

Enhanced invitation methods using the question-behaviour effect to increase uptake of NHS Health Checks

a pragmatic double-blind randomised controlled trial

Dr Victoria Cornelius

v.cornelius@imperial.ac.uk

Faculty of Life Sciences and Medicine
Division of Health and Social Care Research

KING'S
College
LONDON

Acknowledgments

Principal Investigator

Professor Martin Gulliford, King's College London

King's College London Study Team

Lisa McDermott, Caroline Burgess, Alison Wright, Victoria Cornelius
Bernadette Khoshaba

Collaborators

Hiten Dodhia, Mark Conner, Frances Fuller, Jane Miller, Alice Forster,
Caroline Rudisill

Funding

National Institute for Health Research (NIHR) Health Technology
Assessment Programme (11/129/61).

Background

- NHS Health Check screening programme was introduced to prevent a substantial number of deaths, myocardial infarctions and strokes each year
- Low uptake of screening programs will reduce effectiveness and can increase inequalities in the health service delivery
- Uptake nationally is currently less than 50%
- We undertook an HTA rapid trial to evaluate an intervention to improve uptake

Primary Objective

To evaluate the effectiveness of an enhanced invitation method using the Question-Behaviour Effect (with and without an incentive for completing the questionnaire)

Intervention: Question-Behaviour Effect

- Principle of QBE:



QBE Questionnaire: 8 questions based on:
intentions, attitudes, anticipated regret, 'subjective norms', 'self-efficacy'

Example:

- I intend to go for a Health Check in the next few weeks
- If I *did not* go for a Health Check in the next few weeks, I would feel regret

