Smoking in pregnancy:

a randomised controlled trial to test whether financial incentives will help women to quit

‘QUIT-HELP’

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Why?

We know that CO from smoking displaces oxygen from the blood, thus the fetus is receiving less oxygen across the placenta.

Nicotine and other chemicals from cigarettes cross the placenta.

Prenatal smoking is significantly associated with:

Outcome	AOR (95% CI)
Very pre-term delivery	1.5 (1.4, 1.6)
Moderate pre-term delivery	1.4 (1.4, 1.4)
Late pre-term delivery	1.2 (1.2, 1.3)
Term low birthweight delivery	2.3 (2.3, 2.5)
Pre-term-related death	1.5 (1.4, 1.6)
Sudden infant death syndrome	2.7 (2.4, 3.0)

N=3,352,756 singleton live births, US Linked Birth/Infant Death Data Set 2002
Dietz et al., Am J Prev Med 2010: 39 (1) 45-52

Dietz *et al.* estimated that prenatal smoking was attributable to:

Outcome	
Pre-term delivery	5.3% to 7.7%
Term low birthweight delivery	13.1% to19.0%
Pre-term-related death	5.0% to 7.3%
Sudden infant death syndrome	23.2% to 33.6%

Dietz *et al.* cohort had 11.5% smoking rate

Australian rate for tobacco use in pregnancy 22/23: 7.8%

Dietz et al., Am J Prev Med 2010: 39 (1) 45-52
https://www.aihw.gov.au/reports/alcohol/pregnant-breastfeeding-women-alcohol-drugs

Why try cash incentives?

Systematic reviews of studies conducted in many countries suggest incentives improve quit rates in studies that that involve:

- a general population
- in disadvantaged settings or
- pregnant women.

Notley et al, *Coch Database Syst Rev* 2019
Cahill et al, . *Coch Database Syst Rev* 2015
Kock, et al *Lancet Public Health* 2019

Abstinence at the end of pregnancy was 3.8 times higher when incentives were offered (evidence from eight randomised controlled trials involving 1297 women),

And:

Incentives that are conditional on being abstinent outperform incentives that simply involve attending an appointment.

Notley et al, *Coch Database Syst Rev* 2019
Cahill et al, . *Coch Database Syst Rev* 2015

- Women who quit earlier in pregnancy have perinatal outcomes similar to non-smokers,
- it is important for women to engage with quitting services as early as possible
- and to remain abstinent throughout pregnancy
- a meta-analyses of studies that followed pregnant women up to two years postpartum, showed more than a two-fold increase in prolonged abstinence

Notley et al, *Coch Database Syst Rev* 2019
Cahill et al, . *Coch Database Syst Rev* 2015

Aims of QUIT-HELP study

Primary Aim

- The primary aim is to conduct a parallel, 2-arm randomised controlled trial to assess whether routine CO monitoring plus incentives (Intervention group) compared with routine CO monitoring (Control group) will help more pregnant women to stop smoking.

Aims of QUIT-HELP study

Secondary Aims

1. To conduct a cost effectiveness analysis of the intervention.

2. To qualitatively evaluate the use of financial incentives from the perspectives of the participants as well as health care providers.

Hypotheses of QUIT-HELP study

Primary Hypothesis

Sustained abstinence will be higher among women who are randomised to financial incentives plus CO monitoring (Intervention group) compared with CO monitoring alone (Control group).

Secondary Hypotheses 1

The prevalence of smoking at 37 weeks pregnancy will be lower among women who are randomised to financial incentives plus CO monitoring (Intervention group) compared with CO monitoring alone (Control group).

Secondary Hypotheses 2

The prevalence of smoking at 6 months postpartum will be lower among women who are randomised to financial incentives plus CO monitoring (Intervention group) compared with CO monitoring alone (Control group).

Study locations:

- Currently recruiting from Lyell McEwin and Modbury Hospitals
- Contemplating opening at WCH, possibly followed by other locations

