Peer Review History

BMJ Open-2010-000004

Population attributable risk for chlamydia infection in a cohort of young international travellers (backpackers) and residents in Australia

Handan Wand, Rebecca Guy, Basil Donovan and Anna McNulty

Reviewer 1: Hinde, Andrew

Andrew Hinde
University of Southampton, Southampton Statistical Sciences Research Institute

The Study	Yes	No
Is the research question clearly defined?	✔	
Is the overall study design appropriate and adequate to answer the research question?	✔	
Are the participants adequately described, their conditions defined, and the inclusion and exclusion criteria described?	✔	
Are the patients representative of actual patients the evidence might affect?	✔	
Are the methods adequately described?	✔	
Is the main outcome measure clear?	✔	
Are the abstract/summary/key messages/limitations accurate?	✔	
Are the statistical methods described?		✔
Are they appropriate?	✔	
Is the standard of written English acceptable for publication?		✔
Are the references up to date and relevant? (If not, please provide details of significant omissions below.)		✔
Do any supplemental documents e.g. a CONSORT checklist, contain information that should be better reported in the manuscript, or raise questions about the work?		

If you answered No to any of the above, please supply details below.
The method of calculation of the population attributable risk is not described. Readers are simply referred to previous papers. I think a brief description of the logic behind the method would be appropriate in this paper.
The manuscript will need careful editing. I have provided some specific suggestions in my comments for the authors.
Several important previous studies are not cited. Details are listed in my comments for the authors.

RESULTS AND CONCLUSION (For articles reporting research findings only)	Yes	No
Do the results answer the research question?	✔	
Are they credible?	✔	
Are they well presented?	✔	
Are the interpretation and conclusions warranted by and sufficiently derived from/focused on the data?	✔	
Are they discussed in the light of previous evidence?		✔
Is the message clear?	✔	

If you answered No to any of the above, please supply details below.

The authors do not relate their conclusions to previous work clearly enough. Although their is the first study to use this specific method to pin down the subgroups of the population which have substantly elevated risks of chlamydia infection, and hence to suggest profitable avenues for intervention, other studies have used different methods to achieve the same end. The authors fail to cite these, or to evaluate their own conclusions in the light of these studies.

REPORTING AND ETHICS	Yes	No
Is the article reported in line with the appropriate reporting statement or checklist (e.g. CONSORT)?		
Are research ethics (e.g. consent, ethical approval) addressed appropriately?	✔	
Is the article free from any concerns about publication ethics (e.g. plagiarism, fabrication, redundant publication, undeclared conflicts of interest)?		✔

If you answered No to any of the above, please supply details below or contact the editorial office.

I have answered no to the third of these questions. This indicates that I have no concerns about publication ethics.

definitions and the categorisation of risk factors is required in certain places. Several important previous studies are not cited.

Here are some specific comments.

p. 4, l. 8 'like many resource-rich countries'. Why are 'resource-rich' countries the reference? Do you really mean a set of countries characterised by abundant deposits of primary resources (e.g. Kuwait, Saudi Arabia, Iran, Russia, and the Democratic Republic of the Congo)? If so, do you have evidence that Chlamydia notifications have been increasing in 'many' of these? On the other hand, if you really mean 'developed countries' like the United Kingdom, most of western Europe, the United States, and so on, then say 'developed countries', or 'industrial countries'.

p. 4, l. 15 'Understanding ….. other factors IS important. The subject of the verb is singular.

p. 4, ll. 16-17 'Although odds ratios … may be well suited to the assessment of causality'. I am not sure this is so. Odds ratios will tell you about an association, and they will allow you to quantify the strength of an association, but I should not want to base policy interventions just on empirically derived odds ratios, without some kind of theoretical or substantive explanation as to why A might cause B.

p. 5, ll. 8-9 'A patient registration … reason for attending.' This is not a sentence.

p. 5, l. 17 Could you provide details of these lower limits for hazardous alcohol consumption in millilitres of pure alcohol or in 'units of alcohol' (where 1 unit is 10 ml pure alcohol).

p. 5, ll. 19-20 'men reporting sex with men in the past year'. It is redundant to state you have eliminated these people, as they are already eliminated as a result of the definition of heterosexual given in p. 5, l. 13.

p. 6, ll. 19-21 'PAR' should not be in italics here, for consistency with earlier mentions.

p. 7, l. 7. Delete (p<0.001). The increase in the proportion of backpackers over time is just a fact and you are not wanting to infer anything from it.

p. 7, l. 9 Change 'gender' to 'sex'.

p. 7, ll. 12-15 The wording here is clumsy. I should re-write these lines to read 'backpackers were aged >25 years (58% vs 42%), had never married (94% vs 85%), were unemployed (27% vs 13%) were current smokers (39% vs 34%), reported excess alcohol consumption (17% vs 5%), reported 3 or more sexual partners in the past 3 months (26% vs 15%), reported sex in Thailand in the past 12 months (22% vs 9%), reported past Chlamydia diagnoses (15% vs 10%) and stated that the reason for'.

