Contact tracing for STIs

New resources and supportive evidence

Siobhan Reddel
Natalie Edmiston

Background

Contact tracing of sexual partners is an important part of the clinical management of sexually transmissible infections (STIs) and initiation of contact tracing is the responsibility of the diagnosing clinician. Research has shown that some general practitioners would like to improve their skills in this area.

Objective

This article outlines new resources and evidence to assist GPs to initiate contact tracing when a patient is diagnosed with an STI.

Discussion

Most STIs are diagnosed in general practice so the involvement of GPs in contact tracing is crucial. The aims of contact tracing are to prevent re-infection of the index case, minimise complications and reduce the population prevalence of STIs in the community. Contact tracing begins with a conversation with the index patient about informing their sexual partner(s). The patient can then decide to inform their own contacts (patient referral) or organise for someone else to inform them (provider referral). Initiating contact tracing in general practice can be particularly effective if the resources and methods are tailored to the specific needs of the index patient. New resources provide clearer guidelines and tools to assist GPs in this area.

Keywords

sexually transmissible infections; contact tracing; general practice

Case study

Frank, 28 years of age, presents to a general practitioner he has not seen before, with a history of purulent urethral discharge for 1 week. The GP explains to Frank that most causes of urethral discharge are sexually transmitted and asks him about his recent sexual contacts. Frank is running late for work and has difficulty concentrating on his sexual history. He discloses that he has a regular female partner but says, 'I know where I got this.' He denies same-sex contacts.

On examination Frank has a purulent urethral discharge which the GP collects for microscopy and culture for gonorrhoea. She also sends a first void urine sample for nucleic acid amplification testing for chlamydia and gonorrhoea and treats him for urethritis with azithromycin and ceftriaxone. She also gives him a request form to have serology for human immunodeficiency virus (HIV), hepatitis B and syphilis. The GP asks Frank to abstain from sex for a week until he sees her again to discuss the results.

On his return, the GP advises Frank that his tests show both chlamydia and gonorrhoea. She explains that both of these infections have been treated but that sexual contacts will need treatment too. She explains that the first person who needs to be advised is his regular partner. 'She needs to be checked for her own health but this is also important so that you don't get the infections back.' Frank agrees to tell her himself.

The GP enquires about Frank's other partners over the past 6 months and Frank discloses that he had sex with a woman he met in a bar in Bangkok 2 weeks ago and that he has had two other brief relationships with female partners 3 and 4 months ago. The GP explains that the woman from the bar should be informed about her risk of chlamydia and gonorrhoea, whereas the two previous girlfriends should be advised about the risk of chlamydia. Frank is initially confused as to why the ex-girlfriends need tracing and treatment but the GP explains that, while his symptoms were probably a result of the recently acquired gonorrhoea infection, he may have had asymptomatic chlamydia infection for some time. She explains that his ex-girlfriends may unknowingly have chlamydia and be at risk of pelvic infection or infertility. Frank has a name and a contact method (mobile number or email address) for all three and accepts the offer of provider referral for the

woman from Bangkok. The GP explains that she will pass the details to her local sexual health clinic to facilitate the process.

The GP shows Frank the 'Let them know' website, which demonstrates how to tell partners directly or how to SMS or email partners with or without disclosing a name. He seems interested in this option for his previous girlfriends.

Frank's blood results are all negative, but the GP explains that he is still in a window period for testing. He should use condoms and have another blood test in about 3 months. He should also be re-tested for chlamydia in 3 months. She asks Frank if it would be okay for her to call him in 2 weeks and see how he has gone telling his partners, and also to put him on the system for recall in 3 months. He agrees to this. When she calls, Frank reports that his regular partner has been informed and treated and that his ex-partners have been anonymously contacted. The GP thanks him and reminds him to attend for repeat testing.

