



Evaluation of a pilot to improve primary care sexual health services in England: analysis of chlamydia testing and diagnosis rate changes

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INTRODUCTION

- Sexually transmitted infections, HIV and unplanned pregnancies continue to be a major public health problem in England, especially in young adults¹
- Strengthening the provision of sexual health services within primary care is seen as an important contributing factor to reducing poor sexual and reproductive health outcomes²
- National guidelines currently recommend general practices provide chlamydia screening to all sexually active 15 to 24 year olds and HIV testing for patients presenting with clinical indicator conditions and, all new patient registrants in high prevalence areas^{3,4}
- Public Health England has piloted an educational training programme based on the Theory of Planned Behaviour⁵ (Figure 1) to support general practice staff to routinely offer chlamydia testing, information about the provision of contraceptive services and free condoms (the '3Cs') to all 15 to 24 year olds regardless of the type of consultation, plus HIV testing in line with the guidelines specified. This intervention was based on an intervention that was tested in a randomised control trial⁶

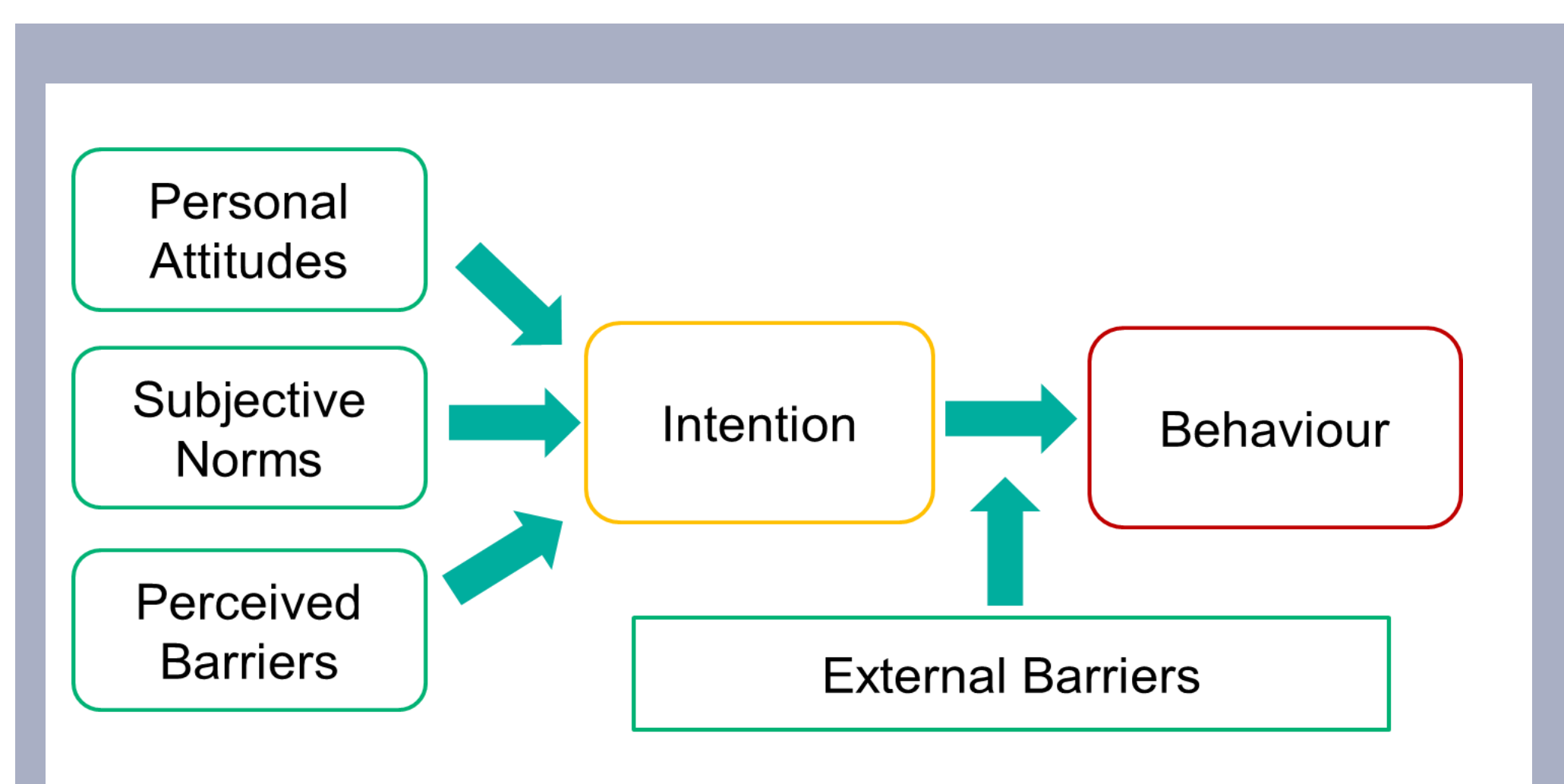


Figure 1: The Theory of Planned Behaviour is a framework to understand an individual's personal attitudes, subjective norms and perceived behavioural controls that relate to the intention to engage in a particular behaviour

METHODS

- The pilot was implemented using a stepped wedged design so all recruited practices would receive training but at different time points
- General practices were randomised to one of three training phases: August 2013, November 2013 and January 2014 (Figure 2)