p. 8, ll. 3-6 The wording here is clumsy. I should re-write these lines to read 'backpackers were aged >25 years (63% vs 52%), had never married (92% vs 81%), were unemployed (26% vs 13%) were current smokers (42% vs 36%), reported excess alcohol consumption (27% vs 14%), reported two or more sexual partners in the past 3 months (31% vs 22%), reported sex in Thailand in the past 12 months (7% vs 4%), reported past Chlamydia diagnoses (13% vs 9%) and stated that the reason for presenting'.

p. 8, l. 12 A 95% confidence interval of 5%-6% around a point estimate described as 6% is not very helpful.

p. 8, l. 18 Insert space between '3' and 'provide'.

p. 8, l. 22 Delete ']' after 'AOR'.

p. 8, l. 23 Change 'reporting 2 (AOR)' to 'reporting 2 (AOR = 2.11, 95% CI: 1.53-2.91)'.

p. 9, l. 4 'past chlamydia diagnosis was not significant on multivariate analysis'. Neither was excess alcohol consumption, though you do not mention it.

p. 9, ll. 14-15 The figure of 48% for non-backpackers is 50% in Table 4.

p. 9, l. 15 Change 'attributed to' to 'associated with'.

p. 10, l. 11 Change 'has' to 'have'.

p. 11, l. 20 Change 'diagnoses' to 'diagnosis'.

p. 12, ll. 7-8 'one of the first attempts at a comprehensive study of the population impacts of risk factors for chlamydia infection'. It may well be one of the first attempts to calculate PARs, but there are some important studies of risk factors for Chlamydia which you do not cite. Some of these use methods different from yours to try to pin down the most important subgroups within the population at which interventions might be targeted. A non-exhaustive list is given below.

Fenton, K., Korovessis, C., Johnson, A., McCadden, A., McManus, S., Wellings, K., Mercer, C., Carder, C., Copas, A., Nanchahal, K., Macdowall, W., Ridgway, G., Field, J. and Erens, B. (2001) 'Sexual behaviour in Britain: reported sexually transmitted infections and prevalent genital Chlamydia trachomatis infection', Lancet 358:1,851–54.
Fenton, K., Mercer, C., McManus, S., Erens, B., Wellings, K., Macdowall, W., Byron, C., Copas, A., Nanchahal, K., Field, J. and Johnson, A. (2005) 'Ethnic variations in sexual behaviour in Great Britain and risk of sexually transmitted infections: a probability survey', Lancet 365:1,246-55.
Low, N., Sterne, J. and Barlow, D. (2001) 'Inequalities in rates of gonorrhoea and chlamydia between black ethnic groups in south east London: cross-sectional study', Sexually Transmitted Infections 77:15-20.
Radcliffe, K., Ahmad, S., Gilleran, G. and Ross, J. (2001) 'Demographic and behavioural profile of adults infected with chlamydia: a case-control study', Sexually Transmitted Infections 77:265-70
Stuart, B. and Hinde, A. (2010) 'Identifying individuals engaging in risky sexual behaviour for Chlamydia infection in the UK: a latent class approach', Journal of Biosocial Science 42, 27-42.
Winter, A.J., Sriskandabalan, P., Wade, A.A.H., Cummins, C. and Barker, P. (2000) 'Sociodemography of genital Chlamydia trachomatis in Coventry, UK 1992-1996', Sexually Transmitted Infections 76:103-9.

p. 13, l. 1 Change 'Bristish' to 'British'.

p. 13 References [10] to [14] are not cited in the text. Either cite them or delete them.

Table 1. Change the name of the variable from 'Sex in Thailand last 12 months' to 'Sex overseas in last 12 months'. Then amend the three categories to be 'In Thailand', 'In another country' and 'No sex overseas'.

Table 2. What do you mean by the category 'Consistent (always)' in relation to condom use in the past 3 months? Do you mean that the use is always consistent? Or do you mean that you define consistent use as 'always using a condom'? If the former, can you explain what you mean by consistent use? If the latter, I should relabel the categories to be 'Always' and 'Not always' and avoid using the term 'consistent' altogether.

Reviewer 2: Lim, Megan

Megan Lim
Burnet Institute, Centre for Population Health

The Study	Yes	No
Is the research question clearly defined?	✔	
Is the overall study design appropriate and adequate to answer the research question?	✔	
Are the participants adequately described, their conditions defined, and the inclusion and exclusion criteria described?	✔	
Are the patients representative of actual patients the evidence might affect?	✔	
Are the methods adequately described?	✔	
Is the main outcome measure clear?	✔	

If you answered No to any of the above, please supply details below.		
References 10-14 are not cited in the paper. Reference 10 is a conference paper, but this study has been published in Aust N Z J Public Health. The second paragraph reads as if it describes risk behaviours in young Australians, but the references cited are all about travellers. It would be useful to describe existing knowledge on the prevalence of risk factors in both backpackers and non-backpackers, and make it clear in the text which group is being described.		

