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Evaluation of the NENC ICS Tobacco Dependency in Pregnancy Financial Incentives Scheme

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Executive Summary

Evaluation of the North East and North Cumbria ICS Tobacco Dependency in Pregnancy Financial Incentives Scheme

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In November 2022, North East & North Cumbria (NENC) Integrated Care System (ICS) commissioned a Tobacco Dependency in Pregnancy (TDiP) Financial Incentive (FI) scheme aiming to help pregnant women and people stop smoking in order to give their baby the best start in life. Through qualitative and quantitative approaches, this report aims to evaluate the implementation of the scheme from inception until the end of February 2024). Prior to the implementation of the NENC ICS FI scheme, around 13.1% (3492) of women were smoking at delivery.

Early results indicate:

• There is significant support for any effective action to give babies the best start in life.

• Staff value the scheme because it enables them to offer pregnant women something positive leading to more successful outcomes.

• It has helped to improve awareness of the importance of quitting smoking whilst pregnant and enabled more women to take the first step towards quitting.

• 1620 out of 1687 pregnant women set a quit date as part of the scheme (96%).

• Pregnancy Quit outcomes reported via the NENC Tobacco Dependency in Pregnancy Incentives Scheme demonstrates a CO-verified quit rate of 39.6% at 4 weeks and an additional 5.1% of self-reported quits.

• Of those who were quit at 4 weeks and were eligible for follow up at 4 weeks postnatal, 42.4% were co verified as quit.

• For comparison pre-pandemic and pre-voucher scheme, the North East Stop Smoking Services CO verified quit rate for pregnant people (based on 1223 setting a quit date in April 2019 – March 2020), were reported as 15%, and 30% for self-reported quits[1].

The scheme might benefit from:

- Streamlined voucher issuing.
- Improved data recording and reporting through maternity record system Badgernet.
- Capturing the significant administration and leadership elements of an ICS wide scheme.

[1] NHS Digital (2024) Statistics on NHS Stop Smoking Services, available at: Statistics on NHS Stop Smoking Services in England April 2019 to March 2020 - NHS England Digital (accessed 25/05/2024)

- Robust local equity and quality audits for the scheme and underlying NENC TDiP pathway[2].
- Additional engagement with pregnant people and their partners/significant others should be undertaken to understand how best to engage partners/significant in quit attempts.

After full implementation of the NENC ICS FI scheme, 10.0% (2584) of women were smoking at delivery (NHS Digital, 2023/24). It is noted that the incentive implementation occurred at the same time when requirements of the NHS Long Term Plan (2019) needed to be fully implemented.

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[2] NENC ICS PHPiM Programme, (2023), Tobacco Dependency in Pregnancy and the Postnatal Period Pathway v4, available at: PowerPoint Presentation (northeastnorthcumbria.nhs.uk)

Evaluation of the North East and North Cumbria ICS Tobacco Dependency in Pregnancy Financial Incentives Scheme

Becca Scott, Caitlin Robinson

Produced on behalf of the NENC Smokefree NHS / Treating Tobacco Dependency Taskforce & NENC Public Health Prevention in Maternity Programme

1. Purpose of the Report

The North East and North Cumbria (NENC) Integrated Care System (ICS) introduced a Financial Incentive (FI) scheme to support pregnant people to stop smoking and complement the implementation of the Long Term Plan pathway for the pregnancy and post-natal period in November 2022. This report details the evaluation findings during implementation. The aims of the evaluation were to:

i. understand the uptake and outcomes of the FI scheme.
ii. understand the experiences of participants in the FI scheme including both NHS maternity staff and service users (pregnant people).

2. Background

2.1 NENC Background

Prior to the implementation of the NENC ICS FI scheme, around 13.1% (3492) of women were smoking at delivery.

Smoking is the leading cause of modifiable risk factors for poor birth outcomes including low birth weight (250g lighter), miscarriage (up to 3 times as likely), preterm birth (up to 27% more likely) and stillbirth (twice the likelihood). It also triples the risk of sudden infant death. Maternal smoking costs the NHS in the North East & North Cumbria approximately £10.7 million each year in secondary care costs, arising from low birthweight, premature rupture of membranes, ectopic pregnancy, miscarriage and placenta previa. In addition, in the UK exposure of children to tobacco smoke costs the NHS between £5million and £12million, in hospital costs per year. Children exposed to tobacco smoke in the uterus are more likely to experience life threatening wheezy illness and psychological problems in childhood such as attention deficit disorders and hyperactivity. The consequent impact on schools, health and public health services is significant ([3]).

The NHS Long Term Plan, in line with Saving Babies Lives Care Bundle v3, aims to systematically screen all pregnant people and provide Opt-Out, behavioural support and treatment for Tobacco Dependency within Maternity Services.