In 2010, there were over 74 000 newly diagnosed cases of chlamydia infection in Australia, a steady increase over previous years.[1] In addition, other sexually transmissible infections (STIs) including HIV, gonorrhoea and syphilis remain a significant issue in certain communities, predominantly among men who have sex with men (MSM). Contact tracing (also called 'partner notification') is an essential component of the effective management of STIs.

The aim of contact tracing is to reduce re-infection and complications of disease and to reduce the population burden of STIs.[2] Many STIs are asymptomatic so contact tracing can be an important means of identifying patients at risk. Contact tracing also helps identify males with an STI. This is important because males are less likely to present for chlamydia screening.[3]

Recent research has found that some general practitioners do not feel adequately skilled in the area of contact tracing and would like clearer guidance on best practice.[4–6] Ensuring that GPs have appropriate skills and knowledge in this area has the potential to help facilitate effective management of STIs in the community.

A questionnaire study of 65 Queensland GPs suggested that some GPs may not be aware of their contact tracing responsibilities.[7] Importantly, for all STIs the diagnosing practitioner is responsible for initiating a discussion about informing sexual contacts.[8] Another potentially confusing area is the role of disease notification to a public health unit and whether or not this includes contact tracing. State differences in levels of intervention by public health units in this process may have contributed to this confusion. However, in most Australian states and territories, public health units now only proactively support the contact tracing of rarer STIs, not chlamydia.

This article aims to clarify the process of contact tracing and update the general practitioner on the evidence and available resources. Resources for both GPs and patients are outlined in *Table 1*.