RESULTS AND CONCLUSION (For articles reporting research findings only)	Yes	No
Do the results answer the research question?	✔	
Are they credible?	✔	
Are they well presented?	✔	
Are the interpretation and conclusions warranted by and sufficiently derived from/focused on the data?	✔	
Are they discussed in the light of previous evidence?	✔	
Is the message clear?	✔	

REPORTING AND ETHICS	Yes	No
Is the article reported in line with the appropriate reporting statement or checklist (e.g. CONSORT)?	✔	
Are research ethics (e.g. consent, ethical approval) addressed appropriately?	✔	
Is the article free from any concerns about publication ethics (e.g. plagiarism, fabrication, redundant publication, undeclared conflicts of interest)?	✔	

Comments

If you have any further comments for the authors please enter them below.

This was an interesting and useful study and the manuscript is well written.

There were a few typographical errors in the manuscript, for example…
page 8, line 16 - the proportions of females presenting to the clinic for a STI/HIV screen do not match the numbers in the table.
page 8, line 59 - an AOR is missing
page 10, line 28 - 'has' should be 'have'
page 10, line 30 - delete the word 'at'
page 11, line 5 - 'of' should be 'on'
Also, British English spelling should be used throughout, instead of American, e.g. traveller not traveler and randomise not randomize.

I have two additional questions…
Firstly, in the discussion of health promotion strategies (page 11), can the authors think of any potential avenues for specifically reaching backpackers, rather than the general population?
Secondly, could the authors provide an explanation for the high number of backpackers seen at this clinic? Does this site cater specifically for backpackers in some way, or is it normal for a sexual health centre in Sydney to have backpackers for nearly half of its clients? Discussing this would also be important in discussing the generalisability of the findings to populations outside of this clinic.

Authors Response to Decision Letter for (BMJ Open-2010-000004)

Population attributable risk for chlamydia infection in a cohort of young international travellers (backpackers) and residents in Australia

We would like to re-submit our revised manuscript titled "Population attributable risk for chlamydia in young international travellers (backpackers) and residents in Australia".
We incorporated reviewer's comments and made all relevant changes/edits. We also included:
• Author contribution section
• Article Summary
• A funding statement

Author's response to the reviewer's comments:

Reviewer: 1

Reviewer's comment #1:

The method of calculation of the population attributable risk is not described. Readers are simply referred to previous papers. I think a brief description of the logic behind the method would be appropriate in this paper.

Author's response #1:

Following the reviewer's comment, we have added a brief section into the Method section as follows:

The PAR is formulated as a function of odds ratio (OR) (s) and the prevalence (p) (s) of the risk factor(s). When there is only one risk factor at two levels (1 versus 0)
(1)
Where is the odds ratios, is the prevalence of the risk factor in the population and indexes the two strata determined by the value of the risk factor. Equation 1 can be generalized to the multi-factorial setting when there are more than one risk factors at multiple levels, as
(2)
where and , , are the odds ratios and the prevalences in the target population for the th combination of the risk factors. Full PAR can be estimated by using Equation 2 and interpreted as the percent reduction expected in the number of HIV seroconversion if all the known risk factors were eliminated from the target population.
In a multifactorial disease setting, at least some key risk factors such as age and sex are not modifiable. This limits the practical utility of the full PAR which is based on modification of all variables of interests. In an evaluation of a preventive intervention in a multifactorial disease setting, the interest is in the percent of cases associated with the exposures to be modified, when other risk factors, particularly non-modifiable, exist but do not change as a result of the intervention. Therefore we derived and used partial PAR which kept unmodifiable variable(s) unchanged.
Under the assumption of no interaction between the modifiable and non-modifiable risk factors of interest, the partial PAR is formulated as
(3)
where denotes a stratum of unique combinations of levels of all background risk factors which are not modifiable and/or not under study, and is the odds ratio in combination relative to the lowest risk level, where =1. As previously, indicates a risk factor defined by each of the unique combinations of the levels of the modifiable risk factors, that is, those risk factors to which the applies, , and is the relative risk corresponding to combinations relative to the lowest risk combination, . The joint prevalence of exposure group and stratum is denoted by , and . The represents the difference between the number of cases expected in the original cohort and the number of cases expected if all subsets of the cohort who were originally exposed to the modifiable risk factor(s) had eliminated their exposure(s) so that their relative risk compared to the unexposed was 1, divided by the number of cases expected in the original cohort.

Reviewer's comment #2:

The manuscript will need careful editing. I have provided some specific suggestions below.

Author's response #2:

We have now edited the manuscript carefully and incorporated the reviewer's suggestions.

Reviewer's comment #3:
Several important previous studies are not cited. Details are listed below.