2.2 Background of Incentive Scheme for Pregnant Smokers

Financial incentive schemes have been shown to improve cessation and support the delivery of smokefree pregnancies. Several studies of financial incentives for smoking cessation in pregnancy have concluded

[3] Royal College of Physicians, (2018), *Hiding in plain sight: Treating tobacco dependency in the NHS | RCP London* (accessed 19/05/2024)

that incentives in pregnancy are effective[4,5]. The latest Cochrane Review[6] of evidence on use of financial incentives for smoking cessation concluded incentives increased rates of quitting for six months or longer by approximately 50% compared to no incentives. National Institute for Care and Excellence (NICE) states that financial incentives should be used at least until the end of pregnancy, and that incentives totalling around £400 have been shown to be effective in supporting cessation. NICE also recommends the inclusion of a family or friend to support the pregnant person[7]

2.3 Budget

Funded by the NENC ICS Healthier & Fairer programme, utilising £176,000 NECS Transformation funds, the NENC tobacco dependency in pregnancy (TDiP) Incentive scheme was launched across all 8 NENC maternity Services between November 2022 and July 2023. The cost of vouchers during this period was £116,000.

2.4 NENC Incentives Scheme Model

The scheme includes an option to give additional support to maintaining quit status to the postpartum period structured around:

Quasi-financial incentives in the form of "Love to Shop" vouchers for pregnant people;

- First quit appointment and quit date set: £20
- Successful 4-week quit and every subsequent 6 weeks onwards until delivery (max 6 vouchers): £40
- Successful 4 weeks postnatal quit £80
- Successful quit for partners/significant others at 4 weeks postnatal £40
- Up to £380 per scheme

Pregnant people are able to re-join the scheme only once after a failed quit attempt during the same pregnancy. Regular support will be available from Maternity Tobacco Dependency Advisors (as per maternity pathway). There is the option to identify and recruit a partner or significant other who will also be entitled to receive one voucher on the completion of support. Participants and their families will be provided regular encouragement and advise to make their home smoke free.

3. NENC Approach to TDiP Incentives Scheme Evaluation

The evaluation recruited participants from 7 maternity units across NENC. One Foundation Trust was excluded due to delay in their implementation which started around the same time of the evaluation .

The evaluation is made up of 3 main elements:

- **Element 1:** Monthly anonymised patient level data submission from each Trust, comprising of demographic information, quit date, quit outcome and compliance with incentives scheme. This allows monitoring of uptake and outcomes from the incentives scheme evaluation.

[4] Tappin, 2022, Effect of financial voucher incentives provided with UK stop smoking services on the cessation of smoking in pregnant women (CPIT III): pragmatic, multicentre, single blinded, phase 3, randomised controlled trial, BMJ
[5] Hoddinott et al (2014), Public acceptability of financial incentives for smoking cessation in pregnancy and breast feeding: a survey of the British public, BMJ
[6] Notley et al (2019), Incentives for Smoking Cessation, Cochrane Library
[7] NICE (2021), Tobacco: preventing uptake, promoting quitting and treating dependence, 2021

- **Element 2:** Service user (pregnant person) survey modelled on the Theoretical Framework of Acceptability with additional open ended questions. Participants were recruited by maternity staff during routine contacts throughout pregnancy.
- **Element 3:** NHS maternity staff survey modelled on the Theoretical Framework of Acceptability with additional open ended questions. Participants were recruited via email, through service managers, and within peer support networks.

3.1 Element 1: Monthly Data Submissions

Throughout the incentives scheme implementation, Trusts were required to submit an excel spreadsheet data return detailing uptake to the scheme, demographic data of participants and quit outcomes at varying time points throughout pregnancy. The data reported in this evaluation report is from November 2022 to February 2024. This includes the initial setup period where scheme usage was lower due to staff confidence, internal communications and the staged onboarding of the seven services (NHCT, NTH NHS, GHFT - December 2022; South Tees, Newcastle FT - Feb 2023; CDDFT, NCIC – March 2023).

The total number of people enrolled in the financial incentives scheme was 1924 of which 1687 were pregnant and 236 were partners/significant others of the pregnant people.

Participants

Table 1: Participant Demographics: Incentives Scheme Quantitative Data

Variable	Frequency	Percentage
Ethnicity		
White	1832	95.2%
Mixed	16	0.8%
Asian	7	0.4%
Black	3	0.2%
Other Ethnic Groups	17	0.9%
Unknown	49	2.5%
IMD		
1	663	34.5%
2	389	20.2%
3	231	12.0%
4	167	8.7%
5	76	4%
6	50	2.6%
7	50	2.6%
8	27	1.4%
9	31	1.6%
10	7	0.4%
Unknown	233	12.1%

Chart 1: number of participants attributed to each IMD

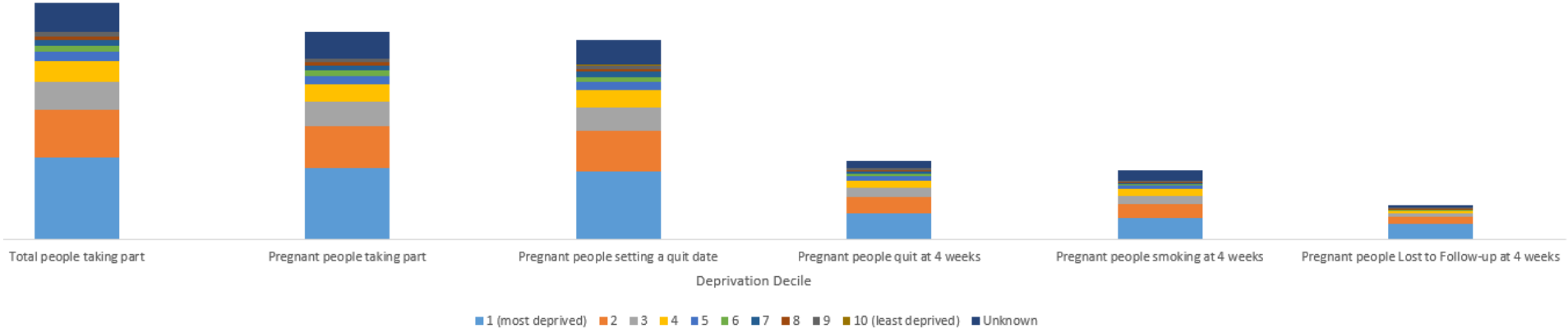
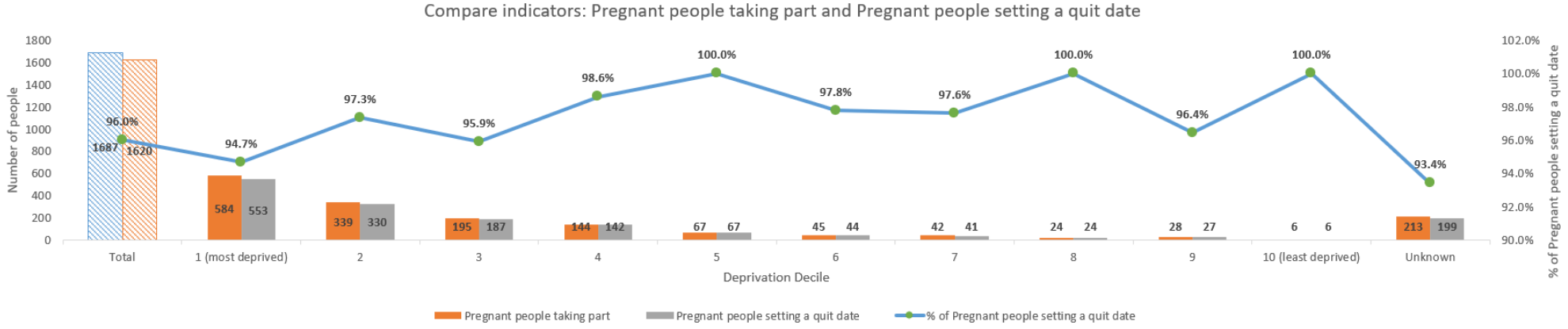


Chart 2: Pregnant participants taking part and those setting a quit by IMD



3.2 Element 2: Service User Survey

Out of the 132 total respondents to the Pregnant Person survey 89 (N=89/67%) had most frequently been a part of the scheme for over 8 weeks at the time of completing the survey. However, some had also been a part of the scheme for 5-8 weeks (16) or less than 4 weeks (27). Most respondents (N = 127) completed

the survey during their first enrolment in the incentives scheme. Only 5 pregnant people were completing the incentives scheme for a second time, all of whom reported to be smoking at the time of the survey completion. 7 pregnant participants required help to complete the survey of which 5 were on their second attempt of the scheme.

Table 2. Service user Participant Demographics: Maternity Staff Survey

Variable	Frequency	Percentage
Trust		
County Durham and Darlington NHS FT	6	4.5%
Gateshead Health NHS FT	3	2.3%
North Cumbria Integrated Care NHS FT	3	2.3%
North Tees and Hartlepool NHS FT	35	26.5%
Northumbria Healthcare NHS FT	51	38.6%
South Tees NHS FT	19	14.4%
The Newcastle Upon Tyne Hospitals NHS FT	15	11.4%
Gestation at time of survey completion		
Less than 12 weeks	15	11.4%
12-28 weeks	62	47.0%
29-40 weeks	31	23.5%
Already delivered baby	24	18.2%
Age		
Under 20	8	6.1%
20-24	26	19.7%
25-29	49	37.1%
30-34	33	25.0%
35 and over	16	12.1%
Ethnicity		
White	131	99.2%
Other	1	0.8%
Highest level of education		
None	27	20.5%
Unknown	1	0.8%
GCSEs or equivalent (e.g. level 1 diploma or NVQ level 1/2)	58	43.9%
A-Levels / AS-Levels or equivalent (e.g. level 2 diploma or NVQ level 3)	23	17.4%
Degree or equivalent (e.g. diploma in higher education or NVQ level 4)	23	17.4%
Employment Status		
Employed	71	53.8%
Unemployed	61	46.2%
Current Smoking Status		
Current smoker (cigarettes)	17	12.9%
Current smoker (cigarettes) and current vaper	20	15.2%
Non-smoker, current vaper	52	39.4%
Not smoking	43	32.6%
Help required to complete survey		

Variable	Frequency	Percentage
No, survey completed alone	111	84.1%
Helped by family member/friend	5	3.8%
Helped by maternity team	16	12.1%
Amount of times taking part in incentives scheme		
First Time	127	96.2%
Second Time	5	3.8%

3.3 Element 3: Maternity Staff Survey

There were 15 responses to the staff survey which were from Maternity Support Workers (inc Tobacco Dependency Advisors) (N=14) and Midwifery Manager (N=1).