Trial Design

Lambeth and Lewisham:
General Practice

21st: PNL list generated & cleaned

≈ 24th: individual randomisation

28th Sent

12
weeks

12
weeks

SI

Standard
Invitation

QBE

QBE questionnaire

7 days

Standard Invitation

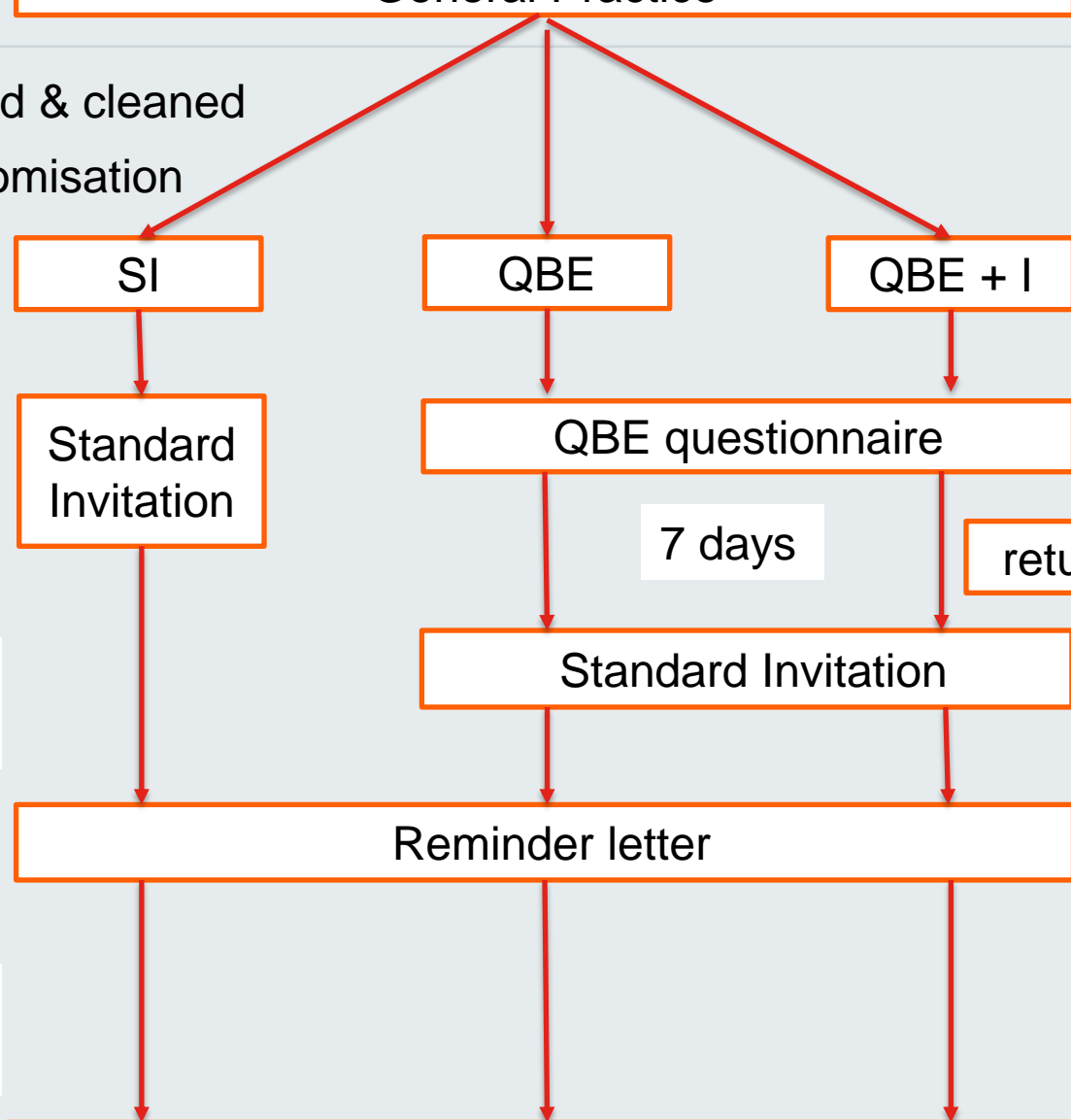
QBE + I

returned

£ 5
voucher

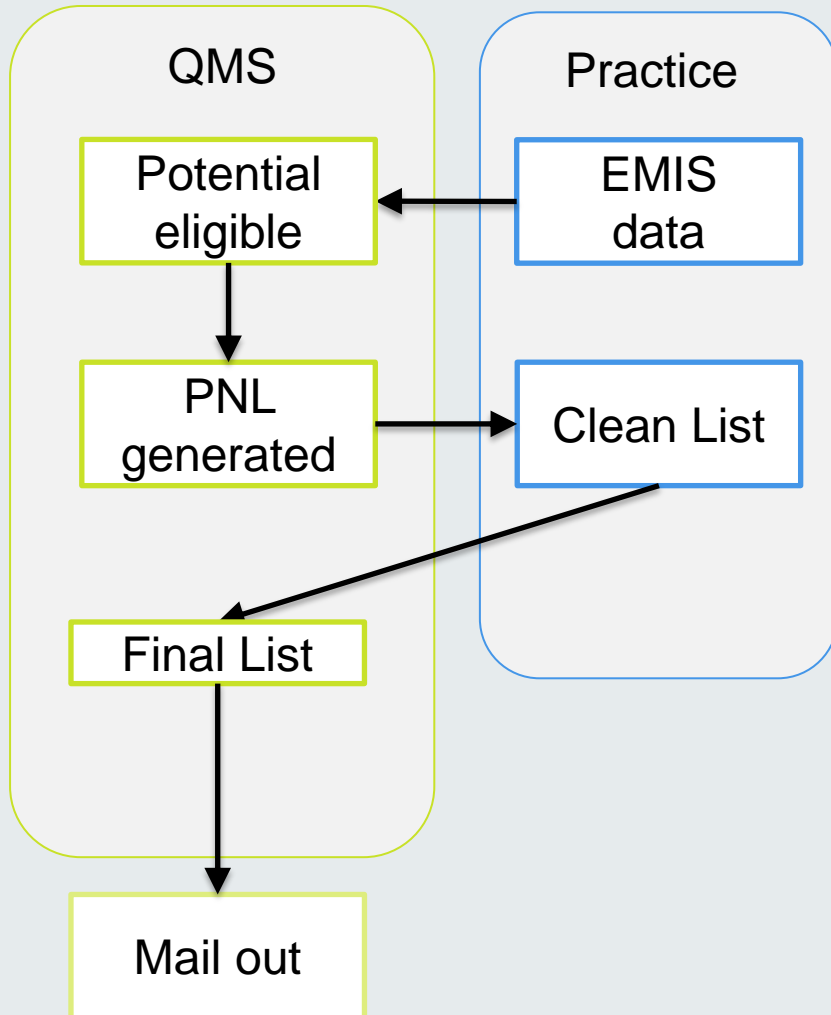
Reminder letter

Primary Outcome: Health check within 6 month of
initial standard invitation



Implementation: Automated & In-practice

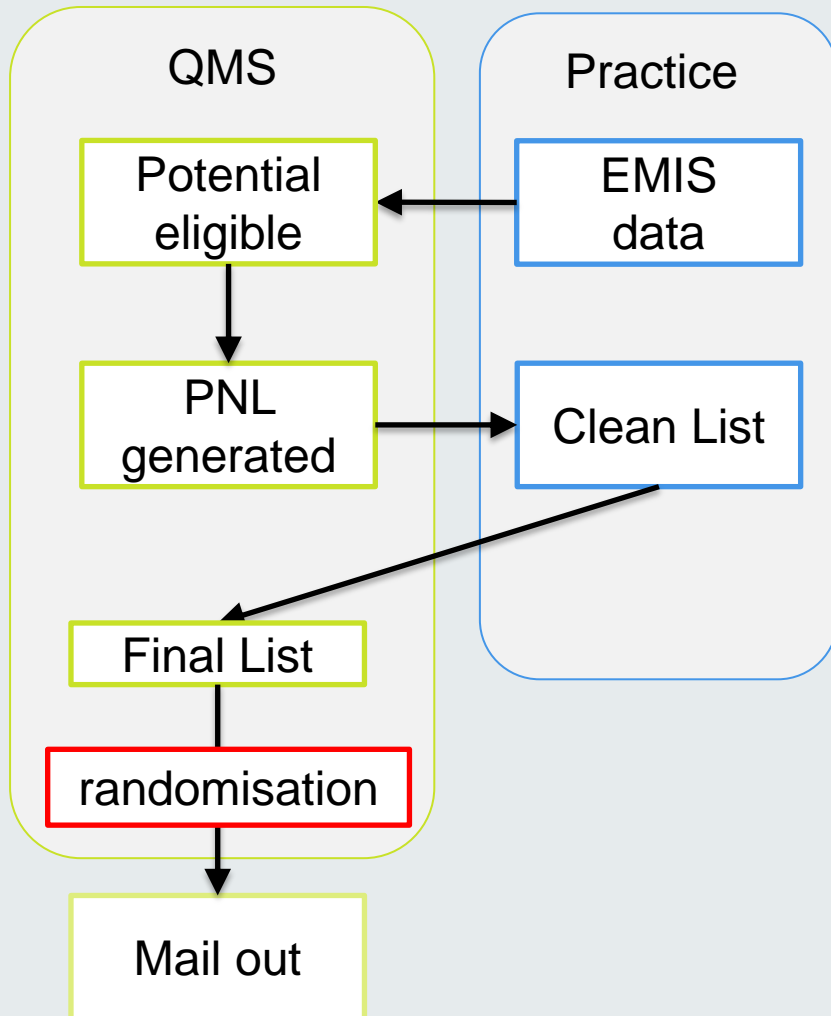
Automated method



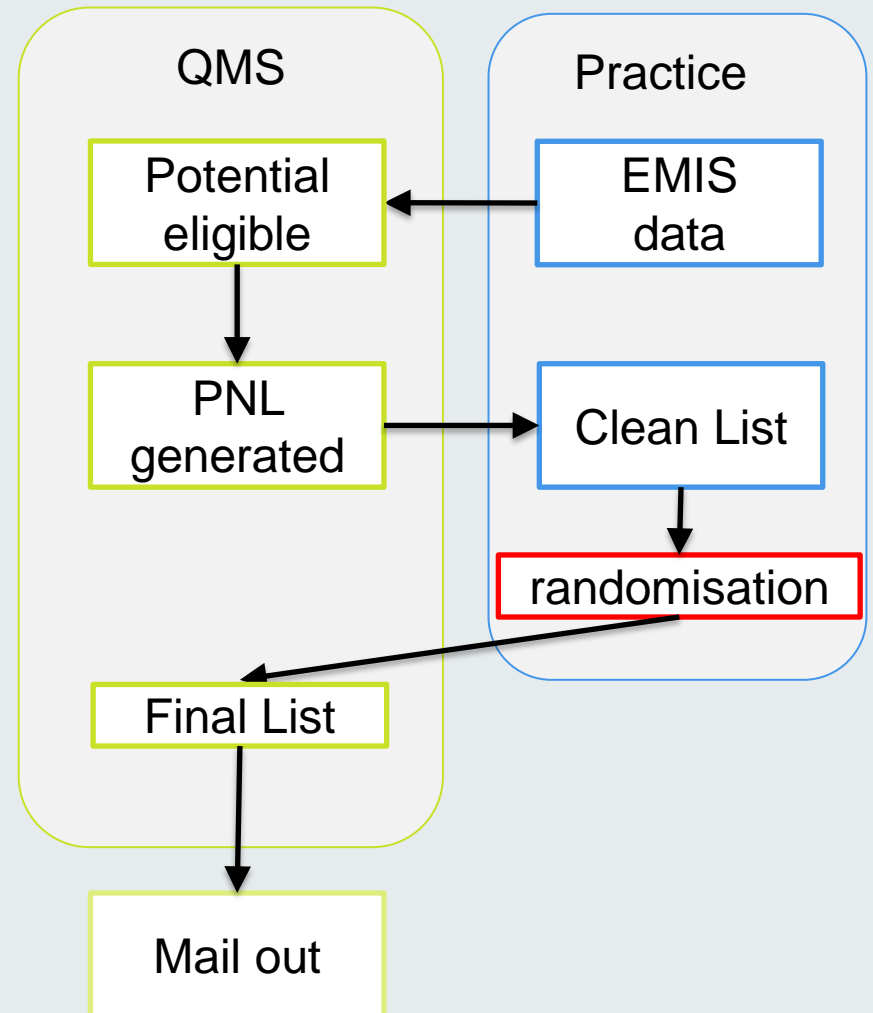
QMS: Quality Medical Solutions

Implementation: Automated & In-practice

Automated method



In-Practice



QMS: Quality Medical Solutions

Results: Baseline

- 18 Practices (6 automated, 12 in-practice), 9 Lambeth, 9 Lewisham
- 12,643 participants over 18 month recruitment period
(n=184 in pilot)

	SI n= 4,231	SI +QBE N = 4,124	SI + QBE + I N= 4,104	Total N=12,459
Female	43.9%	43.2%	44.1%	43.7%
Age (median)	46 (40-54)	45 (40-54)	45 (40-54)	45 (40-54)