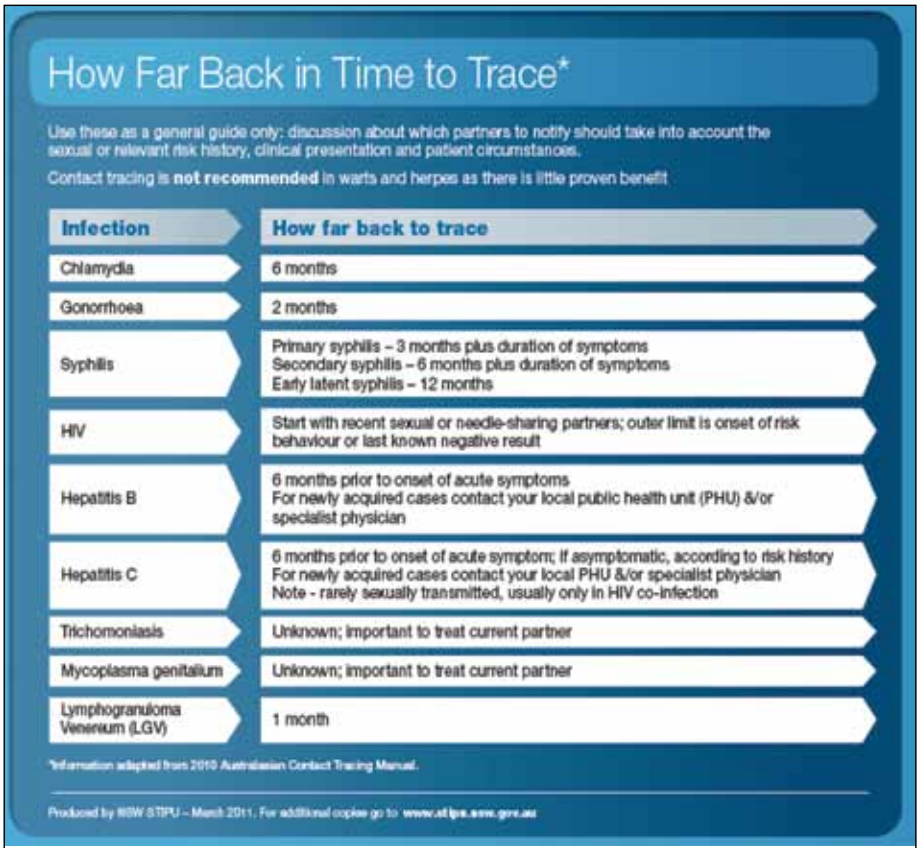
Methods of contact tracing

Contact tracing begins with a conversation with the index patient about informing their partners.[6] From here, the patient can decide to inform their own contacts (patient referral) or organise for someone else to inform them (provider referral). Patient referral is the most common type of contact tracing used in general practice. For this type of contact tracing to be successful, it is important that the GP informs the patient about who needs to be informed and what information needs to be given.[5,9,10] The most common STI requiring contact tracing diagnosed by GPs is chlamydia and patient referral is usually adequate for patients with this diagnosis. If the patient elects for provider referral, the GP can collect the contact person's details and either notify the contacts themselves, or pass the details to a practice nurse or a sexual health clinic who can undertake this.

Both methods can be anonymous or not, and both can employ a range of techniques including in person, telephone, SMS, email or letter. With either method, a nonjudgemental approach and a trusting patient-doctor relationship is likely to give the patient reassurance of confidentiality and result in more effective outcomes.[11,12] Importantly, different methods may be appropriate for different partners of a single index patient. Patients are usually willing to inform regular partners, however more assistance, including provider referral, may be appropriate for casual or ex-partners or particular index patients.[13–17]

Table 1. Resources for GPs and patients

For GPs
The NSW Health sponsored STI Contact Tracing Tool for General Practice is available at www.stipu.nsw.gov.au.titan.brightlabs.com.au/content/Image/May_2011_Contact_tracing_tool_final_version.pdf. It includes step-by-step guidelines on how to conduct contact tracing, how far back to trace as well as FAQs, contact management and links to other resources
The new Australasian Contact Tracing Manual is available at http://ctm.ashm.org.au. It discusses legal issues and provides sample letters, case studies and handouts
The Western Australian Government Silver Book http://silverbook.health.wa.gov.au has guidelines on the management of STIs including contact tracing
A register of regional sexual health centres is available at www.racp.edu.au/page/sexual-health-publications
www.thinkgp.com.au has an interactive education activity: STI Contact Tracing for General Practice
For patients
www.letthemknow.org.au (developed by the Melbourne Sexual Health Centre) contains information and practical tips as well as a facility for patients to inform contacts via email, SMS or letter
http://thedramadownunder.info has information about STIs for men who have sex with men. Contacts can be also by notified by email or SMS via this site



How Far Back in Time to Trace*

Use these as a general guide only: discussion about which partners to notify should take into account the sexual or relevant risk history, clinical presentation and patient circumstances.

Contact tracing is **not recommended** in warts and herpes as there is little proven benefit

Infection	How far back to trace
Chlamydia	6 months
Gonorrhoea	2 months
Syphilis	Primary syphilis – 3 months plus duration of symptoms Secondary syphilis – 6 months plus duration of symptoms Early latent syphilis – 12 months
HIV	Start with recent sexual or needle-sharing partners; outer limit is onset of risk behaviour or last known negative result
Hepatitis B	6 months prior to onset of acute symptoms For newly acquired cases contact your local public health unit (PHU) &/or specialist physician
Hepatitis C	6 months prior to onset of acute symptom; if asymptomatic, according to risk history For newly acquired cases contact your local PHU &/or specialist physician Note - rarely sexually transmitted, usually only in HIV co-infection
Trichomoniasis	Unknown; important to treat current partner
Mycoplasma genitalium	Unknown; important to treat current partner
Lymphogranuloma Venereum (LGV)	1 month

*Information adapted from 2010 Australasian Contact Tracing Manual.

Produced by NSW STIPU – March 2011. For additional copies go to www.stipu.nsw.gov.au

Figure 1. How far back in time to trace
Reprinted from the STI Contact Tracing Tool for General Practice with permission from the NSW Health STI Programs Unit. Available at www.stipu.nsw.gov.au.titan.brightlabs.com.au/content/Image/May_2011_Contact_tracing_tool_final_version.pdf

Discussing contact tracing with patients

When discussing contact tracing with patients it is important to cover the reasons for tracing and provide an explanation about the fact that most chlamydia infections are asymptomatic, identify which patients need tracing, and provide referral support and follow up.

