Appendix 1: Evaluation of cervical text reminder service in London

Introduction

This document describes the broad specification for the evaluation of the cervical screening text reminder service in London. Appendix 2 is the detailed plan developed by PCSE describing the methodology and outputs.

Background

The NHS cervical screening programme aims to reduce cervical cancer incidence and mortality. Women are invited to be screened for the presence of abnormal cell changes in the cervix, which could, if undetected and untreated, develop into cervical cancer. Coverage in London for women aged 25-49 fell from 63.7% in 2015/16 to 62.6% in 2016/17, and London is the region with the lowest coverage in London (65.7% for 25-64-year olds).

Previous research has identified that text message reminders are associated with increased uptake of the cervical screening programme. In a randomised controlled trial, GP endorsed text message reminders resulted in an increase in uptake of 4%.[1]

Text reminder service

GP surgeries are the providers of cervical screening. NHSE, through the PCSE currently issues letters to women eligible for cervical screening when they are due for screening to prompt them to contact their GP surgery to make an appointment. The PCSE is able to access women's registered address in the GP patient database.

The cervical screening text reminder service is designed to provide an additional way of communicating to women that they are due for cervical screening, by sending them a text reminder 12 working days after the issue of the invitation letter. The PCSE will send the NHS numbers of women invited by letter for cervical screening in a weekly period to the SMS provider (only those at GP surgeries that have signed up to the service). The SMS provider will use the NHS number to extract the woman's mobile phone number from the GP system, and then send a text message to the woman. Appendix 1 provides an overview of the data flows for the service.

Aim and objectives

The aim of this evaluation is to understand the impact on screening uptake of sending cervical screening text reminders to women in London. The specific objectives are:

- To assess the cervical screening uptake in patients who have and have not received a text message reminder
- To explore whether sending a text message reminder has different impacts on cervical screening uptake in women of different age groups

[1] Huf, S et al. Behavioural text message reminders to improve participation in cervical screening: a randomised controlled trial. 2017. The Lancet. 390: S46.

- To explore the variation by geographical area and demographic and screening characteristics in London

Methods

The SMS provider will securely send the following information to the PCSE on a weekly basis:

- Patient NHS number
- Patient GP surgery name / code
- Clinical Commissioning Group (CCG)
- Patient has mobile phone number available in GP system – Y/N
- Patient consented to use of mobile phone number for text messages – Y/N
- Text message sent – Y/N (including date message sent)
- Text message outcome - delivered / failed

The PCSE will link the data from SMS provider to their own data on screening invitation and outcome using NHS number of the patient.

If the PCSE do not receive a screening result for an individual within 13 weeks, then they send a reminder letter to the individual. This means that there will be a time lag of 13 weeks (a quarter) from when an invitation is sent, and the final attendance and result information can be accessed and linked. The PCSE will look at stage 1 outcomes and stage 2 (following a reminder letter) outcomes.

Weekly reporting

Weekly data to be presented at the London level and to include analysis disaggregated by text received and text not sent/not received:

1. *Women invited*
    - Number and % of women aged 25-64 invited within the quarter
    - Number and % of women aged 25-49 invited within the quarter
    - Number and % of women aged 50-64 invited within the quarter
2. *Age*- Uptake at 18 weeks (received text vs. did not receive text)
    - Number and % of women aged 25-64 invited within the quarter
    - Number and % of women aged 25-49 invited within the quarter
    - Number and % of women aged 50-64 invited within the quarter
    - *Analysis at London, CCG and STP level*
3. *Deprivation* - Uptake at 18 weeks (received text vs. did not receive text)
    - IMD decile/quintile
    - *Analysis at London and STP level*
4. *Time to screening* -Days between invitation and screening (received text vs. did not receive text)
    - IMD decile/quintile
    - Analysis at London/CCG and STP level

