Authors' objectives
To examine the effectiveness of alternative partner notification strategies for gonorrhoea, chlamydia, syphilis, HIV and hepatitis B using the standardised approach of the Community Health Practice Guidelines Working Group.

Searching
Bibliographic databases, including MEDLINE, EMBASE and SciSearch were searched. Additional literature was obtained by manually searching five key journals, and by contacting over 80 key informant. No date or language restrictions were provided.

Study selection
Study designs of evaluations included in the review
Studies were included if the target population consisted of partners of patients with gonorrhoea, chlamydia, syphilis, HIV or hepatitis B; at least two partner notification strategies were compared; and any of the following outcomes were reported - partners identified, partners were notified, partners presented for care, partners tested positive or partners were treated, costs, or ethical consequences. Studies with either concurrent or historical controls were included, provided sufficient data were reported to determine the relative effectiveness of the partner notification strategies that were compared.

Specific interventions included in the review
Three different partner notification strategies were compared: the referral process, including provider or conditional referral with patient referral, and intensive provider referral with routine provider referral; trained interviewers with routine care providers; and patient assistance directed at facilitating patient referral.

Participants included in the review
Persons with gonorrhoea, chlamydia, syphilis, HIV or hepatitis B and their partners.

Outcomes assessed in the review
Studies were assessed on one of three outcomes, either the number of partners with a positive culture, the number of partners presenting for care, or the number of partners identified.

How were decisions on the relevance of primary studies made?
Decisions of relevance were agreed by two independent reviewers, with any minor disagreements resolved by consensus.

Assessment of study quality
The validity of the studies was assessed through detailed criteria concerning methodological rigor, specifically sources of bias. These included: dissimilarity of the comparison groups; errors in the allocation or ascertainment of exposure to the intervention; errors in the measurement of outcomes; and the response rate for eligible index patients. The studies were rated as strong, moderate or weak on each of the criteria, and were quantitatively summarised by each reviewer to determine the overall strength of the study. Validity was independently assessed by two reviewers.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the authors performed the data extraction.
Methods of synthesis

How were the studies combined?
Studies assessed as comparable through the methodological quality analysis were combined using the DerSimonian and Laird method (see Other Publications of Related Interest). No adjustment was made for index patients having more than one partner, resulting in the possibility that the confidence intervals (CIs) may overestimate the precision of the ratio differences reported.

How were differences between studies investigated?
The review did not calculate a test for heterogeneity, but potential sources of heterogeneity were investigated. Variations in the methodological quality of the studies were assessed through an analysis of the possible sources of bias. In addition, differences between the sexually transmitted diseases, such as infectious period, risk of complications, availability of effective treatment and epidemiology of the diseases, necessitated separate analysis. The effect of partner notification strategies were analysed for 4 disease groups: gonorrhoea and chlamydia, syphilis, HIV infection, and hepatitis B.

Results of the review

Twelve comparative studies and one ongoing randomised controlled trial were included in the review; of these, 7 studies reported the number of notified partners with a positive culture or test and 6 provided data on costs. Only 2 provided data on the number of partners treated, and none provided data on the number of cases cured or prevented, or on ethical, legal or social consequences.

For gonorrhoea and chlamydia, conditional referral compared to patient referral had an insignificant ratio difference (RD) of 0.05 (95% CI: -0.10, 0.21) based on a meta-analysis of 2 studies, whilst that for provider referral compared to patient referral was significant with an RD of 0.006 (95% CI: 0.02, 0.10), though it was based on 1 study. The RD of partners assessed per index patient for provider referral, compared to patient referral, was significantly high at 0.52 (95% CI: 0.44, 0.59), based on 1 study. Weak evidence indicated that trained interviewers identified more partners than routine providers, but measures could not be combined due to non-comparability of the studies. Studies of patient assistance showed no significant change in patient referral for index patients shown an educational video. In 1 study, a significant effect on the number of partners presenting for care per partner identified was shown for patients receiving a referral card and telephone follow-up, compared to counselling only, with an RD of 0.34 (95% CI: 0.13, 0.56). In contrast, the same study showed a referral card and a US$3.00 incentive had a non significant effect on the number of partners presenting for care per partner identified, RD 0.04 (95% CI: -0.22, 0.30). A separate single study showed that information pamphlets were less effective than routine interview in terms of the number of partners presenting for care (RD -0.05, 95% CI: -0.07, -0.03), and equivalent in terms of the number of partners with a positive culture per index patient (RD 0.01, 95% CI: -0.04, 0.06).

For syphilis, there was weak evidence that intensive provider referral was more effective than routine provider referral from an ecological study in 1948, and trained interviewers identified more partners than physicians in a before-and-after study from 1970.

Provider referral with field notification had a significant effect on partner notification, compared with patient referral, for HIV-positive patients with an RD of 0.43 (95% CI: 0.34, 0.52), based on 1 study.

No comparative studies were found for partner notification for patients with hepatitis B.

Cost information
Comparative and actual cost information was presented for certain primary studies and hypotheses. No economic analysis was undertaken.

Authors' conclusions
Limited conclusions regarding effectiveness of different approaches to partner notification can be drawn from the available evidence: (1) there is strong evidence that simple forms of patient assistance directed at improving patient
referral, such as a telephone call, can be effective; (2) moderately strong evidence indicates that provider referral results in more partners being notified than patient referral for HIV infection; (3) there is weak evidence that provider or conditional referral is more effective than patient referral for syphilis; (4) there is conflicting evidence regarding the effectiveness of provider and conditional referral, compared with patient referral, for gonorrhoea and chlamydia; (5) there is weak evidence that trained interviewers are more effective than routine health care providers at identifying partners, but no evidence that this has practical benefits. There is evidence that further research is required.

**CRD commentary**
The review provides an adequate overview of the evidence concerning partner notification for sexually transmitted diseases, adhering to many of the qualities of a good systematic review. The objective, participants, interventions, outcomes, inclusion and quality criteria (and their application) of the review are clearly stated. Certain weaknesses are evident. Assessment of the adequacy of the literature search strategy would benefit from information on restrictions on language, date or type of publication. No information was provided on the extraction of the data from the primary studies. Limited information was provided about the primary studies, such as the number of patients and partners, drop-outs from the studies, and other patient details. The lack of information, and the strength of the evidence presented, limit the conclusions that can be made concerning partner notification.

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**Other publications of related interest**

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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.