Reasons

Outline the reasons for contact tracing: 'It's important your partner(s) get treated so you don't get infected again.' Well informed patients are more likely to tell partners than those not given an explanation of the reasons for contact tracing.[8,18]

Explanation

Explain that most infections with chlamydia are asymptomatic: 'Most people with an STI don't know that they have it because they don't have any symptoms, but they could still have complications and pass it on to a partner.' Patients may be less likely to inform a perceived transmitter because they believe the perceived transmitter was aware of the infection,[19] so reminding patients that most STIs are asymptomatic may help with contacting of past partners.

Identification

Help identify which partners need tracing. It is important that the GP guides the patient to help identify the appropriate people to contact as patients may misjudge or bias which partners they mention.[20] *Figure 1* outlines consensus guidelines on how far back to trace. Using interviewing cues such as asking about locations and events can improve identification of all partners that need tracing.[21,22] Eliciting and recording names or tallies of number of contacts to be advised may also increase the number of contacts advised.[23]

Explain the methods and offer choice. Most studies suggest that while provider referral is more effective than patient referral, provider referral is much more resource intensive.[24] It is important to outline both methods and recognise when each is more appropriate. Patients generally prefer patient referral for regular partners; provider referral may be more effective for casual, ex or incarcerated partners (*Figure 2*).[14–16] Provider referral may also be appropriate for HIV, syphilis and gonorrhoea due to higher morbidity and need for greater involvement in after care.[8,25,26] Repeat infections may indicate that the partner was not appropriately treated the first time and that the index patient requires support with contact tracing.[27,28]

Referral

Support patient referral. If patient referral is selected, it is important to support this by supplementing verbal information given to patients with specific information on STIs (written or web links).[29] Specific treatment letters have been shown to improve contact tracing rates and enable contacts to be appropriately treated at their place of choice.[30,31] While online notification tools are available, Hopkins et al[32] showed that the majority of patients chose to inform partners, especially regular partners, via telephone or face-to-face. However, online notification, either self initiated or via a sexual health clinic, may be relevant for index patients with multiple partners, particularly MSM who have sourced partners online.[33]

Follow up

Arrange follow up. Tactful follow up may be one of the most simple and effective interventions in contact tracing.[8] A practice nurse could be employed to make a follow up telephone call 1–2 weeks after diagnosis, and there is evidence that simply scheduling the call is motivating.[34–36] For many STIs a repeat test is recommended, and this may be the appropriate time to check on the progress of contact tracing.

Is patient delivered partner therapy an option?

Patient delivered partner therapy (PDPT) is providing a prescription or medication to