The authors do not relate their conclusions to previous work clearly enough. Although their is the first study to use this specific method to pin down the subgroups of the population which have substantially elevated risks of chlamydia infection, and hence to suggest profitable avenues for intervention, other studies have used different methods to achieve the same end. The authors fail to cite these, or to evaluate their own conclusions in the light of these studies.

Author's response #3:

We would like to thank to the reviewer for providing these references for us. We agreed with the reviewer that these studies had the similar aims to our study i.e. determining the sub-groups of the population which have substantially elevated risks for chlamydia infection. The majority of these studies described differences in rates of chlamydia infection in ethnic groups (Low et al, 2001; Radcliffe et al, 2002; Fenton et al, 2005; Winter et al 2000). Fenton et al (2001) reported heterogeneity in the rates of self-reported chlamydia infection by gender.

However, the primary aim of the current study was to investigate the differences between the "travellers" (regardless of the ethnic background) and the "comparison group" (regardless of the ethnic background). Nevertheless, we incorporated these references in to the conclusion as follows:

Since the ~50% of the backpackers were born in England, we related our results with the studies relevant to this group and added the following section in the "Discussion" section:

Reviewer's comment #4:

This is a useful report which provides some new information about the importance in the population of various risk factors for chlamydia.

Author's response #4:

We would like to thank to the reviewer for this positive comment.

Reviewer's comment #5:

The paper requires careful editing, and several passages should be re-worded. Clarification of definitions and the categorisation of risk factors is required in certain places.

Author's response #5:

Following the reviewer's comments, we edited the manuscript carefully.

Reviewer's comment #6:

Several important previous studies are not cited.

Author's response #6:

Please see Author's response #3.

Here are some specific comments.

Reviewer's comment #7:
p. 4, l. 8 'like many resource-rich countries'. Why are 'resource-rich' countries the reference? Do you

really mean a set of countries characterised by abundant deposits of primary resources (e.g. Kuwait, Saudi Arabia, Iran, Russia, and the Democratic Republic of the Congo)? If so, do you have evidence that Chlamydia notifications have been increasing in 'many' of these? On the other hand, if you really mean 'developed countries' like the United Kingdom, most of western Europe, the United States, and so on, then say 'developed countries', or 'industrial countries'.

Author's response #7:

We agree with the reviewer. However we deleted this section following the second reviewer's comment.

Reviewer's comment #8:

p. 4, l. 15 'Understanding …… other factors IS important. The subject of the verb is singular.

Author's response #8:

We have now corrected please see below:

Reviewer's comment #9:
p. 4, ll. 16-17 'Although odds ratios … may be well suited to the assessment of causality'. I am not sure this is so. Odds ratios will tell you about an association, and they will allow you to quantify the strength of an association, but I should not want to base policy interventions just on empirically derived odds ratios, without some kind of theoretical or substantive explanation as to why A might cause B.

Author's response #9:

Following the reviewer's comment we editing the sentence as follows:

Reviewer's comment #10:

p. 5, ll. 8-9'A patient registration … reason for attending.' This is not a sentence.

Author's response #10:

Following the reviewer's comment we edited the relevant sentence as follows:

Reviewer's comment #11:

p. 5, l. 17 Could you provide details of these lower limits for hazardous alcohol consumption in millilitres of pure alcohol or in 'units of alcohol' (where 1 unit is 10 ml pure alcohol).

Author's response #11:

In Australia, the key measure for determining alcohol consumption is the 'Australian Standard Drink', which contains 10 grams or 12.5 millilitres of alcohol. Patterns of alcohol consumption are expressed in terms of 'standard drinks'. In Australia, alcoholic beverages sold in containers are required by law to state the number of 'standard drinks' per container.

Current study, calculated the lower limits of the alcohol consumption based on the (average) number of standard drinks reported by the study participants i.e. 280 grams (or 350 millilitres) for men 140 grams (or 175 millilitres) for women.

Reviewer's comment #12:

p. 5, ll. 19-20 'men reporting sex with men in the past year'. It is redundant to state you have eliminated these people, as they are already eliminated as a result of the definition of heterosexual

given in p. 5, l. 13.

Author's response #12:

We agreed with the reviewer and change the sentence as follows:

Reviewer's comment #13:

p. 6, ll. 19-21 'PAR' should not be in italics here, for consistency with earlier mentions.

Author's response #13:

We made this correction throughout the manuscript.

Reviewer's comment #14:

p. 7, l. 7. Delete (p<0.001). The increase in the proportion of backpackers over time is just a fact and you are not wanting to infer anything from it.

Author's response #14:

Done.

Reviewer's comment #15:

p. 7, l. 9 Change 'gender' to 'sex'.

Author's response #15:

Done.

Reviewer's comment #16:

p. 7, ll. 12-15 The wording here is clumsy. I should re-write these lines to read 'backpackers were aged >25 years (58% vs 42%), had never married (94% vs 85%), were unemployed (27% vs 13%) were current smokers (39% vs 34%), reported excess alcohol consumption (17% vs 5%), reported 3 or more sexual partners in the past 3 months (26% vs 15%), reported sex in Thailand in the past 12 months (22% vs 9%), reported past Chlamydia diagnoses (15% vs 10%) and stated that the reason for'.