Table 3: Staff Participant Demographics: Incentives Scheme Quantitative Data

Variable	Frequency	Percentage
Trust		
County Durham and Darlington NHS FT	2	13.3%
Gateshead Health NHS FT	2	13.3%
North Cumbria Integrated Care NHS FT	1	6.7%
North Tees and Hartlepool NHS FT	3	20.0%
Northumbria Healthcare NHS FT	4	26.7%
South Tees NHS FT	2	13.3%
The Newcastle Upon Tyne Hospitals NHS FT	1	6.7%
Job Role		
Maternity Support Workers (inc. Tobacco Dependency Advisors & Best Start in Life Advisors)	14	93.3%
Midwifery Manager	1	6.7%

4. Findings: Outcomes

Element 1: Engagement With, and Outcomes of Scheme

Table 4: Quantitative Pregnant Quit Outcomes

Pregnant People Taking Part	Setting a Quit Date	Quit at 4 weeks (CO Verified)	Quit 4 week Self-reported (not CO verified)	Not Quit 4 week	Lost to Follow Up at 4 weeks	Awaiting Follow-Up at 4 weeks	Total CO verified quits at most recent status (delivery and 4 week postnatal)
1687	1620 (96%)	641 (39.6%)	82 (5.1%)	576 (35.6%)	274 (16.9%)	78 (4.8%)	538 (42.4%)

NB: 'Not quit' includes smoking and those who re-enter the scheme after not engaging at the 4-week point.

4.1 Pregnancy Quit Outcomes

Pregnancy Quit outcomes reported via the NENC Tobacco Dependency in Pregnancy Incentives Scheme demonstrates a CO-verified quit rate of 39.6%. There was an additional 5.1% of self-reported quits at 4 weeks. This is likely due to being unable to retrieve a CO reading from the pregnant person, and therefore

they could not be included in the overall quit rate for the incentives scheme which otherwise would have been 44.7% total quit of which 88.7% were CO verified at 4 weeks.

For comparison, the North East Stop Smoking Services CO verified quit rate for pregnant people (based on 1306 setting a quit date in April 2021 – March 2022) was 1%, and 42% for self-reported quits[8]. Pre-pandemic CO verified quit rate for pregnant people (based on 1223 setting a quit date in April 2019 – March 2020), were reported as 15%, and 30% for self-reported quits[9].

NENC incentives scheme required that to be included in a 4-week quit and receive the associated voucher, all pregnant people must have a CO reading of ≤3ppm. This ensured the validity of data by ensuring that the smoking status of pregnant people is verified by CO reading throughout their pregnancy.

The Saving Babies Lives: Version 3[10], sets out that Trusts should aim to have 60% of all pregnant people setting a quit date, and to achieve a 60% quit rate in all pregnant people who set a quit date. The incentives scheme provides a means to increase the number of quit dates set, and also increase motivation and engagement with specialist support to potentially improve quit outcomes.

4.2 Quit outcomes by Incidence of Multiple Deprivation: comparison of 20% most deprived v 20% most affluent pregnant participants.

Over 54% of the pregnant women were from the 20% most deprived (IMD groups 1&2) compared to around 2% of the 20% most affluent group (IMD 9&10). Reviewing pregnant participants' engagement and outcomes from IMD 1&2 and IMD 9&10, found that a similar percentage of persons setting a quit rate was reflected in both groups. However, there was a higher rate of being quit (CO Verified) at 4 weeks in IMD 9&10 affluent group (45.4%) as opposed to the IMD 1&2 deprived group (38.5%). A full table of engagement and outcomes by IMD can be found in Appendix 1.

Table 5. Quit outcomes for pregnant participants by Incidence of Multiple Deprivation: 20% most deprived v 20% most affluent.

Indicator name	*IMD 1 & 2*	*IMD 9 & 10*
Pregnant People Taking Part	923	34
Quit date Set	883 (96%)	33 (97%)
Co validated quit at 4-weeks	340 (38.5%)	15 (45.4%)
Not quit at 4-weeks	286 (32.3%)	10 (30%)
Lost to follow up	182 (20.6%)	8 (24.2%)

4.2 Partner Quit Outcomes

9.3% of partners on the FI scheme were co verified quit based on number eligible for postnatal follow up, the majority at 70.8%, were lost to follow up.

[8] NHS Digital (2024) Statistics on NHS Stop Smoking Services, available at: Statistics on NHS Stop Smoking Services in England April 2021 to March 2022 - Data tables - NHS England Digital (accessed 15/05/2024)
[9] NHS Digital (2024) Statistics on NHS Stop Smoking Services, available at: Statistics on NHS Stop Smoking Services in England April 2019 to March 2020 - NHS England Digital (accessed 25/05/2024)
[10] NHS England (2023), NHS England » Saving babies' lives: version 3

5. Findings: Acceptability

5.1 Element 2: Service User Survey – Acceptability

Results from the service user survey indicate that the NENC TDiP Incentives Scheme is acceptable to service users, with a mean of 4.17 where 1 represents low acceptability and 5 represents high acceptability.