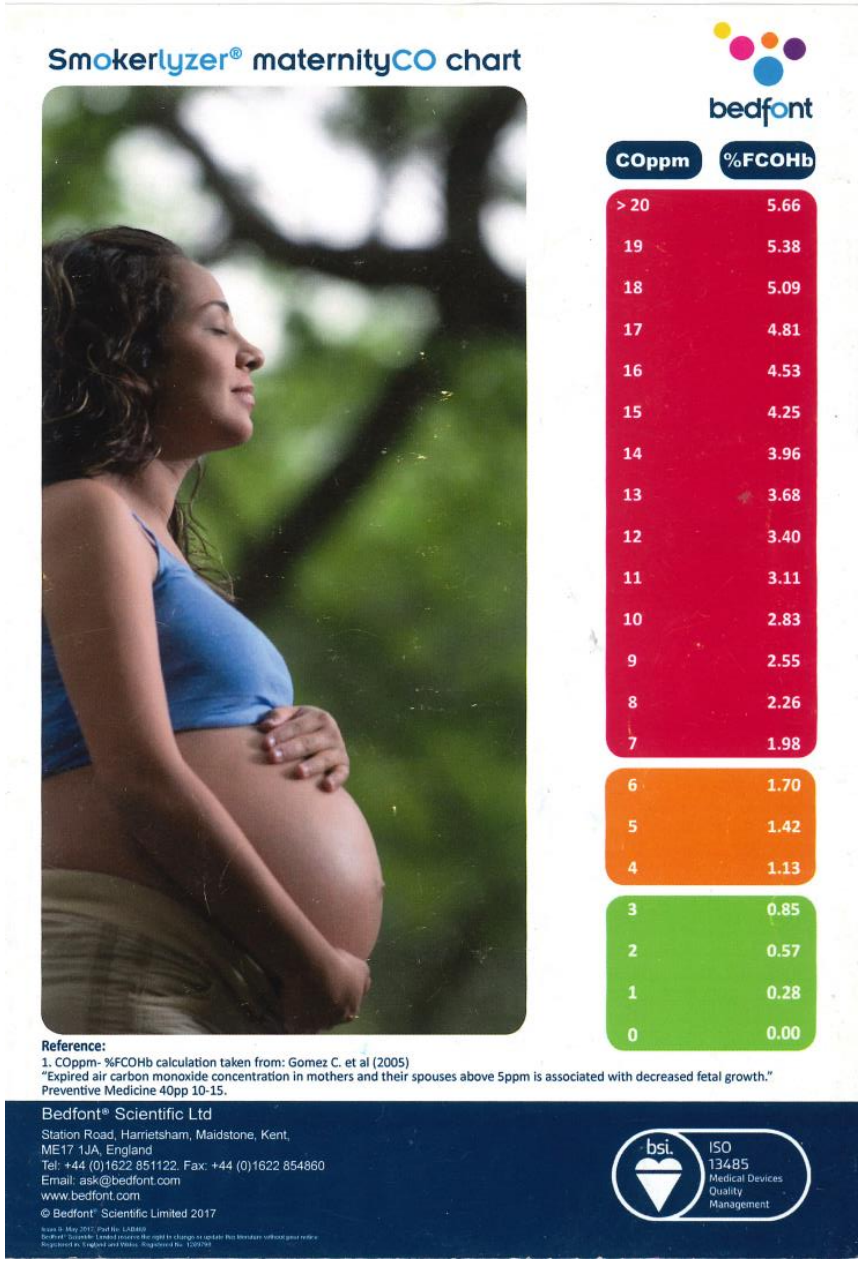
Who is eligible?

- Women who currently smoke
- <20/40 gestational age
- Willing to give informed consent
- Planned birth at LMHS

QUIT-HELP Study entry

Control	Intervention


piCObaby
piCObaby
Smokerlyzer®
Vers 2.0.1


Smokerlyzer® maternityCO chart
bedfont
COppm
%FCOHb
> 20 5.66
19 5.38
18 5.09
17 4.81
16 4.53
15 4.25
14 3.96
13 3.68
12 3.40
11 3.11
10 2.83
9 2.55
8 2.26
7 1.98
6 1.70
5 1.42
4 1.13
3 0.85
2 0.57
1 0.28
0 0.00
Reference:
1. COppm- %FCOHb calculation taken from: Gomez C. et al (2005)
"Expired air carbon monoxide concentration in mothers and their spouses above 5ppm is associated with decreased fetal growth."
Preventive Medicine 40pp 10-15.
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Medical Devices
Quality
Management


2 weeks after quit day
10 mins
2 weeks after quit day
10 mins
= $50
= 0
12 weeks after quit day
10 mins
12 weeks after quit day
10 mins
= $150
= 0
37 weeks
30 mins
$50
37 weeks
30 mins
= $400
= $50
6 months after birth
10 mins
$50
6 months after birth
10 mins
$50

Those in the control group will be paid **$100** for full participation.

Those in the intervention group receive up to **$650**, depending on when they quit and if they remain non-smoking for the duration of the study

Non-judgemental

Supportive

Want to give away money! ☺

What can you do?

- Be aware of the study as an option for pregnant smokers attempting to quit.
- Invite any pregnant smoker, <20/40, to scan the QR code for the study team to contact them.

Also,

- Health professional's opinion of intervention
- Invitations will go up in a month or two to invite to focus group or one-on-one interviews.

Current PPG 'Substance use in pregnancy' states:

"The woman's general practitioner should support NRT after two or more weeks of the woman trying to quit without success".

"intermittent-use formulations (gum, lozenge, inhaler, sublingual tablet) are preferred for use during pregnancy"

New PPGs for smoking and vaping in pregnancy due for release in August this year.

Please see me at lunch time:

- For posters, cards with QR codes
- Register your interest in knowing if/when the study is open at a hospital near you
- Check out the CO monitor

Thank you