Author's response #16:

We would like to thank to the reviewer for this comment. We have re-written the paragraph as follows:

Reviewer's comment #17:

p. 8, ll. 3-6 The wording here is clumsy. I should re-write these lines to read 'backpackers were aged >25 years (63% vs 52%), had never married (92% vs 81%), were unemployed (26% vs 13%) were current smokers (42% vs 36%), reported excess alcohol consumption (27% vs 14%), reported two or more sexual partners in the past 3 months (31% vs 22%), reported sex in Thailand in the past 12 months (7% vs 4%), reported past Chlamydia diagnoses (13% vs 9%) and stated that the reason for presenting'.

Author's response #17:

We would like to thank to the reviewer for this comment. We have re-written the paragraph as follows:

Reviewer's comment #18:
p. 8, l. 12 A 95% confidence interval of 5%-6% around a point estimate described as 6% is not very helpful.

Author's response #18:

We would like thank to the reviewer for noticing this. Because of the large sample size confidence interval was narrow. There was also a "typo". Now we edited the relevant section by giving the exact numbers (without rounding) (and correcting the "typo") as follows:

Reviewer's comment #19:
p. 8, l. 18 Insert space between '3' and 'provide'.

Author's response #19:

Done.

Reviewer's comment #20:

p. 8, l. 22 Delete ']' after 'AOR'.

Author's response #20:

Done.

Reviewer's comment #21:

p. 8, l. 23 Change 'reporting 2 (AOR)' to 'reporting 2 (AOR = 2.11, 95% CI: 1.53-2.91)'.

Author's response #21:

We have done this correction as follows:

Reviewer's comment #22:

p. 9, l. 4 'past chlamydia diagnosis was not significant on multivariate analysis'. Neither was excess alcohol consumption, though you do not mention it.

Author's response #22:

Following the reviewer's comment we edited the relevant section as follows:

Reviewer's comment #23:

p. 9, ll. 14-15 The figure of 48% for non-backpackers is 50% in Table 4.

Author's response #23:

We would like to thank to the reviewer for noticing this typo. The correct number is 50%. We edited the relevant sentence as follows:

Reviewer's comment #24:

p. 9, l. 15 Change 'attributed to' to 'associated with'.

Author's response #24:

Following the reviewer's comment we edited the relevant section as follows:

Reviewer's comment #25:

p. 10, l. 11 Change 'has' to 'have'.

Author's response #25:

Done.

Reviewer's comment #26:

p. 11, l. 20 Change 'diagnoses' to 'diagnosis'.

Author's response #26:

Done:

Reviewer's comment #25:

p. 12, ll. 7-8 'one of the first attempts at a comprehensive study of the population impacts of risk factors for chlamydia infection'. It may well be one of the first attempts to calculate PARs, but there are some important studies of risk factors for Chlamydia which you do not cite. Some of these use methods different from yours to try to pin down the most important subgroups within the population at which interventions might be targeted. A non-exhaustive list is given below.

Author's response #25:

We would like to thank to the reviewer for providing these references for us. We agreed with the reviewer that these studies had the similar aims to our study i.e. determining the sub-groups of the population which have substantially elevated risks for chlamydia infection. The majority of these studies described differences in rates of chlamydia infection in ethnic groups (Low et al, 2001; Radcliffe et al, 2002; Fenton et al, 2005; Winter et al 2000). Fenton et al (2001) reported heterogeneity in the rates of self-reported chlamydia infection by gender.

However, the primary aim of the current study was to investigate the differences between the "travellers" (regardless of the ethnic background) and the "comparison group" (regardless of the ethnic background). Nevertheless, we incorporated these references in to the conclusion as follows:

Author's response #25 (continue):

Since the ~50% of the backpackers were born in England, we related our results with the studies relevant to this group and added the following section in the "Discussion" section:

Reviewer's comment #26:
p. 13, l. 1 Change 'Bristish' to 'British'.

Author's response #26:
We have now corrected this typo.

Reviewer's comment #27:
p. 13 References [10] to [14] are not cited in the text. Either cite them or delete them.

Author's response #27:

We now deleted them.

Reviewer's comment #28:

Table 1. Change the name of the variable from 'Sex in Thailand last 12 months' to 'Sex overseas in last 12 months'. Then amend the three categories to be 'In Thailand', 'In another country' and 'No sex overseas'.

Author's response #28:

Done.

Reviewer's comment #29:

Table 2. What do you mean by the category 'Consistent (always)' in relation to condom use in the past 3 months? Do you mean that the use is always consistent? Or do you mean that you define consistent use as 'always using a condom'? If the former, can you explain what you mean by consistent use? If the latter, I should relabel the categories to be 'Always' and 'Not always' and avoid using the term 'consistent' altogether.