Acceptability was highest in relation to intervention coherence (Mean = 4.4), which refers to the extent in which the participant understands the intervention and how it works; self-efficacy (Mean = 4.3) which refers to the participant's confidence in which they can perform the behaviours required to participate in the intervention, and opportunity costs (Mean = 4.3) which refers to the extent which benefits, profits or values must be given up to engage in the intervention.

The lowest acceptable construct was in relation to affective attitude which refers to how an individual feels about the intervention. The mean for this construct was 3.9, which averages between 'no opinion' and 'comfortable'.

This would imply that service users generally have good understanding of the incentives scheme and their ability to engage with it, and there is low cost to the service user in engaging with the incentives scheme.

Table 6. Acceptability (pregnant person survey)

Constructs of acceptability	**Mean** (Standard Deviation)
Affective attitude	**3.9** (1.45)
Burden	**4.0** (1.07)*
Ethicality	**4.2** (1.03)
Intervention coherence	**4.4** (0.95)
Opportunity costs	**4.3** (1.09)*
Perceived effectiveness	**4.1** (0.99)
Self-efficacy	**4.3** (0.94)
	5 = high acceptability / 1 = low acceptability *indicates reverse scored which has been corrected

5.2 Element 3: Staff Survey – Acceptability

Survey results indicate that maternity staff participants had generally high acceptability of delivering the incentives scheme, with a mean of 4.01, where 1 represents low acceptability and 5 represents high acceptability.

Acceptability was highest in relation to affective attitude (Mean = 4.4) – how an individual feels about an intervention – and intervention coherence (Mean = 4.4) – the extent to which the participant understands how the intervention works.

Acceptability was lowest in relation to burden – the perceived amount of effort that is required to deliver the intervention. The mean for this construct was 3.4 which averages between 'no opinion' and 'a lot of effort'.

Table 7. Acceptability (maternity staff survey)

Constructs of acceptability	**Mean** (Standard Deviation)
Affective attitude	**4.4** (0.95)
Burden	**3.4** (1.14)*
Ethicality	**4.3** (0.68)*
Intervention coherence	**4.4** (1.02)
Opportunity costs	**3.5** (1.36)*
Perceived effectiveness	**3.6** (1.40)
Self-efficacy	**4.5** (0.62)
	5 = high acceptability / 1 = low acceptability *indicates reverse scored which has been corrected

6. Findings: Key Themes

6.1 Element 2: Service User Experience

As well as the questions relating to acceptability, the service user survey also asked three key questions relating to their experience in accessing the scheme. The questions included asking what service users liked about the scheme, if there was anything that could make the incentives scheme easier to be a part of, and if there was anything that stopped them from taking part in the scheme. The open-ended responses to these questions have been coded and themed into three key elements; **Support Available**, **Vouchers, Motivation & Self-Efficacy**, and **Accessibility**.

Support Available

Many participants referenced the support available to them as a positive factor affecting their experience of taking part in the incentives scheme, making this the strongest theme to come out of the service user survey.

"The nurse was friendly helpful and very informative and kept giving me the emotional boost I needed when I felt weak and helped me to stick to other nicotine replacement methods rather than going back to smoking."

"Very helpful friendly and kind also extremely supportive"

"The advisors were lovely and really supportive"

"She was brilliant and I couldn't have cut back on cigarettes without the support I'm now I only have a cigarette if stressed"

"No judgement was made. Good advice was given. Didn't feel like an appointment felt like a little catch up."

"I have been able to get to know my stop smoking midwife assistant who has given me an incentive to quit. She is very easy to get along with and friendly. Always on time"

There was one response relating to support which referred to a factor preventing a service user from taking part in the scheme. This factor was having another smoker in the home.

Vouchers

Several responses from participants referenced the vouchers (incentives) within their responses. Many participants referenced the vouchers positively, sharing how they were rewarding and beneficial to spend on items for their baby.

"I have saved the vouchers up to spend on baby items"

"The rewards are a great bonus and certainly helped to keep my head focused alongside my baby during stressful times."

"Not only do you have support when quitting, but the vouchers really help. It's a nice reward for quitting"

"I could save my vouchers up to buy something big for when baby comes"

Whilst most participants referencing the vouchers did so positively, some participants did identify that vouchers could be delayed or difficult to access, highlighting that it could have made it easier to engage with the scheme if this was improved.

"Difficult getting vouchers from system"

"Vouchers sometimes delayed"

"Sometimes vouchers took a while to get"

Motivation and Self-Efficacy

Service users responded positively in relation to their motivation and self-efficacy relating to the incentives scheme, highlighting the benefit of having targeted time points with associated rewards.