Ethnicity				
White	35.6%	35.8%	36.3%	35.9%
IMD: most deprived quintile	28.8%	29.7%	29.9%	29.5%

SI: Standard Invitation; **QBE:** Question Behaviour Effect Questionnaire;
I: £5 voucher incentive

Results: Questionnaire return rate

QBE Questionnaire	QBE (n=3,988)	QBE + I (n=3,969)
Not returned	77%	76%
Returned	23%	25%

Results: Effectiveness

Trial Arm	N	Health checks n	Uptake within 6mths
SI	4,095	590	14.4%
QBE	3,998	630	15.8%
QBE+I	3,969	629	15.9%
Total	12,052	1,849	15.3%

NB outcome data not extracted for 407 participants (3.3% of trial population)

3,904 took place in non-trial participants during the study period

Difference in uptake between: SI and QBE

1.43%

95% CI (-0.12, 2.97), p = 0.070

SI and QBE+I

1.52%

95%CI (-0.03, 3.07), p=0.054

Adjusted for clustering by practice using generalised estimating equations method. Model binomial family with identity link including month and year of randomisation

Significance level set to 0.0167

Results: Efficacy

How well did it worked in those who 'complied' ? (returned the questionnaire)

Trial Arm	Uptake in Compliers	Uptake in non-compliers	All
SI	Unknown	Unknown	14.4%
QBE	32.5%	10.8%	15.8%
QBE+I	32.8%	10.4%	15.9%

Complier-Average Causal Effect (CACE) analysis

Difference in uptake between:

SI and QBE: 6.0% 95% CI (0.08%, 11.3%), p = 0.024

SI and QBE+I: 5.9% 95% CI (0.08%, 10.9%), p = 0.022

Summary

- Overall uptake of health checks within 6 months of invitation was lower than expected at 15% using a population-based call-recall system
- The majority of checks performed during the study practice were 'opportunistic' (see Khoshaba et al.*)
- The QBE intervention used was not an effective intervention for increasing uptake in this population
- QBE questionnaire return rate was very low (24%).
- Participants who returned the questionnaire were more likely to attend a health check (estimated 6% increase)

*Khoshaba, B; Cornelius, V; McDermott, L; et al. **A comparison case-mix for invited and opportunistic NHS Health Checks.** Poster at: NHS Health Check National Conference 2016: 1st March, 2016, London UK.