 2 with ‘younger affluent’
  - 2 with ‘younger less affluent’
  - Young defined as <60 years
  - Older defined as 60+ years
  - Affluent defined as ABC1 (ONS classification of home postcode-social grade)
  - Less affluent defined as [C1]C2DE

- **Thematic analysis:**
  - Close reading and generation of codes
  - Re-reading and checking of codes
  - Reflection and sorting of codes
  - Interpretation

Resulting themes

- The nature of fair exchange
- Design and delivery of incentive schemes
- Effectiveness and cost-effectiveness
- Recipients
- Impact on individuals and wider society

Theme 1: Fair exchange

"It's unfair to the healthy ones"

"…people being rewarded because you made a bad choice, and now you made a good choice, what's my reward for making the right choice"

"… you can always argue for all the people that have struggled with giving up smoking or struggled with weight loss and have managed to do that without the incentives…you could see it as a bit well like I've done it this way, why shouldn't everybody"

Theme 2: Design & delivery

“I agree that they need help but the help has to be done in a way that the incentive is not just about cash it’s also about them making a commitment to change their lives.”

“I do think that if there’s going to be a charge or some sort of penalty it’s gonna penalise people who are worse off, I’m not keen on that at all.”

Theme 3: Effectiveness & cost-effectiveness

"I would actually want to know if there is any research which has actually, good research which has actually proved evidence that any of these kind of initiatives work."

"To see the efficacy of it, because I take a more pragmatic view than some of the people here… that is all depends whether it works or not."

Theme 4: Recipients

“But I think there’s something about paying someone to stop drinking that I think’s quite, I don’t know what the right word is, it’s quite unsettling I think.”

“But you’ve got a runt of people who really no matter what you do for them, they’re always going to live badly and they’re always going to take what they can and, and give nothing back.”

Theme 5: Impact on individuals and wider society

"The fact that you've stopped smoking and you are not buying cigarettes should be a financial incentive to stop."

"It's a funny one, because with the best will in the world people want to do it. And that just reinforces failure and if you know, if you can't do it then you don't get your incentive you know that's a double failure isn't it."

Theme 6: Other issues

“I think it would need to be accompanied by some other support with it.”

“… a sense of belonging to a group or support is quite important.”

“And it comes back to the point that people have made about education and I just think at that point … is it better channelling that money into educating people and teaching people new types of habit?”

Summary of findings

- What aspects of financial incentives for healthy behaviours are acceptable & unacceptable?
  - Almost all aspects have been found to be both a source of acceptability and unacceptability
  - 6 themes
  - Effectiveness & monitoring seems important
- What methods have been used to determine acceptability?
  - Primarily surveys, little in-depth qualitative work
- Who has acceptability been explored in?
  - Primarily general public, little work with practitioners & policy makers…

Policymaker views

- May-July 2015 interviews with policymakers
- Framework analysis
- Aggregate results by December 2016
- Preliminary results: budgetary constraints, inequalities, media and public backlash, eligibility of participants, maintenance of behaviour change

Strengths & Weaknesses

- ✔ Data saturation reached (SR + Focus groups + online content)
- ✔ Issues of acceptability are not widely different for incentives vs. other health promotion strategies…possibly a ‘good’ approach to use

- ? Lack of a-priori framework for thematic analysis could be seen as a disadvantage
- ? Limited socio-demographic characteristics collected
- ? Unable to identify the ‘perfect’ incentive

Acknowledgements

NIHR Grant Number: CDF-2011-04-001

Research Team: Dr Jean Adams, Shannon Robalino, Prof. Elaine McColl, Prof. Falko Sniehotta

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Opinions expressed in this presentation do not necessarily represent those of the funders.

Quarterly Research Meeting – Summary Report

Payment for health behaviours: the case of health promoting financial incentives
Wednesday 22nd July 2015 – 10:00-13:00

Reg Vardy Building, Sunderland University

Introduction

This report summarises the keynote speaker's presentations and the concluding panel discussion session at the July Quarterly Research Meeting held on the topic of "Payment for health behaviours". This summary report is to be read in conjunction with the pdf slide sets used for the presentations, also on the Fuse website. The slides are cross-referenced in the summary account, below.