Author's response #29:

Consistent condom use was defined as "always" (condom use). Therefore, (following the reviewer's comment) we re-labeled this variable as "always" vs. "not always" throughout the document.

Reviewer: 2

Reviewer's comment #1:

References 10-14 are not cited in the paper.

Author's response #1:

We have now deleted them.

Reviewer's comment #2:

Reference 10 is a conference paper, but this study has been published in Aust N Z J Public Health.

Author's response #2:

We deleted this reference .

Reviewer's comment #3:

The second paragraph reads as if it describes risk behaviours in young Australians, but the references cited are all about travellers. It would be useful to describe existing knowledge on the prevalence of risk factors in both backpackers and non-backpackers, and make it clear in the text which group is being described.

Reviewer's comment #3:

Following the reviewer's comment we edited the relevant section as follows:

Reviewer's comment #4:
This was an interesting and useful study and the manuscript is well written.

Author's response #4:
We would like to thank to the reviewer for this positive comment.

Reviewer's comment #5:
There were a few typographical errors in the manuscript, for example...
page 8, line 16 - the proportions of females presenting to the clinic for a
STI/HIV screen do not match the numbers in the table.

Author's response #5:
We would like to thank to the reviewer for noticing this typo. We have now corrected as follows:

Reviewer's comment #6:

page 8, line 59 - an AOR is missing

Author's response #6:

We added the missing information as follows:

Reviewer's comment #7:

page 10, line 28 - 'has' should be 'have'

Author's response #7:

We now edited the relevant sentence as follows:

Reviewer's comment #8:

page 10, line 30 - delete the word 'at'

Author's response #8:

Done:

Reviewer's comment #9:

page 11, line 5 - 'of' should be 'on'

Author's response #9:

Done:

Reviewer's comment #10:

Also, British English spelling should be used throughout, instead of American, e.g. traveller not traveler
and randomise not randomize.

Author's response #10:

We have done the suggested corrections by the reviewer throughout the manuscript.

Reviewer's comment #11:

I have two additional questions…
Firstly, in the discussion of health promotion strategies (page 11), can the authors think of any potential avenues for specifically reaching backpackers, rather than the general population?

Author's response #11:

In response to this comment we added the following text into the manuscript:

Reviewer's comment #12:

Secondly, could the authors provide an explanation for the high number of backpackers seen at this clinic? Does this site cater specifically for backpackers in some way, or is it normal for a sexual health centre in Sydney to have backpackers for nearly half of its clients? Discussing this would also be important in discussing the generalisability of the findings to populations outside of this clinic.

Author's response #12:

Response to the reviewer's comment we edited the Method and discussion sections as follows:

(Method)

(limitation)

Population attributable risk for chlamydia in young international travellers (backpackers) and residents in Australia

Reviewer 1: Hinde, Andrew

Andrew Hinde
Southampton Statistical Sciences Research Institute, University of Southampton, Southampton

The Study	Yes	No
Is the research question clearly defined?	✔	
Is the overall study design appropriate and adequate to answer the research question?	✔	
Are the participants adequately described, their conditions defined, and the inclusion and exclusion criteria described?	✔	
Are the patients representative of actual patients the evidence might affect?	✔	
Are the methods adequately described?	✔	
Is the main outcome measure clear?	✔	
Are the abstract/summary/key messages/limitations accurate?	✔	
Are the statistical methods described?	✔	
Are they appropriate?	✔	
Is the standard of written English acceptable for publication?		✔
Are the references up to date and relevant? (If not, please provide details of significant omissions below.)	✔	
Do any supplemental documents e.g. a CONSORT checklist, contain information that should be better reported in the manuscript, or raise questions about the work?		

If you answered No to any of the above, please supply details below.

The manuscript will require quite a bit of editorial attention. For example, in the article summary the authors describe a 'naval statistical methodology'. I think they mean a 'NOVEL statistical methodology'. Also, the use of proportions and percentages is inconsistent (see, for example, the Results section of the abstract, where confidence intervals are sometimes expressed using proportions and elsewhere using percentages). This is also the case on pp. 11 and 12 where percentages and proportions are mixed up (e.g. '65% (95% CI: 0.56-0.71)').

RESULTS AND CONCLUSION (For articles reporting research findings only)	Yes	No
Do the results answer the research question?	✔	
Are they credible?	✔	
Are they well presented?		✔
Are the interpretation and conclusions warranted by and sufficiently derived from/focused on the data?	✔	
Are they discussed in the light of previous evidence?	✔	
Is the message clear?	✔	

If you answered No to any of the above, please supply details below.
There are several infelicities of presentation, some of them are grammatical and editorial, and correcting them is a job for the editor of the journal. For example in many places the authors omit the indefinite article in the phrase 'not always using condom'; this should be 'not always using A condom'.