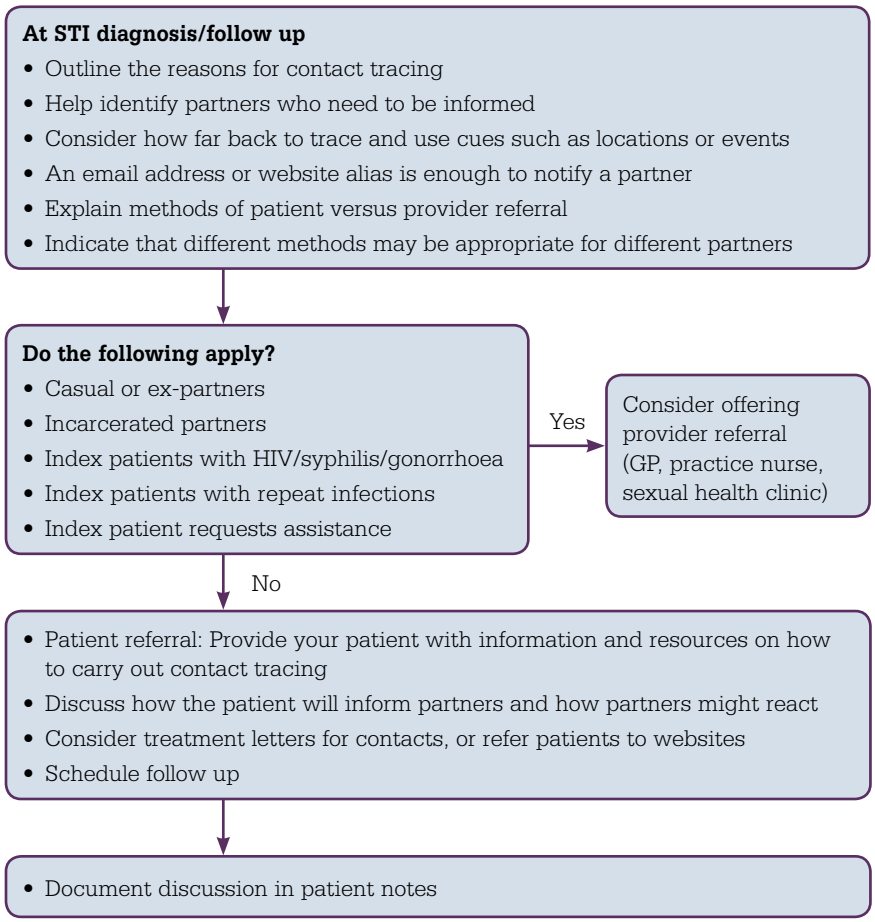


Figure 2. How to trace flow chart
Adapted from the STI Contact Tracing Tool for General Practice with permission from the NSW Health STI Programs Unit. Available at www.stipu.nsw.gov.au.titan.brightlabs.com.au/content/Image/May_2011_Contact_tracing_tool_final_version.pdf

a patient to give to their partner, without the partner having been seen for a medical consultation. In one Australian study almost half the GPs reported 'sometimes' or 'always' using PDPT for chlamydia.[5] However GPs often express mixed feelings about this course of action given the lack of specific guidelines or legislation.[4,5] The Sexual Health Chapter of the Royal Australasian College of Physicians has a working group developing guidelines and is planning negotiation with The Royal Australian College of General Practitioners and the Pharmacy Guild, but legislation change has some way to go. In the meantime, while PDPT may be an option for some, particularly patients with repeat chlamydial infection, it is not recommended for MSM index patients where offering the contacts testing for other STIs is a priority.[37]

GP concerns

General practitioners have raised concerns that it is difficult to fit contact tracing into a standard consultation.[9] Certainly there are multiple issues to cover when seeing a patient with a new diagnosis of an STI, including those relating to the patient's own physical and emotional health. It can be useful to set the scene for contact tracing early in the discussion about the infection. Once the patient's treatment and concerns are addressed, return to discussing how sexual contacts will be notified. In many cases, a long consult or a subsequent appointment may be required. Practice nurses can assist in provider referral, or making follow up telephone calls.

Some GPs have raised concerns that asking a patient to inform contacts may affect the patient-doctor relationship.[8,14] However, research suggests that almost all patients found the experience better or at least no worse than expected[38] and that patients expressed the feeling that it's 'the right thing to do'.[39] If a patient is concerned about potential violence when informing a contact, then provider referral is recommended.

Where confidentiality is difficult, such as in rural settings,[5,9] GPs can refer to regional sexual health clinic staff for assistance (*Table 1*).

Key points

- Contact tracing is an integral part of the management of an STI.
- It is the responsibility of the diagnosing clinician to initiate contact tracing.
- Contact tracing begins with a conversation with the index patient about informing their partners. The patient can then decide to inform their own contacts (patient referral) or organise for someone else to inform them (provider referral).
- Initiating contact tracing in general practice can be particularly effective if resources and methods are tailored to the specific needs of the index patient.

