Respondent driven sampling methodology for estimating Hepatitis C epidemiology in people who inject drugs: a systematic review

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Review question(s)
What are the characteristics of successful respondent driven sampling studies estimating Hepatitis C epidemiology in people with a history of injecting drug use?

Searches
Electronic searches of published literature will be performed using: Medline, Scopus and Web of Science online databases.

A further citation search will be conducted through the Web of Science database and all included papers.

In an effort to identify grey literature the following conference websites will be searched for abstracts and posters: European association for study of the Liver (EASL), British Association for study of the liver (BASL), American association for study of the liver (AASLD), American Public health association (APHA) and infectious disease society of America (IDSA). Search phrases in these settings will vary depending on the available search functionality of the respective website.

The researchers will also contact leaders in the field of RDS to ask if they are aware of unpublished work or studies in the process of publication. These experts will also be sent a copy of included studies in case they can recommend publications which have been missed by the search strategy.

Following the scoping search results search terms will be kept to just “RDS” or “respondent driven sampling”, searches including Hepatitis C and injecting drug users were too specific.

Searches will be limited to English language publications.

Types of study to be included
Any study using respondent driven sampling and meeting the other inclusion criteria will be considered for inclusion in the review.

Condition or domain being studied
There are an estimated 150 million people living worldwide with chronic Hepatitis C. In recent decades an epidemic has occurred within injecting drug users. Respondent driven sampling is a chain referral system that is used to access hard to reach populations such as sex workers and injecting drug users. The reduced risk of bias that is associated with this technique when compared to other sampling strategies allows estimation of disease incidence and prevalence within a previously hidden population. A detailed understanding of the epidemiology of HCV allows for better prediction of the future morbid and financial burden on health economies, it also allows targeted treatment and prevention strategies for those most at risk of the infection. This review will examine existing literature where RDS has been used to reveal the epidemiology of HCV within people who inject drugs.

Participants/ population
People with a history of injecting drug use

**Intervention(s), exposure(s)**
Papers using Respondent Driven Sampling methodology to identify people with a history of drug use for interview and testing for Hepatitis C

**Comparator(s)/ control**
Not applicable.

**Outcome(s)**

**Primary outcomes**
A description of methodological characteristics that are associated with successful Respondent driven sampling in people with a history of injecting drug use. Specifically:

1) What level of incentive is used?
2) What is the estimated design effect?
3) Do studies achieve the required sample size or reach the required number of recruitment waves?
4) Do studies reach equilibrium with regard to weighted estimates for variable frequency?
5) Was the study able to estimate prevalence or incidence of HCV in the wider people who use drugs network?

**Secondary outcomes**
None

**Data extraction, (selection and coding)**
In accordance with PRISMA guidelines selected titles will be put into Mendeley citation manager and duplicates will be removed. Two researchers will then independently review the titles and abstracts using the shared group setting on Mendeley. Papers will be assessed against an inclusion criteria assessment tool. Discrepancies will be reviewed by both researchers together and a third party to act as an adjudicator and considered for inclusion. Full papers will be reviewed with a data extraction tool. A citation search will be conducted of included papers.

**Risk of bias (quality) assessment**
Two reviewers will screen studies for eligibility, and a third reviewer will assist in resolving disagreements. To reduce publication bias, leaders in the field will be contacted directly to enquire about unpublished work.

**Strategy for data synthesis**
We will provide a narrative synthesis of the findings from the included studies, this will include, target population characteristics, the success of the study and specific methodological characteristics.

Associations between methodology and study success will be analysed statistically using the Mann-Whitney U test.

We anticipate that there will be limited scope for meta-analysis because of the range of different outcomes measured.

**Analysis of subgroups or subsets**
None planned

**Dissemination plans**
The plan is to publish this review in an English language journal

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10 March 2015

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Conflicts of interest
None known

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English

Country
England

Subject index terms status
Subject indexing assigned by CRD

Subject index terms
Drug Users; Hepacivirus; Hepatitis C; Humans

Stage of review
Ongoing

Date of registration in PROSPERO
07 April 2015

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<table>
<thead>
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<th>Stage of review at time of this submission</th>
<th>Started</th>
<th>Completed</th>
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<tbody>
<tr>
<td>Preliminary searches</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>Piloting of the study selection process</td>
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<td>Formal screening of search results against eligibility criteria</td>
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Data extraction | No | No
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Risk of bias (quality) assessment | No | No
Data analysis | No | No

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