Quarterly reporting

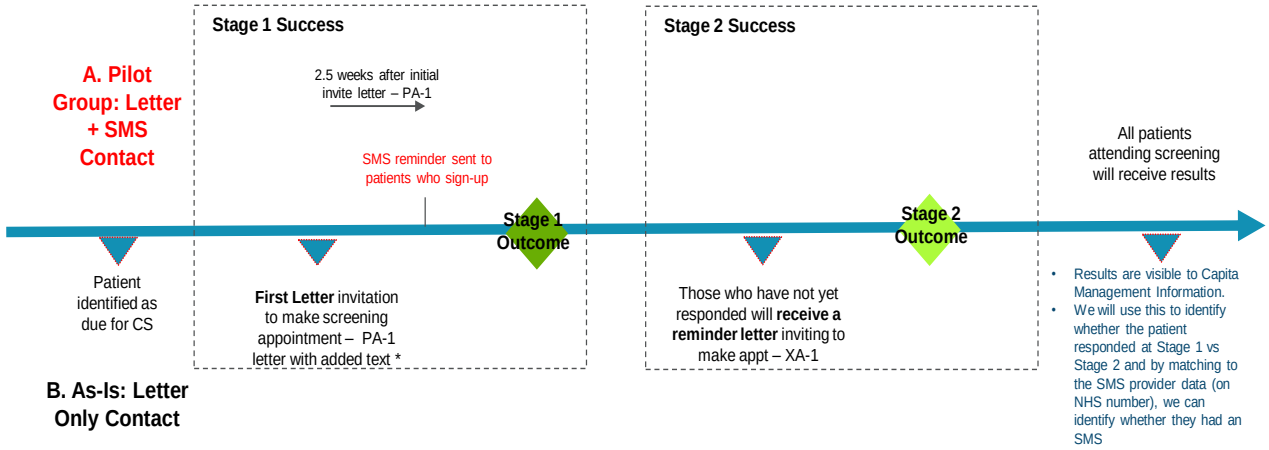
The PCSE to provide quarterly evaluation reports to the cervical screening text reminder steering group (reporting the previous quarter) exploring the data in more detail. The information will be aggregated, non-identifiable data and should be sent in an excel file or csv file via secure nhs.net email addresses.

The PCSE are asked to retain the original individual level dataset in a secure format to enable further, more detailed analysis by NHS England or an academic partner, at a later date.

Appendix 2 – Evaluation methodology (illustrative outputs)

CCN 064 – Text Message Reminder, Cervical Screening

Monitoring and Evaluating Impact of Cervical Screening Text Reminders in London – Measuring SMS delivery and screening attendance



Stage 1 Positive Outcome
- Patient makes screening appt because of first letter
- Identifiable because these patients will not be sent a reminder letter

Stage 2 Positive Outcome
- Patient makes screening appt (because of reminder letter)

Group	SMS Provider data will identify	Metric
A – Letter + SMS	• All patients who agree to SMS contact	• Take-up rate (# Group A vs B) • Stage 1 positive outcome rate • Stage 2 positive outcome rate • Overall outcome rate(s)
B - Letter ONLY	• All patients who decline SMS contact or we are physically unable to contact by SMS or their GP practice has not signed up to the service	

* "If you have registered your mobile phone number with your GP, you may receive a text reminder to schedule your screening appointment. If you do not wish to receive this text, please let your GP know"

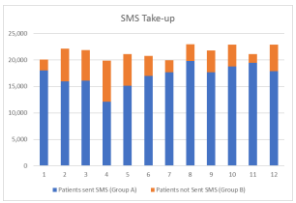
CCN 064 – Text Message Reminder, CS : Weekly Progress Reporting – Example Output

All Patients

(Outputs repeated for 25-49 age group & 50-64)

1. SMS Take-up Rates (%)

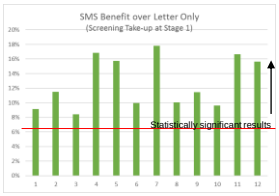
Table 1: SMS take-up by First Invite Letters Sent date	First Invite Letter sent	Patients sent SMS (Group A)	Patients not Sent SMS (Group B)	*SMS Take-Up Rate (%)*
Week 1	20,098	17,987	2,111	*89%*
Week 2	22,109	15,986	6,123	*72%*
Week 3	21,876	16,102	5,774	*74%*
Week 4	19,876	12,098	7,778	*61%*
Week 5	21,098	15,098	6,000	*72%*
Week 6	20,732	16,987	3,745	*82%*
Week 7	19,908	17,654	2,254	*89%*
Week 8	22,987	19,765	3,222	*86%*
Week 9	21,762	17,652	4,110	*81%*
Week 10	22,876	18,765	4,111	*82%*
Week 11	21,092	19,425	1,667	*92%*
Week 12	22,908	17,865	5,043	*78%*



- We will report # 'First Invite' letters sent each week.
- We will monitor the SMS take-up rates against each weekly invite tranche
- SMS provider will provide us with the SMS contact data
- Reporting SMS take-up rates could be 'in lag' depending upon the time needed for SMS provider to create and transfer the data to Capita
- Commentary will also be provided in the weekly reporting output to describe the data results