The following are substantive errors which need correcting. On page 7, l. 5 I do not understand what '(OR) (s)' and '(p) (s)' mean. On p. 9, in the results section, several numbers in the text are inconsistent with those in Table 1, e.g. in l. 12, '>25 years' should be '<= 25 years' and the percentages immediately following should be '56% vs 42%'). On p. 10, at the end of l. 6, the percentage should be '34%' not '24%'. On p. 12, 18, '2 or more male sexual partners' should be '3 or more male sexual partners'. In Table 3 the p value for 'not always' using a condom for young female heterosexual backpackers is missing.

Finally. I think equation (2) on p. 7 contains an error. The denominator of the middle expression has an extra '+1'. It should read just '$1+ SUM(p_s(OR_s -1))$'

REPORTING AND ETHICS	Yes	No
Is the article reported in line with the appropriate reporting statement or checklist (e.g. CONSORT)?		
Are research ethics (e.g. consent, ethical approval) addressed appropriately?		
Is the article free from any concerns about publication ethics (e.g. plagiarism, fabrication, redundant publication, undeclared conflicts of interest)?		

Comments
If you have any further comments for the authors please enter them below.

This is nearly there. The manuscript is a substantial improvement on the previous version, and the remaining revisions needed are very minor and just involve correction of a few numbers and typographical errors, plus editorial changes (i.e. correction of grammar). I do not think I need to see the manuscript again.

Reviewer 2: Lim, Megan

Megan Lim
Burnet Institute, Centre for Population Health

The Study	Yes	No
Is the research question clearly defined?	✔	
Is the overall study design appropriate and adequate to answer the research question?	✔	
Are the participants adequately described, their conditions defined, and the inclusion and exclusion criteria described?	✔	
Are the patients representative of actual patients the evidence might affect?	✔	
Are the methods adequately described?	✔	
Is the main outcome measure clear?	✔	
Are the abstract/summary/key messages/limitations accurate?	✔	
Are the statistical methods described?	✔	
Are they appropriate?	✔	
Is the standard of written English acceptable for publication?		✔
Are the references up to date and relevant? (If not, please provide details of significant omissions below.)	✔	
Do any supplemental documents e.g. a CONSORT checklist, contain information that should be better reported in the manuscript, or raise questions about the work?		✔

If you answered No to any of the above, please supply details below.

The major issue with this manuscript is that it needs careful editing and some correction is required. The most frequent error was in cases where 'consistent condom use' has been replaced by 'not always using a condom.' It should either be 'not always using condoms' or 'not always using a condom'. Occasionally this results in an incorrect sentence, for example; "The PAR findings suggest that the largest number of chlamydia infections could be avoided by increasing not always using condom."

The article summary says 'naval' instead of novel, and it is not clear what is being referred to by 'backpacker's status' - their status in what variable?

RESULTS AND CONCLUSION (For articles reporting research findings only)	Yes	No
Do the results answer the research question?	✔	
Are they credible?	✔	
Are they well presented?	✔	
Are the interpretation and conclusions warranted by and sufficiently derived from/focused on the data?	✔	
Are they discussed in the light of previous evidence?	✔	
Is the message clear?	✔	

REPORTING AND ETHICS	Yes	No
Is the article reported in line with the appropriate reporting statement or checklist (e.g. CONSORT)?	✔	
Are research ethics (e.g. consent, ethical approval) addressed appropriately?	✔	
Is the article free from any concerns about publication ethics (e.g. plagiarism, fabrication, redundant publication, undeclared conflicts of interest)?	✔	

Authors Response to Decision Letter for (BMJ Open-2010-000004.R1)

Population attributable risk for chlamydia in young international travellers (backpackers) and residents in Australia

Dear Editor,

We have edited the manuscript carefully and responded the reviewer's comments (changes were highlighted).

Reviewer's comment #1:

The manuscript will require quite a bit of editorial attention. For example, in the article summary the authors describe a 'naval statistical methodology'. I think they mean a 'NOVEL statistical methodology'.

Author's Response #1:

Done.

Reviewer's comment #2:

Also, the use of proportions and percentages is inconsistent (see, for example, the Results section of the abstract, where confidence intervals are sometimes expressed using proportions and elsewhere using percentages). This is also the case on pp. 11 and 12 where percentages and proportions are mixed up (e.g. '65% (95% CI: 0.56-0.71)').

Author's Response #2:

Following the reviewer's comment, we used the percentages consistently throughout the manuscript.

Reviewer's comment #3:

There are several infelicities of presentation, some of them are grammatical and editorial, and correcting them is a job for the editor of the journal. For example in many places the authors omit the indefinite article in the phrase 'not always using condom'; this should be 'not always using A condom'.

Author's Response #3:

We edited the relevant sections by replacing 'not always using condom' with 'inconsistent condom use'.

Reviewer's comment #4:

The following are substantive errors which need correcting. On page 7, l. 5 I do not understand what '(OR) (s)' and '(p) (s)' mean.