Authors

Siobhan Reddel BA, MBBS, MIMH, MAppEpid, FRACGP, is a general practitioner and epidemiologist, Burnet Instiute, Melbourne, Victoria. siobhan@burnet.edu.au

Natalie Edmiston MBBS, MPH, FAChSHM, is staff specialist, Sexual Health Service, Lismore, New South Wales.

Conflict of interest: The NSW STI Programs Unit provided funding to the Burnet Institute for travel expenses and payment for writing the manuscript. Siobhan Reddel is employed by the Burnet Institute.

References

1. The Kirby Institute. HIV, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2011. The Kirby Institute, the University of New South Wales, Sydney.
2. Turner K, Adams E, Grant A, et al. Costs and cost effectiveness of different strategies for chlamydia screening and partner notification: an economic and mathematical modelling study. BMJ 2010;341:c7250.
3. Sawleshwarkar S, Harrison C, Britt H, Mindel A. Chlamydia testing in general practice. Sex Health 2010;7:484–90.

4. Pavlin NL, Parker RM, Piggin AK, et al. Better than nothing? Patient-delivered partner therapy and partner notification for chlamydia, the views of Australian general practitioners. BMC Infect Dis 2010;10:274.
5. Bilardi J, Hopkins CA, Fairley CK, et al. Innovative resources could help to improve partner notification for chlamydia in primary care. Sex Transm Dis 2009;36:799–83.
6. Chen M, Bilardi J. Partner management for sexually transmissible infections: better options and guidelines please. Sex Health 2011;8:1–2.
7. Heal M, Muller R. General practitioners' knowledge and attitudes to contact tracing for genital Chlamydia trachomatis infection in North Queensland. Aust N Z J Public Health 2008;32:364–6.
8. Reddel SE. Partner notification of sexually transmitted infections in NSW: an informed literature review. Melbourne: The Burnet Institute, 2010.
9. Hocking JS, Parker RM, Pavlin N, et al. What needs to change to increase chlamydia screening in general practice in Australia? The views of general practitioners. BMC Public Health 2008;8:425.
10. McCarthy M, Haddow LJ, Furner V, Mindel A. Contact tracing for sexually transmitted infections in New South Wales, Australia. Sex Health 2007;4:21–5.
11. Arthur G, Lowndes CM, Blackham J, Fenton KA. Divergent approaches to partner notification for sexually transmitted infections across the European union. Sex Transm Dis 2005;32:734–41.
12. Australasian Society for HIV Medicine. Australasian Contact Tracing Manual. Sydney, 2010.
13. Edmiston N, Chuah J, McLaws ML. Contact tracing in a regional sexual health clinic: audit outcomes and implications for sexually transmitted infection control. Aust N Z J Public Health 2007;31:576–80.
14. Keogh L, Hammond J, Mulvey G, Temple-Smith M. Contact tracing for sexually transmissible diseases in general practice in Victoria, Australia. Venereology 1998;11:32–7.
15. Kenyon AV, et al. Service users' preferences on methods of partner notification and the use of newer communication technologies. In: ISSTDR. London, 2009.
16. Cunningham SD, Meyers T, Kerrigan D, Ellen JM. Psychosocial factors influencing the disclosure of sexually transmissible infection diagnoses among female adolescents. Sex Health 2007;4:45–50.
17. Hogben M, Hood J. Acquired skills in sexually transmitted disease prevention: partner services and tailoring interventions to populations. Sex Transm Dis 2011;38:365–6.
18. Ellison G. Proceedings of the Society for the Study of Human Biology: a randomized controlled trial of a standardised health message vs patient-centred counselling to improve STD partner notification. Ann Hum Biol 2002;29:462–3.
19. Gorbach PM, Aral SO, Celum C, et al. To notify or not to notify: patients' perspectives of partner notification in Seattle. Sex Transm Dis 2000;27:193–200.