- The primary outcome measures following training were changes to chlamydia testing and diagnosis rates within each practice for patients aged 15 to 24 years
- Chlamydia testing and diagnosis data from January 2013 to September 2014 were available from the national chlamydia surveillance system, the Chlamydia Testing Activity Dataset (CTAD) and patient registration data was available from the Health and Social Care Information Centre
- Rates pre- and post-training (control and intervention periods respectively) were compared using incident rate ratios (IRR) from a multivariable negative binomial regression model with general practice fitted as a random effect
- Data were analysed using both an 'intention-to-treat' method which included data for all practices initially recruited to the programme, and a 'per-protocol' method including data for practices that received the full intervention (two training sessions: one on the '3Cs' and one on HIV)
- Regression models were developed for men and women separately to assess differences in effectiveness

- Practice specific data were collected by trainers to describe the practices taking part in the programme and used in the models to assess if they were confounders or effect modifiers to the intervention
- The following variables were included in the analysis:
 - proximity of practice to specialist sexual health clinic
 - local authority
 - deprivation score for practice
 - phase training started
 - enhanced payments to practice for chlamydia screening already in place prior to intervention
 - number of general practitioners employed at the practice
 - number of nurses employed at the practice
 - chlamydia testing rate of practice compared to England average
 - general practice urban/rural classification
- Month of test and practice 15-24 year old population size were also adjusted for in all models to correct for seasonal patterns in testing
- Models were developed using a forward step-wise approach