"Very motivating"

"It gave me confidence in staying stopped having the vouchers felt rewarding"

"Having a goal/target to reach and having someone to support me whilst quitting"

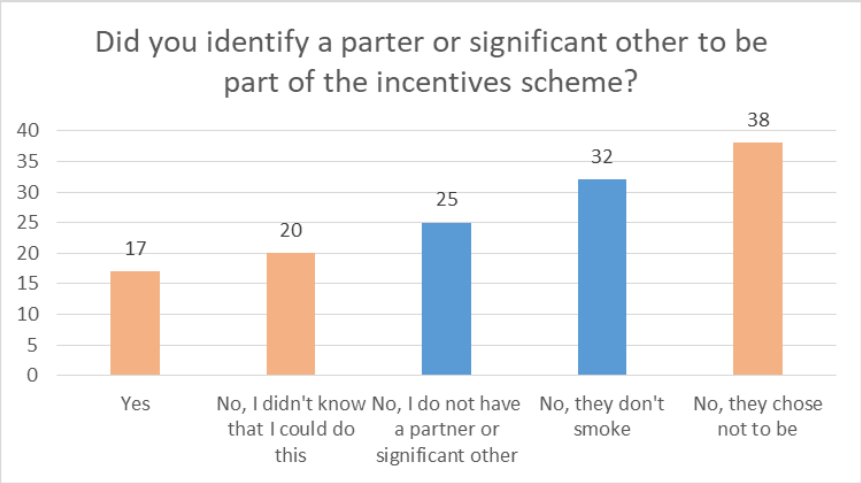
"It gives you more willing to do it"

Accessibility

When asked if there was anything which could make the scheme easier to be a part of, feedback from service users was extremely positive, with many participants saying the scheme was easy and straight forward, and over 75% providing no feedback. Suggestions for improved accessibility did however include flexibility in appointments, including location (*"home" / "closer to home"*), format (*"did not like telephone calls prefer face to face"*) and times (*"more flexible appointment times"*).

Partner/Significant Other Engagement

Chart 3. Identification of significant other



The NENC model allows partners to be identified to receive a £40 voucher for a significant other who has quit smoking and remains smokefree at the 4 weeks post-natal time point. Within the pregnant person survey, participants were asked if they identified a significant other to be part of the incentives scheme with them. Responses can be seen in chart 3.

Responses to this question demonstrate relatively low engagement with the opportunity to identify a partner as part of the incentive scheme, with only 17 (12.9%) stating they had identified a partner. This question wasn't relevant to an additional 57 respondents as they shared that they either didn't have a significant other (N=25 / 18.9%) or their significant other did not smoke (N=32 / 24.2%). The remaining respondents stated that they either didn't know they could identify a significant other (N=20 / 15.2%) or that their partner chose not to be part of the scheme (N=38 / 28.8%).

The 17 respondents who identified a partner during pregnancy were also asked if this increased their own motivation, and their partner/significant other's motivation. Over 82% of pregnant people (14/17) either 'agree' or 'strongly agree' that identifying someone as part of the scheme increased their motivation to remain smokefree, and 15/17 either 'agree' or 'strongly agree' that being part of the incentives scheme increased their partner/significant other's motivation to remain smokefree.

6.2 Element 3: Staff Experiences in Administering the Incentives Scheme

As well as the questions relating to acceptability, the maternity staff survey also asked four questions relating to their experience in delivering the scheme to pregnant people. The questions included asking what was working well with the incentives scheme, what could make the scheme easier for staff, barriers to offering the scheme to service users, and an open question for staff provide feedback that hadn't already been covered in the survey. The open-ended responses to these questions have been coded and themed into three key elements; **Motivation and Engagement with the Scheme** and **Administration of the Scheme**.

Motivation and Engagement with the Scheme

Maternity staff responded positively around how they felt that the incentives scheme increased the motivation of pregnant people to aid quitting. *As well as increasing motivation to quit, maternity staff reported the incentives scheme improving engagement with behavioural support.*

"Helps keep the ladies motivated, more face to face appointments"

"I feel it helps encourage women and their partners for a long term quit"

"It works well to gain regular appointments with ladies and keeps them motivated to quit."

"Some of the women have found it a good motivational tool to aid quitting"

"It gets some smokers to engage who maybe would not of"

"Women love the scheme, range of options with vouchers, staggered dates ensure compliance and engagement"

Administration of the Scheme

When asked if there was anything that could make the scheme easier to use from a staff perspective, many comments related to the administration of the scheme, identifying that the process for voucher ordering was complex, and there were requests for a simplified process for distributing vouchers to incentive scheme participants.

"The system is difficult to use, especially when chasing vouchers which are missing, haven't been issued etc. The spreadsheet to record the vouchers is a complete nightmare, the system is not designed to be user friendly."

"Easier access to the vouchers. And a more robust procedure to be able to follow up non delivered vouchers "

"To be able to physical issue the vouchers to our ladies."

"Easier way to issue vouchers , spend a lot of time chasing unissued vouchers"

"There have been numerous delays in women receiving vouchers from L2S - sometimes 2 weeks or more - this can affect engagement going forward."

Maternity staff also shared that the data relating to the incentives scheme was complex and time consuming.

"Less information on the spreadsheet"

"Delete the some of columns on data collection sheet that aren't submitted each month

"Easier way to issue vouchers , spend a lot of time chasing unissued vouchers"

In relation to both vouchers and data collection, staff highlighted the time it takes to administer the scheme as a barrier. This relates to the staff member's time in ordering the vouchers and completing the data requirements related to this, but also the time it takes for vouchers to be issued to pregnant people. Maternity staff highlighted that this is a small part of their much larger role.