Designing Incentive Trials for Behaviour Change in Women around Childbirth: Pat Hoddinott, Chair in Primary Care, Nursing Midwifery and Allied Health Professions Research Unit at the University of Stirling.

Pat presented the results of the large, mixed methods BIBs (Benefits of Incentives for Breastfeeding and Smoking cessation in pregnancy) study. Following reviews by Morgan et al and Giles et al, identifying that financial incentives show promise, the BIBs study aimed to use the findings of a systematic review, assessing both the effectiveness of incentive literature and qualitative research on the barriers and facilitators of smoking cessation during breast feeding; qualitative interviews with a wide range of participants; and surveys to inform the development of a logic model for intervention design.

The patient journey maps created from the systematic review evidence highlighted topics to consider including the large number of contact visits. The metaphor of a ladder was used to translate the logic model into everyday use as most people could identify with the structure and could relate to idea of the rungs.

Key take-home messages from the presentation included:

- Wellbeing is a key driver of decision making
- Tailoring to local needs is important
- The reporting of interventions needs to be improved
- The ladder model has face validity- but appears to be more linear than the data suggests
- More fieldwork is required in this area.

Questions and comments from the floor included Peter Kelly the Director of Public Health at Stockton Borough Council asking about the cost-effectiveness of the intervention and financial incentives.

Pat talked about the challenges around a lack of reporting. They were unable to carry out an adequate cost effectiveness analysis due to lack of detail reported in studies.

Keith Allen, Public Health Registrar, posed a question around the cost of incentives and public acceptability. Pat identified that the value of incentives had been explored and £40 per month was deemed to be acceptable by 85% of the population who were asked.

Paul Williams, a General Practitioner from Stockton, wanted to know if there was a difference between the financial incentives provided- was a certain type preferred?

Pat was able to say that participants tended to prefer incentives, which gave them the autonomy to spend the incentives how they would like to; the 'Love to Shop' vouchers or cash were the preferred options. Pat said there is evidence showing that cash can often be unacceptable, but this was not supported in their study.

Paul also asked if it was an option to be paid via the Credit Union. Pat stated this could be an option and was currently being explored in an on-going pilot study in Glasgow.

Smoking during Pregnancy: David Tappin, Professor of Clinical Trials for Children, University of Glasgow

David talked us through his work around the CPIT (Cessation in Pregnancy Incentives Trial)- a Phase II trial consisting of 612 participants. 306 participants were assigned to a control group which consisted of normal care, whilst 306 participants were assigned to an incentives group where they could receive up to £400 if they quit smoking during their pregnancy.

Results showed that there was a 14% increase in quit rate and further analysis showed that there was a 150g increase in birth weight of babies born to mothers who quit smoking. Cost effectiveness data identified that the financial incentive model trialled is within the 'greater effect but greater cost' quadrant of the cost effectiveness plane.

Key take-home messages from the presentation included:

- Financial incentives were found to be acceptable and may double quit rate when used with existing smoking cessation services
- A multicentre phase III is required to further explore the use of financial incentives in practice.

Questions and comments from the floor included Prof Janet Shucksmith, Teesside University, asking is it clear that money makes a difference opposed to the increase in phone calls and additional support provided?

David agreed it was difficult to disentangle money from the extra support element.

Paul Kelly was interested in finding out if there was any research into continuing the use of incentives for smoking cessation following pregnancy. David was able to say he was not involved in any work in this area but would be an interesting area to explore in the future.

Scott Lloyd from Redcar and Cleveland Council asked if there were issues with the reactions of smokers in the control group in the trial, who were not receiving the financial incentives during their pregnancy to quit smoking.

David said they had not experienced issues- only three participants dropped out and many were interested in learning if the approach had been effective.

Other points raised were: was there a difference observed in age ranges and did this have an impact on the cost per QALY? David confirmed these had not been explored at this point in the research.

Financial Incentives for smoking Cessation in Pregnancy: How much more certain are we that they help? Andrew Radley, NHS Tayside

Andrew talked about operationalising the use of financial incentives in a smoking cessation programme within a community pharmacy setting. 393 women in Tayside engaged with the smoking cessation services. The incentives were found to be effective and it was also interesting to note that the mothers preferred receiving their incentives on a weekly basis.