20. Mathews C, Coetzee N, Zwarenstein M, et al. Strategies for partner notification for sexually transmitted diseases. Cochrane Database Syst Rev 2001;4: art no CD002843.
21. Brewer DD, Potterat JJ, Muth SQ, et al. Randomized trial of supplementary interviewing techniques to enhance recall of sexual partners in contact interviews. Sex Transm Dis 2005;32:189–93.
22. Bell G. A service evaluation of partner notification for the UK National Chlamydia Screening Programme 2006–7. In: ISSTDR. London, 2009.
23. Hogben M, McNally T, McPheeters M, Hutchinson AB. The effectiveness of HIV partner counseling and referral services in increasing identification of HIV-positive individuals a systematic review. Am J Prev Med 2007;33:s89–100.
24. Matthews C, Coetzee N, Zwarenstein M, et al. A systematic review of strategies for partner notification for sexually transmitted diseases including HIV/AIDS. Int J STD AIDS 2002;13:285–300.
25. Mohammed H, Kissinger P. Disclosure of HIV serostatus to sex partners in rural Louisiana. AIDS Care, 2006;18(Suppl 1):S62–9.
26. Golden MR, Faxelid E, Low N. Partner notification for sexually transmitted infections including HIV infection: an evidence based assessment. Sexually Transmitted Diseases. Sydney: McGraw Hill, 2008.
27. Rietmeijer CA, Van Bemmelen R, Judson FN, Douglas JM Jr. Incidence and repeat infection rates of Chlamydia trachomatis among male and female patients in an STD clinic: implications for screening and rescreening. Sex Transm Dis 2002;29:65–72.
28. Trelle S, Shang A, Nartey L, et al. Improved effectiveness of partner notification for patients with sexually transmitted infections: systematic review. BMJ 2007;334:54.
29. Estcourt C, Sutcliffe L. Moving partner notification into the mainstream of routine sexual health care. Sex Transm Infect 2007;83:169–72.
30. Hogben M, Kissinger P. A review of partner notification for sex partners of men infected with chlamydia. Sex Transm Dis 2008;35:s34–9.
31. Tomnay JE, Pitts MK, Fairley CK. Partner notification: preferences of Melbourne clients and the estimated proportion of sexual partners they can contact. Int J STD AIDS 2004;15:415–8.
32. Hopkins CA, Temple-Smith MJ, Fairley CK, et al. Telling partners about chlamydia: how acceptable are the new technologies. BMC Infect Dis 2010;10:58.
33. Levine D, Woodruff AJ, Mocello AR, et al. inSPOT: the first online STD partner notification system using electronic postcards. PLoS Med 2008;5:e213.
34. Wilson TE, Hogben M, Malka ES, et al. A randomized controlled trial for reducing risks for sexually transmitted infections through enhanced patient-based partner notification. Am J Public Health 2009;99:s104–10.
35. Edmiston N, Merrit T, Ooi C. Make contact: a comparative study of contact tracing strategies for chlamydia. Int J STD AIDS 2010;21:431–4.
36. Apoola A, Boothby M, Radcliffe K. Is telephone follow-up as good as traditional clinic follow-up in achieving the proposed national outcome standards for chlamydia management? Int J STD AIDS 2004;15:376–9.
37. McNulty A, Teh MF, Freedman E. Patient delivered partner therapy for chlamydial infection: what would be missed? Sex Transm Dis 2008;35:834–6.
38. Bilardi JE, Fairley CK, Hopkins CA, et al. Experiences and outcomes of partner notification among men and women recently diagnosed with chlamydia and their views on innovative resources aimed at improving notification rates. Sex Transm Dis 2010;37:253–8.
39. Temple-Smith M, Hopkins C, Fairley C, et al. The right thing to do: patients' views and experiences of telling partners about chlamydia. Fam Pract 2010;27:418–23.

correspondence **afp@racgp.org.au**