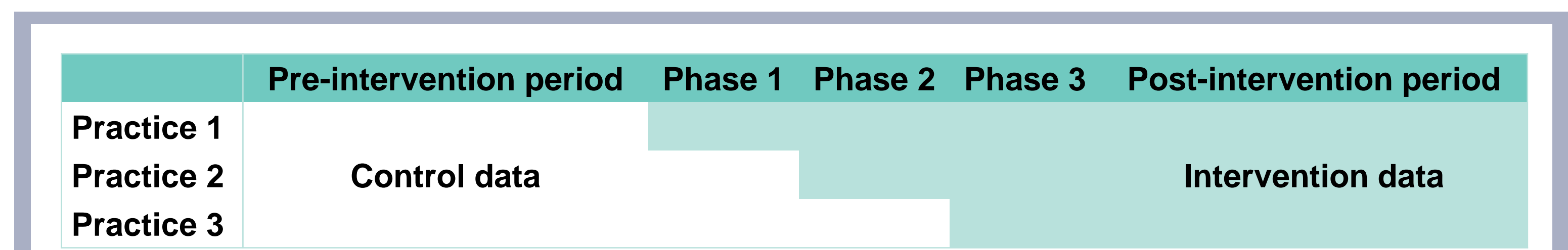


Figure 2: Pilot step wedge design

RESULTS

- 460 general practices across 49 local authorities were recruited to the pilot
- 26,021 chlamydia tests were conducted during the pre-intervention period (control) and 1,493 chlamydia diagnoses made. The median number of tests per practice per month in this control period was 2.68 (0.0-131.3) and median diagnoses per practice per month was 0.14 (0.0-9.05)
- 18,797 chlamydia tests were performed during the post-intervention period and 955 chlamydia infections were identified. The median number of tests per practice per month in the intervention period was 2.67 (0.0-207.9) and median diagnoses per practice per month was 0.13 (0.0-9.0)
- The 'intention to treat' multivariable mixed effect regression analysis using data from men and women combined did not find a significant change in testing or diagnoses rates within general practices after they received training (IRR: 1.01, 95% confidence interval (CI) 0.96-1.07, P=0.718 and IRR 0.98, 95% CI 0.84-1.15, P=0.837 respectively)
- There was a significant increase in testing in practices that received payment for screening before training began and a near significant increase in practices that had a lower than the average chlamydia screening rate before training began. There was also a significant increase in testing for practices that employed between 6 and 15 general practitioners (Table 1)

Table 1. Results from the intention-to-treat combined men and women multivariable mixed effect regression model (number of practices in each sub-group)

Adjusted incident rate ratio (95% Confidence Interval, P value)		
Chlamydia testing rate per practice	Practice paid for chlamydia tests	Number of general practitioners
Less than England average (163)	No (43)	1 (12)
1.0	1.0	1.0
1.54 (0.99-2.37, 0.051)	1.54 (0.99-2.37, 0.051)	1.54 (0.99-2.37, 0.051)
Greater than England average (297)	Yes (148)	2-5 (130)
1.0	1.0	1.0
1.05 (0.69-1.6, 0.823)	2.12 (1.41-3.18, <0.001)	1.19 (0.94-1.51, 0.156)
	Unknown (269)	6-10 (158)
	1.0	1.0
	1.77 (1.19-2.65, 0.005)	1.35 (1.07-1.71, 0.012)
		10-15 (108)
		1.0
		1.37 (1.09-1.73, 0.007)
		16+ (52)
		1.0
		1.27 (0.99-1.61, 0.053)

- The 'per-protocol' analysis restricted the model to the 268 practices that received both '3Cs' and HIV training sessions. The same overall result as the intention to treat analysis was found. No difference in intervention effect between practice sub-groups was identified.
- The analyses for men and women also found similar results in the intention to treat and per-protocol analysis

DISCUSSION

- This large national pilot found that educational support sessions to increase chlamydia screening in primary care were only effective in subsets of general practices
- 3Cs & HIV training may be a useful tool to help practices initiate chlamydia screening or make better use of the resources already available to them, as demonstrated by the interactions found in the model. However, these findings suggest that this intervention is unlikely to increase national testing rates in any substantial way as, whilst increases found were statistically significant, they were still relatively small in magnitude.
- This highlights the importance of using local data to identify specific sub-groups of practices where such an intervention may be most effective, and using this to inform implementation of complex interventions aiming to improve sexual health services for patients
- Supporting general practices to engage with chlamydia screening and other sexual health services is important and other methods of general practice engagement should be explored
- Significant increases in testing observed in a cluster randomised controlled trial⁶ of this intervention were not observed in the evaluation of this pilot
- The analysis presented in this report is only one element of the service evaluation, further analysis will assess changes in HIV testing amongst recruited practices as well as qualitative interviews with general practice staff to explore the differences between intention to provide 3Cs & HIV and the actions by staff

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ACKNOWLEDGEMENTS

We wish to thank all the general practice staff who have taken part in training, our 3Cs&HIV trainers and sexual health facilitators (Sharron Ainslie, Patrick Lenehan, Wendy Elliot, Meroe Bleasdille, Norah O'Brien, Janet Deeming, Deborah Shaw, Ruth Hall and Glyn Pritchard), the members of the advisory group (Dr. Sebastian Kalwij, Dr. Farhana Lockhat, Dr. Jane Wilkinson, Dr. Richard Ma, Jason Warriner, Suzie Clements, Dr. Farah Paruk, Vicki Courage), the Leonardo Audit Committee (Dr. Karin Haar, Olga Rostkowska MD, Ruth Lowbury, Torsten Berglund PhD and Dr. Chris Foy). Project support from Elaine O'Connell, Katherine Butler, Claire Rugman, Nina Ockendon-Powell, Francesca McNeil, Virginia Walker, Zeenat Mauthoor, Dr. Samantha Westrop and Dr. Paula Baraitser.