Author's Response # 4:

Odds Ratio(s) [OR(s)] and prevalence(s) [p(s)] are the measures to formulate the PAR. The detailed explanation was given on page 6 as follows:

PAR quantifies the potential impact of a risk factor on disease occurrence in the population [10,11]. The PAR is formulated as a function of odds ratio (*OR*) (s) and the prevalence (*p*) (s) of the risk factor(s). When there is only one risk factor at two levels (1 versus 0)

$$\text{PAR} = \frac{p(OR-1)}{p(OR-1)+1} = 1 - \frac{1}{\sum_{s=1}^{2} p_s OR_s} \tag{1}$$

Where OR is the odds ratios, p is the prevalence of the risk factor in the population and s indexes the two strata determined by the value of the risk factor. Equation 1 can be generalized to the multi-factorial setting when there are more than one risk factors at multiple levels, as

$$\text{PAR} = \frac{\sum_{s=1}^{S} p_s(OR_s - 1)}{1 + \sum_{s=1}^{S} p_s(OR_s - 1)} = 1 - \frac{1}{\sum_{s=1}^{2} p_s OR_s} \tag{2}$$

where OR_s and p_s, $s = 1,...,S$, are the odds ratios and the prevalences in the target population for the s th combination of the risk factors. Full PAR can be estimated by using Equation 2 and interpreted as the percent reduction expected in the number of HIV seroconversion if all the known risk factors were eliminated from the target population.

Reviewer's comment #5:

On p. 9, in the results section, several numbers in the text are inconsistent with those in Table 1, e.g. in l. 12, '>25 years' should be '<= 25 years' and the percentages immediately following should be '56% vs 42%). On p. 10, at the end of l. 6, the percentage should be '34%' not '24%'. On p. 12, 18, '2 or more male sexual partners' should be '3 or more male sexual partners'. In Table 3 the p value for 'not always' using a condom for young female heterosexual backpackers is missing.

Author's Response # 5:

We have corrected the relevant sections on pages 9-12. We have also added the missing p-value on page 3.

Reviewer's comment #6:

This is nearly there. The manuscript is a substantial improvement on the previous version, and the remaining revisions needed are very minor and just involve correction of a few numbers and typographical errors, plus editorial changes (i.e. correction of grammar). I do not think I need to see the manuscript again.

Author's Response # 6: Following the reviewer's comments we have edited the manuscript carefully.

REVIEWER #2:

Reviewer: Megan Lim

Research Associate

University College London

UK

Reviewer's comment #1:

The major issue with this manuscript is that it needs careful editing and some correction is required. The most frequent error was in cases where 'consistent condom use' has been replaced by 'not always using a condom.' It should either be 'not always using condoms' or 'not always using a condom'. Occasionally this results in an incorrect sentence, for example; "The PAR findings suggest that the largest number of chlamydia infections could be avoided by increasing not always using condom."

Author's Response # 1: We now used the phrase "inconsistent condom use" throughout the

manuscript.

Reviewer's comment #2:

The article summary says 'naval' instead of novel, and it is not clear what is being referred to by

'backpacker's status' - their status in what variable?

Author's Response # 2: We have now replaced "naval" with "novel". Backpacker's status is implies if

a person is a backpacker or not. We have edited the relevant sentence as follows:

- Results suggest that the majority of the chlamydia infections could be avoided by increased condom use, particularly among backpackers.

Authors Response to Decision Letter for (BMJ Open-2010-000004.R2)
Population attributable risk for chlamydia in young international travellers (backpackers) and residents in Australia

RESPONSE TO THE MANAGING EDITOR:

Managing Editor's Comments to Author:
The text above equation 1 confused the reviewers and I think this was because it is not clear that the (s) is meant to refer to the possibility of plurals (odds ratios and prevalences). In fact as you subsequently define 'odds ratios' as (OR) in the line below equation 1, and don't include the (s) in the equation, it seems that these - (s) - can be deleted for clarity.

Authors Response:
Done.

Managing Editor's Comments to Author:
Some of the problems surrounding the text seemed to occur due to use of the 'find and replace' function. It looks like one still remains: p8 states 'The same proportion of male backpackers and non-backpackers inconsistent condom in the past three months (69%)[2].' Please correct this sentence as needed.

Authors Response:
Thank you for noticing this typo. We edited the relevant sections (please see track changes).

Managing Editor's Comments to Author:
I note your reversion to the use of the terms 'consistent/inconsistent' despite the concerns over the use of this term raised by the reviewers of version 1. 'Consistent use' could be interpreted as meaning 'being used in a consistent way' rather than 'always being used'; similarly 'inconsistent use' could be interpreted as meaning 'being used in different ways' rather than 'not always being used', which is the sense in which you seem to mean it. If you are satisfied that the text unambiguously conveys your meaning then please leave it as it is; however you may wish to revisit the review of version 1 to consider whether or not 'not always using a condom' is more accurate than 'inconsistent condom use'.

Authors Response:
After a group discussion, we decided to use the term "inconsistent condom use".