2. Stage 1 Screening attendance Rates (%)

Table 2: CS appt by Week Invited	Group A - Stage 1 Appt	*SMS Testing (%)*	Group B - Stage 1 Appt	*Non SMS Testing (%)*	Difference (SMS Benefit)
Week 1	9,876	*55%*	966	*46%*	9%
Week 2	7,659	*48%*	2,231	*36%*	11%
Week 3	8,765	*54%*	2,656	*46%*	8%
Week 4	8,765	*72%*	4,325	*56%*	17%
Week 5	7,654	*51%*	2,098	*35%*	16%
Week 6	6,787	*40%*	1,123	*30%*	10%
Week 7	7,654	*43%*	576	*26%*	18%
Week 8	6,678	*34%*	765	*24%*	10%
Week 9	8,645	*49%*	1,543	*38%*	11%
Week 10	8,945	*48%*	1,565	*38%*	10%
Week 11	8,654	*45%*	465	*28%*	17%
Week 12	8,654	*48%*	1,654	*33%*	16%



Chi Square tests will confirm that differences in CS screening attendance rates between Group A vs B could not have occurred by chance

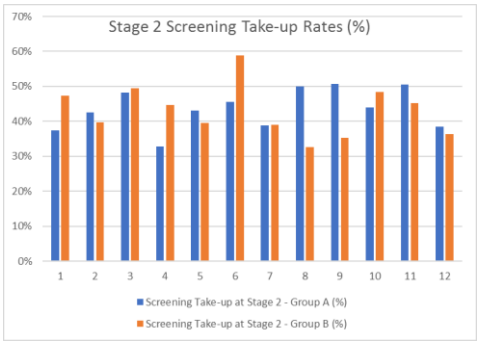
- We will report Stage 1 positive outcomes for both groups.
- We will report explicitly the uplift of SMS group over the letter only group
- There will be a significant lag in these results – we will need to wait until the patient results are received before we will know who responded positively at Stage 1 (up to 13 weeks)

CCN 064 – Text Message Reminder, CS : Weekly Progress Reporting – Example Output… cont

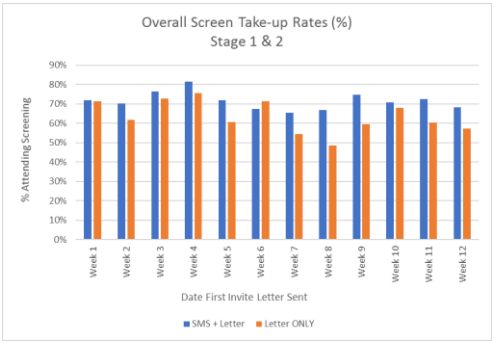
All Patients

(Outputs repeated for 25-49 age group & 50-64)

3. Stage 2 Attendance Rates (%)



4. Overall Attendance Rates (%)



All Patients

(Outputs repeated for 25-49 age group & 50-64)

5. Raw Data Results

SMS + Letter

Table 1: SMS take-up by First Invite Letters Sent date	Patients sent SMS (Group A)	Group A - Stage 1 Appt	REMINDER Invite Letter sent - Group A	Screening Take-up at Stage 2 - Group A	Overall Screening Take-Up rate (%)	Stage 1 Screening Take-Up rate (%)	Stage 2 Screening Take-Up rate (%)
Week 1	17,987	9,876	8,111	3,029	72%	55%	37%
Week 2	15,986	7,659	8,327	3,542	70%	48%	43%
Week 3	16,102	8,765	7,337	3,542	76%	54%	48%
Week 4	12,098	8,765	3,333	1,092	81%	72%	33%
Week 5	15,098	7,654	7,444	3,212	72%	51%	43%
Week 6	16,987	6,787	10,200	4,652	67%	40%	46%
Week 7	17,654	7,654	10,000	3,876	65%	43%	39%
Week 8	19,765	6,678	13,087	6,543	67%	34%	50%
Week 9	17,652	8,645	9,007	4,563	75%	49%	51%
Week 10	18,765	8,945	9,820	4,321	71%	48%	44%
Week 11	19,425	8,654	10,771	5,432	73%	45%	50%
Week 12	17,865	8,654	9,211	3,542	68%	48%	38%

Letter ONLY

Table 1: Letter ONLY by First Invite Letters Sent date	Patients sent Letter ONLY (Group B)	Group B - Stage 1 Appt	REMINDER Invite Letter sent - Group B	Screening Take-up at Stage 2 - Group B	Overall Screening Take-Up rate (%)	Stage 1 Screening Take-Up rate (%)	Stage 2 Screening Take-Up rate (%)
Week 1	2,111	966	1,145	542	71%	46%	47%
Week 2	6,123	2,231	3,892	1,543	62%	36%	40%
Week 3	5,774	2,656	3,118	1,543	73%	46%	49%
Week 4	7,778	4,325	3,453	1,543	75%	56%	45%
Week 5	6,000	2,098	3,902	1,543	61%	35%	40%
Week 6	3,745	1,123	2,622	1,543	71%	30%	59%
Week 7	2,254	576	1,678	654	55%	26%	39%
Week 8	3,222	765	2,457	800	49%	24%	33%
Week 9	4,110	1,543	2,567	908	60%	38%	35%
Week 10	4,111	1,565	2,546	1,231	68%	38%	48%
Week 11	1,667	465	1,202	543	60%	28%	45%
Week 12	5,043	1,654	3,389	1,234	57%	33%	36%

6. Final Summary Comparisons

Difference	% Uplift for SMS Group: Overall Screening Take-Up rate (%)	Stage 1 Screening Take-Up rate (%)	Stage 2 Screening Take-Up rate (%)
Week 1	0%	9%	-10%
Week 2	8%	11%	3%
Week 3	4%	8%	-1%
Week 4	6%	17%	-12%
Week 5	11%	16%	4%
Week 6	-4%	10%	-13%
Week 7	11%	18%	0%
Week 8	18%	10%	17%
Week 9	15%	11%	15%
Week 10	3%	10%	-4%
Week 11	12%	17%	5%
Week 12	11%	16%	2%

Appendix 3: iPLATO service monitoring and evaluation

A.1 Service monitoring

iPLATO will supply NHSE with the following information for management and service evaluation purposes:

- Weekly (until there is 90% coverage across London, then monthly) - list of all GP surgeries (and STP, CCG name, clinical system) invited to participate in the text reminder service, including number and % invited, by CCG and in total
- Weekly (until there is 90% coverage across London, then monthly) – list of all GP surgeries (and STP, CCG name, clinical system) agreeing to participate in the project, including total number and % agreeing, by CCG and in total
- Weekly – list of all GP surgeries opting out and reasons
- Weekly – number of women in the weekly batch list from NHS CSAS
- Weekly – number and % of matches of NHS numbers and mobile telephone numbers, out of all NHS numbers received, by GP surgery and CCG and total
- Weekly – number and % of 'no matches' of NHS numbers, including number and % of women who have opted out of receiving text messages or who do not have a mobile phone number available, by GP surgery, CCG and total
- Weekly - number and % of text messages sent to women, out of all women with phone numbers and out of all women sent invite letters in that batch, by GP surgery, CCG and total
- Weekly – number and % of text messages known to have been delivered successfully, out of all text messages sent and out of all women sent invite letters in that batch, by GP surgery, CCG and total

- Weekly – number and % of text messages that failed to be delivered, out of all text messages sent and out of all women sent invite letters in that batch, by GP surgery, CCG and total, due to:
- Out of service / contract
- Non valid phone numbers
- Weekly- issues and risks to project delivery
- The above information will be aggregated, non-identifiable data and should be sent in an excel or csv file via NHS email.

A.2 Service evaluation

To enable the evaluation of the project, the commissioned service provider will be required to provide the following information to PCSE. This information will be matched with PCSE data on outcome of screening attendance to enable evaluation of the service.

From	To	Timeline	Frequency	Description	Purpose	Format
SMS Provider	NHS CSAS	Project duration	Monthly	NHS number GP practice and CCG If phone # available If opted out of texts If text sent If text failed or delivered	Support monitoring and evaluation of project by an academic partner	SFTP inside N3

CCN 064 – Text Message Reminder, CS

Assumptions

1. **It is already assumed by NHSE that the SMS group will be more successful than Letter only in terms of maximising the % of women who attend screening tests.**

2. **The SMS provider will send the following information weekly to Capita:**
   - Patient NHS number
   - Patient GP surgery name / code
   - Clinical Commissioning Group (CCG)
   - Patient has mobile phone number available in GP system – Y/N
   - Patient consented to use of mobile phone number for text messages – Y/N
   - Text message sent – Y/N (including date message sent)
   - Text message outcome - delivered / failed

3. **The following with be excluded from the SMS group and will continue to receive the Letter only as is the case today (baseline).**
   - GP consent from patient not achieved
   - GP not signed up
   - GP mobile phone numbers not available / not correct
   - SMS not delivered

4. **A Quarterly Monitoring and Evaluation Report should be produced which will look into causal explanations for response rates / screening take-up rates. This should consider**
   - ✓ Postcode
   - ✓ By CCG (32 London)
   - ✓ By Age
   - By Sustainability and Transformation Partnership (x5)
   - Ethnicity
   - Postcode – deprivation index
   - Previous screening history

Further work is required to confirm that the data exists to meet the requirements of the Monitoring & Evaluation Report – see Appendix A for checklist