"The admin and the delay in voucher issue which happens frequently meaning staff and women are frustrated"

"Time for MCA (maternity care assistant) as we have other roles in our job and smoking is only a small part of it"

7. Discussion

Taking into account results from the quantitative data, acceptability survey and themed responses, the NENC TDiP incentives scheme appears to be acceptable and well received by both pregnant people accessing the scheme and by maternity staff delivering the scheme. Below some of the common themes are addressed.

Support and Motivation

Support and motivation came out strongly in both participant groups. Pregnant people reported feeling increased motivation partly due to the vouchers they were receiving and were extremely complimentary of the support they were receiving from their maternity care teams. This is testament to the hard work undertaken in maternity units across NENC to embed good quality, evidence based and embedded support for people with tobacco dependency in pregnancy. Maternity staff also identified that the scheme increased engagement rates, even for pregnant people who may not have typically engaged. However, some pregnant people did share that this support could be more easily accessed with flexibility in appointment times and locations.

Vouchers

Maternity staff identified the distribution of vouchers as a barrier to delivering the incentives scheme as it took a lot of their time. Pregnant people also shared that there was sometimes a delay in receiving the vouchers following confirmation of meeting the required time point.

Due to transition of the NENC Public Health Prevention in Maternity Team (who hold the budget for the regional incentives scheme) to a different organisation in December 2023, there were challenges in transacting funding to the supplier of the voucher scheme. This was communicated with Trusts and all users of the scheme, however it did result in some large delays in releasing vouchers to pregnant people. This was an unforeseeable risk when the incentives scheme was implemented and was resolved as soon as possible. However, it is important to acknowledge the unintended consequences of this, including possible reduced engagement with the scheme in this time due to delays in receiving the vouchers, and frustration of staff in not being able to deliver the scheme to its fullest extent. It is possible this could have impacted uptake to the scheme overall.

There was also a request from Maternity staff to simplify the process of ordering vouchers for pregnant people. The current process for the implementation requires manual completion of a spreadsheet which is sent to the provider of the vouchers on a regular basis. There has been significant work to improve data collection through maternity records in readiness for long-term embedding of the NENC Incentive scheme. Staff suggested having the ability to hand out paper vouchers, or top-up gift cards which could be automated at Trust level. These suggestions should be considered to improve the usability of the scheme going forward, including reducing the time it takes to administer the scheme. Given the positive feedback from pregnant people on the vouchers as a motivational tool to quitting and engaging with the scheme, improving the distribution of vouchers will be a positive step for the regional incentives scheme.

Engaging Partners/Significant Others

It is clear from the pregnant person survey and quantitative data submissions that engagement from partners/significant others is low. Additional consideration should be taken to understand at what point in

the pathway pregnant people are encouraged to identify and register a partner/significant other to be part of the incentives scheme. The quantitative data submissions identified that of 236 partners/significant others eligible for post-natal follow-up, only 22 (9.3%) had a CO verified quit, with 167 (70.8%) lost to follow up. Encouraging a smokefree household is extremely important as research shows that around 20-25% of pregnant people are exposed to second hand smoke in the home during pregnancy[11]. Not only this, but those who live with someone who smokes are 6 times more likely to smoke throughout pregnancy and more likely to relapse to smoking once the baby is born, if they have quit[12]. Because of this, it is vital that the wider offer to support and engage partners / significant others is embedded as a key priority alongside quitting support and incentives for pregnant people. It is possible that numbers of partner engagement is low as they are not identified.

Administration of the Scheme

As well as maternity staff highlighting challenges relating to provision of vouchers, they also reported that the reporting of data relating to the incentives scheme was time consuming and added an additional task to their consultations. It is important to acknowledge that the data collection referenced here was the data collection to allow the evaluation of the scheme to take place. In the absence of a Badgernet report to report incentives scheme data, maternity teams were asked to manually report data in an additional excel spreadsheet. In the future, reporting of incentives scheme should be kept within the routine patient clinical record to reduce workload for maternity staff.

8. Limitations of the Evaluation

- There were 37 'current smokers' (28%) responded to the pregnant person survey, meaning that the majority of respondents (72%) had successfully quit smoking. It is important to acknowledge a potentially skewed positive response from those who quit smoking and therefore had a generally good experience with the scheme.
- Whilst the percentage of people not setting a quit date was relatively low (4%) within the incentives scheme data, this is not the same as the percentage of pregnant people referred to the service who did not set a quit date, as not all pregnant people referred will have been added to the spreadsheet. It is likely that people were only added to the spreadsheet when the incentives scheme was discussed with them. In order to understand an accurate picture of non-engagement with the scheme, data should include a complete sample of pregnant people identified as a current smoker, number of people referred to the service, and number of people offered the incentives scheme, as well as additional data surrounding uptake and engagement with the scheme.
- 12.3% of participants of the FI scheme did not have their IMD recorded which is a limitation to the findings relating smoking to deprivation. At Trust level, Tobacco Dependency in Pregnancy leads should consider service access through an equity lens, and tailor support accordingly to engage and support demographic groups with low engagement.