Key take-home messages from the presentation included:

- Engagement with pharmacies was a key part to the success
- Financial incentives were deemed as more effective with differences in uptake being observed between least deprived and most deprived areas
- Ways in which to increase engagement will be an area to explore in the future- with social networks being a tool to investigate.

Questions and comments from the floor included Janet Shucksmith talking about the issue of individualising incentives and the lack of leadership. It was felt to be important to consider training options for midwives so they are not frightened to bring up smoking in fear of it changing their relationship with the pregnant mother.

Other questions considered whether employed individuals are more likely to engage with smoking cessation services and whether it would be possible to follow Tayside's lead in engaging with pharmacies.

Andrew was unsure from his work, but Pat talked about her experience with employed individuals who used to having a structured lifestyle and therefore would be more likely to attend structured appointments.

Andrew talked about the pharmacies he worked with being part of a network, in that they are all engaged and many of them previously delivered smoking cessation, so limited specialist training was required beyond training counter staff to deliver the incentives.

Acceptability of financial incentives in the UK population: Dr Emma L Giles, Senior Research Lecturer in Public Health, Teesside University

Emma presented qualitative data exploring the acceptability of incentives. The findings suggest that incentives are more likely to accepted if they are provided to certain population groups including pregnant women and those on a low income, but not for those who may have alcohol or drug problems. The 'perfect' incentive has yet to be identified, but it does need to be shown to be cost-effective for it to be accepted on a wider scale.

Questions and comments from the floor included Professor Dorothy Newbury- Birch, Teesside University, talking about the issue of 'deserving' and 'undeserving' poor and how would we go about labelling these? We also need to explore ways in which to engage with these groups.

Pat Hoddinott was interested in the preliminary results from interviews with policy makers and wondered if any policymakers were reluctant to engage.

Emma was able to say all engaged- bar one who was on holiday!

Jim Beall wanted to know if Health and Wellbeing boards were being approached for interviews, as Stockton would be keen to get involved. Emma will be following this up.

Panel Discussion

The four speakers were joined by: Peter Kelly, Jim Beall, a Local Politician and member of Stockton's Health and Wellbeing Board, Dr Jean Adams NIHR Research Fellow, UKCRC Centre for Diet and Activity Research, University of Cambridge.

Jim was asked what would the use of financial incentives mean to him?

His key point was around the timing. Due to the current background of austerity in the UK- would it be appropriate to introduce incentives when other benefits are being cut?

Other areas were explored such as:

- Is it appropriate to reward for bad behaviour?
- Are the basic services in place for delivering the incentives when services are being cut?
- Are cash payments the least likely to gain support from the public?
- Worry that incentives could be used as a penalty.

Jim was also keen to emphasise that Stockton's Health and Wellbeing board are always looking for fresh and new ways in which to address inequalities and thought this would be something to bring to the table.

Peter Kelly talked about the 'nudge theory' and how he was worried it will widen inequalities; although the idea of having a choice is great, not all individuals will have the tools in place to make

an informed choice. He was pleased to gain new knowledge around incentives at the Fuse QRM today, but would need to make a political case in order to implement incentives in practice.

The issue of targeting interventions was discussed with Jean Adams talking about interventions being more effective in more affluent areas. Andrew Radley is currently exploring a method to engage all of the community.

Pat Hoddinott talked about the great need for more research in the area, and also highlighted the need to lessen the responsibility on individuals to preventing shaming. The negative benefit culture remains a key issue.

Questions were asked around the moral implications of financial incentives, and whether it appears to be an issue in monitoring individuals.

Emma Giles was able to say it was deemed to be acceptable to the public in her research, and was not seen to be distrustful if participants were asked for monitoring samples, such as cotinine or CO_2 measurements in smoking cessation.

The need to explore which incentives worked in which communities also arose and it was thought to be very important to get a local perspective to facilitate effective use of resources. A controversial point arose around there being a limit to the use of financial incentives and the fact that young people now grow up in a culture of incentives. There was a danger that this might create a culture of monetisation for all health behaviours.

The final points raised were around looking at the wider perspective and the need to explore other interventions, particularly in relation to smoking cessation and pregnant women.

Claire Sullivan closed the session and informed the audience that the next Fuse QRM will be on the 20th October at Teesside University.