Improved effectiveness of partner notification for patients with sexually transmitted infections: systematic review
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CRD summary
This review concluded that involving index patients in shared responsibility for the management of sexual partners, in particular patient delivered partner therapy, home sampling and providing additional information for partners, improves results. However, some caution is required given the poor quality of the included studies and differences between treatment arms that go beyond partner notification methods.

Authors' objectives
To evaluate the effectiveness of methods to improve partner notification in patients with sexually transmitted infections (STIs).

Searching
MEDLINE, EMBASE, CINAHL, PsycINFO, SIGLE, the Cochrane Library and DARE were searched from January 1990 to December 2005. In addition, reference lists of studies and two research registers (international standard randomised controlled trial number and ClinicalTrials.gov) were screened. No language restrictions were applied and the search strategy was reported.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were eligible for inclusion in the review.

Specific interventions included in the review
Studies comparing simple patient referral with patient referral supplemented by methods aimed at improving its effectiveness were eligible for inclusion. Patient referral was defined as the index patient having the responsibility of informing their sexual partners about the infection and advising them to seek treatment. The included studies investigated the effects of providing the index patient with a drug or a prescription for the partner(s); providing index patients diagnosed with chlamydia with sampling kits for the partner(s); providing additional information for the index patient (various methods of delivery) and/or their partner(s); or used a combination of these methods. Some interventions appeared to involve more materials, such as condoms or reimbursements, which were not given to the control groups. Most of the studies were conducted in the USA; other studies were conducted in Africa and Denmark.

Participants included in the review
Studies of patients with any type of STI were eligible for inclusion. The patients in the included studies were infected with gonorrhoea, chlamydia, trichomoniasis, non-specific urethritis and syndromically diagnosed infections. The mean age in the included patient subgroups ranged from 23 to 29 years old. Some studies enrolled only women, some only men, but most included men and women.

Outcomes assessed in the review
The primary outcome measure was the reduction of incidence or prevalence of STIs in index patients. The secondary outcomes were the number of partners treated, the number of partners tested or testing positive, and the number of partners notified, located or elicited.

How were decisions on the relevance of primary studies made?
Two reviewers independently screened the search results. Any disagreements were resolved by discussion.
Assessment of study quality
Two reviewers independently assessed the validity of the studies in relation to the following: allocation sequence; concealment of allocation; differences in the treatment and control groups; completeness of outcome definition; blinding of the outcome assessors; intention-to-treat analysis; and the number and handling of withdrawals. Any disagreements were resolved by discussion.

Data extraction
Two reviewers independently extracted data on study details, primary and secondary outcomes, and adverse effects. The mean numbers per index case were extracted from the individual studies. Where proportions were reported, 95% confidence intervals (CIs) and two-sided p-values were calculated.

Methods of synthesis
How were the studies combined?
The studies were grouped by type of intervention. Studies investigating the same intervention were combined in a random-effects meta-analysis to determine summary risk ratios (RRs) with 95% CIs. Studies not suitable for meta-analysis were combined in a narrative. Funnel plots were examined and small study effects were tested.

How were differences between studies investigated?
Statistical heterogeneity was investigated using Cochran's Q test and by calculating the I-squared statistic. Differences between the studies were discussed in the text.

Results of the review
Fourteen studies (n=12,389) were included in the review.

All included studies had methodological weaknesses. For example, only 4 trials reported an adequate method of generating a random allocation sequence, only 2 trials had adequate concealment of allocation, and only 1 trial reported blinding of the outcome assessors.

Patient delivered partner therapy.
Patient delivered partner therapy showed a significantly reduced risk of persistent or recurrent infection in index patients with chlamydia or gonorrhoea compared with control (pooled RR 0.73, 95% CI: 0.57, 0.93; based on 5 trials), but there was no effect in a trial of patients with trichomoniasis. There was no difference in the proportions of patients with persistent or recurrent infection between the provision of information for partners and patient delivered therapy (2 trials).

Providing additional information. One of 2 trials that provided the index patients with written material for the partner showed a significantly reduced proportion of index cases with recurrent or persistent infections, compared with simple referral in men with gonorrhoea or chlamydia (5% versus 12%, p<0.01); the other trial in women with trichomonas reported no significant difference between interventions. One of 2 studies evaluating an interactive question and answer session reported a significant increase in the proportion of index cases, with at least one partner notified using a health voucher in addition to the question and answer component (92% versus 67%, p<0.001); the other study reported no increase in partners treated with the intervention. Combinations. Two studies reported positive effects: one reported a greater proportion of index patients with at least one partner notified with one-to-one counselling, while the other reported more treated partners per index patient with verbal health education plus individual counselling. The other 2 studies reported no differences between interventions and controls. Home sampling (in index patients with chlamydia). Providing patients with sampling kits to collect specimens plus pre-paid envelopes to the surgery increased the number of tested and identified infected partners in both identified trials. Neither of the 2 trials covering adverse effects reported more negative effects in the intervention group (e.g. more quarrelling between partners).

Authors' conclusions
The involvement of index patients in shared responsibility for the management of sexual partners, in particular patient delivered partner therapy, home sampling and providing additional information for the partners, improved results.

CRD commentary
The review addressed a clear research question and had clearly defined inclusion criteria. The search encompassed a number of electronic databases and research registers and this, and the lack of language restrictions, reduced the risk of publication and language bias. The included interventions were relatively complex and covered a number of different settings; additional information was available in the draft of the full report published on the web (accessed 24/08/2007; see Other Publications of Related Interest). The quality of the included studies was documented, thus allowing a more complete picture of the evidence base.

The analyses were comprehensible, with the studies pooled only where appropriate. The reviewers undertook measures to reduce errors and bias throughout the review process. The conclusions follow from the results of the individual studies, but some caution is required given the poor quality of the included studies and the possible further differences between the intervention and the control aims (e.g. provision of additional material), as the authors discussed.

Implications of the review for practice and research
Practice: The authors stated that patient delivered partner therapy, home sampling for partners, and providing additional information for partners should be considered by health care professionals.

Research: The authors stated that RCTs of partner notification should follow standards of conduct and reporting. There is also a need for interventions to improve rates of patient referral for syphilis and the human immunodeficiency virus.

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.