Reviewer’s report

Title: Matching participants in a systematic chlamydia screening programme with patients seen by a sexually transmitted infections clinic, general practitioners, or medical specialists: an observational study of the added value of systematic chlamydia screening programme in reaching young people.

Version: 2 Date: 28 August 2014

Reviewer: Caroline van Gemert

Reviewer’s report:

Major compulsory revisions:
• The years and setting should be included in the title
• The title is very long and describes the methods. It would be clearer if it directly related to the objective of the study.
• The year of the intervention should be specified in the abstract
• The abstract introduction does not describe the rationale for the research
• The study design in the abstract should be more clearly described – “observational study” is very vague
• The introduction needs significant work. The research problem has not been clearly articulated and the background to the research was very vague.
• In the introduction, the description of population-based internet chlamydia screening was not well described and it was not clear who was targeted, how and when. Another study has been referenced however the authors should include this vital information as background.
• The rationale for targeting 16-29 year olds was not clearly established. This requires work, as well as a brief review of evidence for different strategies for targeting young people to establish a rationale for using internet-based recruitment strategies.
• The focus on the Dutch screening program should be limited in the introduction; because it has not been fully described, the vague descriptions of the program reduce the impact of the introduction. It is suggested to focus on setting the scene for why chlamydia screening is warranted in the Netherlands, and the reason for internet-based screening before describing what indicators will be addressed in the paper.
• The introduction notes that “Participation rates in the Dutch chlamydia screening programme were relatively low and decreased over time from 16% to 11%, excluding screening in regular care”; this is very vague. What years was a decrease observed, and regular care has not yet been defined (which is should – the Dutch system should be explained in brief). In any case, the discussion about screening rates in the Dutch program and UK programs should be removed from the introduction as it is not directly concerned with the main topic of the paper –
to look at newly reached men and women.

- The authors state in the introduction that “the effectiveness of population-based screening could be negatively affected by reaching persons already served by regular care”; this isn’t clear as to what the negative effect is and why it is important
- Some of the writing throughout the paper is not academic and vague; for example “It is important to know who takes part in the chlamydia screening programme” – why is this? It might be obvious but it is important to be clear in purpose for each sentence.
- The study design was not clearly defined in the methods section
- “Randomised stepped wedge approach”; this should be described in brief. It is not clear if and why randomisation was done as all young people in a study areas register were invited to participate – or was this done to identify the regions for selection?
- The year of the population number referenced should be included in the methods section when describing the register
- Why were data not matched to the registry in the same way for the STI and GP clinics compared to the GP and medical specialists? And how might this bias the results?
- What does the author mean that people were matched by person-date - is this date of birth?
- The probabilistic matching and choice of match is unclear. A ranking order was assigned, but how were matches then chosen for inclusion? Was there a cut-off?
- The study population needs to be clearer; was it any person who was screened at least once for chlamydia in either the CSI or GP or STI clinic, etc? Earlier in the methods, it appears that the study population is “Three data sources were used for all the men and women aged 16-29 years who were tested for chlamydia in the study area between 2006 and 2010” however it is then defined as “Participants were included at their first chlamydia screening test within CSI.” It is not clear then why data from 2006 were included (as described previously in the methods). I assume this was to determine if CSI participants had a previous record of STI testing at a GP or STI clinic, but this is not clear and should be revised.
- The number of people included in the analysis (as well as how this number was finally reached) should be presented in the results, not the methods. There are several additional places where results are included in the methods and this should be revised in detail, including the number of missing data and the proportion of previous tests conducted within 3 months.
- The methods state that tertile age groups were used, and thus the n within should be roughly even however this isn’t the case as 40% of were aged 25-29 years whilst ~25% were aged <21.
- There seems to have been two questionnaires: one that assessed risk and therefore assigned eligibility to receive the screening test kit, and a second that
was optional and collected additional info. This needs to be clearer throughout (particularly in the results when comparing people that completed a questionnaire or not – I assume the authors mean the latter questionnaire); in particular the types of questions that were asked in the second questionnaire and the methods for data collection.

- With regards to the matching process, it is not clear if previous STI testing by a regular care provider was based on matched data or self-report. The inclusion of data from GP and STI clinic data suggests it was based on matching, however the methods infer that it was based on self-report. Previous testing requires further description to; was it based on STI testing or could it also be for presentation at an STI clinic but no testing?

- “Age, sex, nationality, test result and newly reached participant were compared between participants with and without questionnaire using Chi square test” – why was this done? It isn’t clear why based on the objectives of the paper.

- The results presented in the methods should be moved to early in the results section so readers are appropriately orientated to the number of records from each source.

- The overall proportion of invited young people that were screened should be reported early in the results (5,323 of 41,000 people?) – this helps assess the generalizability of the data

- The use and interpretation of data comparing participants who completed the second questionnaire is still not clear – why do we care who completed the second questionnaire, and how does it relate to the research question?

- “In restricted analyses including questionnaire data…” – do the authors mean that restricted analyses were restricted to participants with complete second questionnaire data or that there were additional restricted analyses?

- The second paragraph of the discussion is not clear – it reports that other studies using matched data have looked at outcomes after a chlamydia test, but then asserts that the results are valid because it is linked to a municipal register. The point of this paragraph is not clear.

- The discussion as to why newly reached participants were young men with fewer sex partners than participants previously tested was weak. There is a significant body of evidence to suggest that young men traditionally have lower testing rates than females, and also that people with more sex partners are more likely to attend STI clinics. The point that the screening program reaches a new yet important group is still valid, but it should be discussed within context of previous research.

- Regular care and strategies to promote STI testing in regular care may bias results; the paper does not describe regular care in the Netherlands however any health promotion strategies (general or priority population targeted) in the local area should be considered may influence previous testing and will certainly influence the generalizability of the results nationally or to other countries

- Comparison with other countries screening programs is weak as it doesn’t fully discuss differences in recruitment methods and the sample frames or cost.
Reference has been made to a UK program however the comparison between this and other programs needs strengthening. The use of a registry for all young people in a region varies considerably to other screening programs and this should be considered in greater detail.

- The overall participation rate of the screening program was roughly 13% (5000 participants among 40000 eligible); this low participation rate also impacts on the generalizability of the results
- The text included in figure 1 (on page 16 of the PDF) is not needed as it is presented in the methods

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests