

Web only Annex 2:

Detailed Data analysis: Aggregate data by month, single year of age and gender for each registered general practice on all chlamydia screening tests in the South West submitted on a National Chlamydia Screening Programme (NCSP) form for the three years 2009 to 2011 (inclusive) was used to determine absolute testing /100 and infection detection rates /1000 registered patients 15-24 years. Tests recorded as diagnostic, or contacts were not included. The NCSP data used was aggregated which precluded any identification of repeat testers. Thus, some of the data would be from patients have multiple screens, but the numbers tested are sufficiently low and given the low numbers of repeat tests in patient within this setting the numbers of such tests are likely not to cause any major bias in the study results. About 4% of total tests results were equivocal, inhibitory or insufficient. These results were excluded from analysis as it was assumed that they would be distributed as positive or negative in the same ratios as the others.

Intention to treat analysis: The effect of the intervention as a whole was assessed by determining the absolute screening test rates and by performing an estimation of the ratio of the testing and number of chlamydia infections detected (incidence rate ratios) in the intervention practices compared to the control practices. This was performed using mixed-effects Poisson regression analysis, with the numbers of screening tests or chlamydia infections detected as the outcome variable, the natural logarithm of the estimated numbers of 15-24 year old males and females registered at each practice as an offset, and general practice as a random effect.

Intention To Treat analysis: This random effect allows for dependencies between rates in each time period within the same practice. Confounding of the intervention effect was not expected to occur due to the stratified random allocation of the intervention. However, the

variables sex, age, primary care trust, deprivation score quintile, quarter within the year, and pre-intervention chlamydia testing rate were incorporated into the regression model, to both improve the precision of the intervention effect, and account for any imbalance due to the randomisation being clustered. Modification of the intervention effect by the above variables was assessed by including interaction terms individually into the main effects model; p values were obtained from a Wald test of the interaction term parameters being equal to zero.

Per protocol analysis: To determine whether any of the components of the intervention modified the effect we undertook a per-protocol analysis. For this analysis NSCP data from the first full month after the initial visit in intervention practices was used, and practices were matched by same or neighbouring Primary Care Trust (PCT) and practice list size with control practices, to control for temporal patterns in the numbers of screens. If practices refused the intervention, May 2010 was used as the first month in the analysis. Practices were classified as to their level of engagement; no engagement, partial engagement, and fully engaged i.e. all contacts accepted. The intervention consisted of a number of components that practices could choose to implement, and therefore these could not be considered as independent. Due to the small number of practices implementing certain combinations of components a simplified analysis was performed for each of the three individual components; chlamydia invitation cards, posters, and templates/computer prompts. The individual components of the intervention were assessed separately in mixed-effects Poisson models using a three level categorical variable, control practice, intervention practice not using component, and intervention practice using component. Nearly all of the intervention practices that engaged used invitation cards and posters causing considerable difficulties in disentangling any “independent” effect of intervention components. Therefore, these effects can only be considered as indicative of the likely effect for that component.