[11] Notley et al, (2022) Development of a Smokefree Home Intervention For Families of Babies Admitted to Neonatal Intensive Care. *International Journal of Environmental Research and Public Health* 19 (6):3670 Development of a Smoke-Free Home Intervention for Families of Babies Admitted to Neonatal Intensive Care - PMC (Accessed: 12 April 2024)

[12] ASH (2021), Supporting Partners to Quit Smoking

9. Recommendations

The North East and North Cumbria tobacco dependency in pregnancy incentives scheme evaluation is acceptable to pregnant people and maternity staff, and acts as a motivational tool to engaging in a quit attempt during pregnancy. The implementation in NENC demonstrate the effectiveness of the scheme in increasing engagement and positive quit outcomes. It is vital that the North East and North Cumbria ICB ensures the scheme remains available to all tobacco-dependent pregnant people to support sustainable reductions to smoking in pregnancy and reduce health inequalities, whilst considering recommendations to improve the scheme in the future. The following recommendations are made based on the findings of this evaluation:

1. Consider where improvements could be made to the process of ordering / supplying vouchers to service users such as automation in order to improve service-user experience, and to reduce the burden to staff administering the scheme.

2. Data collection relating to incentives schemes should be embedded within routine patient records where possible to reduce workload and duplication for maternity staff. This would also remove the risk of incomplete data and therefore improve data quality. All NENC Trusts now use BadgerNet for maternity recordkeeping, where there is an option to include reporting of incentives scheme use. Investment of a regional report for this data should be considered to maximise use of data from BadgerNet.

3. Conclusions drawn relating to engagement at a NENC level cannot consider the nuances of local data or demographics, therefore Trusts should be responsible for completion of local equity audits relating to tobacco dependency treatment in pregnancy. This may include reviewing data relating to referrals received, quit date set, successful quit outcomes and engagement with incentives schemes through an equity lens to ensure interventions do not widen health and healthcare inequalities in pregnancy.

4. Additional engagement with pregnant people and their partners/significant others should be undertaken to understand how best to engage partners/significant others in the incentives scheme, but also more broadly to support a smokefree pregnancy and post-natal period for the whole household.

5. Whilst this evaluation explored the experiences of pregnant people and of maternity staff, it did not explore the experiences of commissioners or the regional programme team who led and supported implementation of the scheme at regional level. It is important to recognise the workload outside of hospital Trusts to support the administration and oversight of this scheme, and future evaluations should consider seeking the views of wider staff involved in implementing and overseeing schemes like this one.

10. Conclusion

To conclude, the evidence base on effectiveness for financial incentives schemes in pregnancy is strong from previous literature, and the NENC TDiP financial incentives scheme supported existing evidence. The

evaluation found that the NENC TDip is acceptable to both those accessing it (pregnant people) and those administering it at Trust level (maternity staff). The NENC Smokefree NHS / Treating Tobacco Dependency Taskforce & Public Health Prevention in Maternity Programme in partnership with NENC LMNS and NENC Smokefree NHS Taskforce should consider recommendations from this evaluation to improve future funded incentives scheme models. At Trust level, Trust leads should hold the responsibility for data quality and analysis through an equity lens to ensure interventions do not widen health and healthcare inequalities.

11. Appendices

Appendix 1: Quit Outcomes by IMD

IMD Decile	Total people taking part		Pregnant people taking part		Pregnant people setting a quit date		Pregnant people CO Verified quit at 4 weeks		Pregnant people smoking at 4 weeks		Pregnant people Lost to Follow-up at 4 weeks	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
1	663	34.5%	584	34.6%	553	34.1%	209	32.6%	170	30.1%	129	47.1%
2	389	20.2%	339	20.1%	330	20.4%	131	20.4%	116	20.5%	53	19.3%
3	231	12.0%	195	11.6%	187	11.5%	82	12.8%	68	12.0%	26	9.5%
4	167	8.7%	144	8.5%	142	8.8%	58	9.0%	57	10.1%	19	6.9%
5	76	4.0%	67	4.0%	67	4.1%	31	4.8%	25	4.4%	6	2.2%
6	50	2.6%	45	2.7%	44	2.7%	18	2.8%	15	2.7%	5	1.8%
7	50	2.6%	42	2.5%	41	2.5%	22	3.4%	10	1.8%	6	2.2%
8	27	1.4%	24	1.4%	24	1.5%	12	1.9%	5	0.9%	5	1.8%
9	31	1.6%	28	1.7%	27	1.7%	13	2.0%	9	1.6%	6	2.2%
10	7	0.4%	6	0.4%	6	0.4%	2	0.3%	1	0.2%	2	0.7%
Unknown	233	12.1%	213	12.6%	199	12.3%	63	9.8%	89	15.8%	17	6.2%
Total	**1,924**	-	**1,687**	-	**1,620**	-	**641**	-	**565**	-	**274**	-

** Please note that the quit, smoking and Lost to Follow-up data does not contain those that are awaiting follow-up as these will be expected to fall into one of these categories in due course*