HIV transmission among men
who have sex with men through oral sex

While the risk of transmission through oral sex for men who have sex with men (MSM) is low, discrepancies remain between study findings and there is uncertainty about the exact degree of risk. 1

Between July 2001 and September 2003, a total of 4150 MSM were newly diagnosed with HIV infection in England, Wales, and Northern Ireland and reported to the Communicable Disease Surveillance Centre in London. Reports for 1359 cases received during this time included the question “Does the patient believe himself to have been infected through oral sex?” The remaining 2791 cases had only laboratory reports or earlier clinician report forms where this question was not asked.

The oral sex question was answered for 688 (50.6%) of the 1359 cases, of which for 625 (90.8%) the response was no, and yes for 63 (9.2%) cases. For 671 cases this information was not recorded even though the question was included on the form.

All 63 cases where the patient believed himself to have been infected with HIV through oral sex were further investigated by a discussion with the clinician or healthcare provider. From these further discussions during the follow-up, 27 (42.8%) cases were believed to have been infected from unprotected anal intercourse. Of the remaining 36 cases, 16 (2.3%) claimed to have had only oral sex as their risk for acquiring HIV, with 20 (2.9%) cases always reporting protected anal sex but unprotected oral sex. Previous negative testing history and HIV status of partners was taken into account when discussing possible HIV risk with clinicians or healthcare providers.

It is difficult to quantify oral sex risks and this could be an obstacle to accuracy; none of these individuals were re-interviewed for this study and risk was assessed by clinician and note review only. There may be recall difficulties surrounding condom use, including when they were used, or if used, coming off or splitting, or brief anal-penile contact that was not considered relevant or remembered. In addition, there was limited information about whether ejaculation had occurred or about breaks in the oral mucosa. However, 16 cases reported no anal sex and 20 cases reported only protected anal sex and unprotected oral sex. In total this represents 5.2% of those MSM reports where the question was answered. We are aware that, for half, the question was not answered, and if we classified those reports as not infected through oral sex, then 2.6% (36 of 1359) were probably infected through this route. The indication given by these UK surveillance data is that oral sex carries a small but real risk.

V L Gilbart, B G Evans, S Dougan
Communicable Diseases Surveillance Centre,
61 Colindale Avenue, London NW9 5EQ, UK
Correspondence to: Ms Victoria Gilbart,
Communicable Diseases Surveillance Centre,
61 Colindale Avenue, London NW9 5EQ, UK;
Vicky.gilbart@hpa.org.uk
doi: 10.1136/sti.2004.009217
Accepted for publication 7 January 2004

References

The correct approach to modelling and evaluating chlamydia screening

A recent systematic review of economic evaluations suggests that screening for genital chlamydia infection is “cost effective.” 1 We are concerned about how the authors reached this conclusion. The reviewers did not take into account the fact that Chlamydia trachomatis is infectious. The methodological problems arising from this fundamental flaw raise questions about the validity of the conclusion.

The correct model to use in the evaluation of an infectious disease must be capable of encompassing all its effects, including the potential for transmission. Bernoulli first reported such transmission dynamic models in the 18th century. 1 The widespread misuse of static, as opposed to transmission dynamic, models has been noted in the economics literature on vaccination programmes; but the message has been slow to transcend to the economics literature on sexually transmitted infections, with a few notable exceptions. 2 In the case of screening for genital chlamydia, someone who is successfully treated might be re-infected; the benefits of treatment in preventing long term sequelae will be lost, and the person could continue to infect others. If they are successfully treated without re-infection, however, they will not transmit infection. Since the two possibilities have opposing effects on the number of cases, the direction of change in the cost effectiveness ratio is uncertain; it could overestimate or underestimate the true cost effectiveness. Economic evaluations that do not incorporate these effects are, therefore, very unlikely to model the outcomes of a chlamydia screening programme accurately.

Although the use of objective criteria to assess the quality of identified papers was praised in a recent STI editorial, 3 the checklist used by Honey et al. 4 is outdated and was not applied appropriately for an infectious disease. This led the authors to include papers whose results might be unreliable. The use of more recent and widely used guidelines, which ask questions about the choice of model type and the justification for the key parameters on which the model is based, 5 may have drawn attention to the problems of static models. Furthermore, the review included studies that used “cost per case detected,” which is an inadequate outcome for screening programmes because it does not take into account resource implications associated with the course of action taken by individuals after case detection.

We propose that all future economic evaluations of chlamydia screening should use a dynamic modelling approach. A consensus panel to develop guidelines for the conduct of economic evaluations of interventions for sexually transmitted infections could take this recommendation into account. 6

T Roberts, S Robinson, P Barton, S Bryan, A McCarthy, J Macleod, M Egger, N Low
Health Economics Facility, HSMC, University of Birmingham, Park House, 40 Edgbaston Park Road, Birmingham B15 2RT, UK
Correspondence to: T Roberts, Health Economics Facility, HSMC, University of Birmingham, Park House, 40 Edgbaston Park Road, Birmingham B15 2RT, UK; t.roberts@hsmc.ac.uk
doi: 10.1136/sti.2003.008458
Accepted for publication 19 November 2003

Conflict of interest: The authors are all members of the Chlamydia trachomatis Screening Studies (Class) Working Group. Part of the remit of this group is to conduct a systematic review of the economic studies of Chlamydia trachomatis screening and to construct a model with which to evaluate the cost effectiveness of chlamydia screening.

References
2. Bernoulli D. Mathematical and physical memoirs, taken from the registers of the Royal Academy of...
Haryana state in India, still a low HIV prevalence state

In Haryana, India, with a geographical area of 27,632 square miles, an HIV sentinel surveillance was carried out, on a regular basis (1998–2002), on consecutive serum samples of 400 antenatal clinic (ANC) attendees (three sites) and 2733 STD clinic attendees (four sites). This was done for each 12 week period per year as unlinked anonymous testing with one of the ELISA/rapid/simple tests. A sample that was positive with two tests of different assays was considered HIV positive. The other STDs were diagnosed clinically and using appropriate laboratory tests.  

Of the 7933 men and women who participated in the HIV sentinel surveillance from 1998–2002, 15 (0.3%) of 5200 ANC attendees and 48 (1.8%) of 2733 STD clinic attendees had HIV. Though HIV prevalence is still below 1% among the ANC attendees, a gradual increase over these 5 years has been observed though statistically it was not found to be significant (table 1). With increasing HIV infection among antenatal women, paediatric AIDS is poised to become an important public health problem.  

The odds ratio (ORs) of HIV infection for men compared to women decreased by age; men aged 20–29 years were nearly thrice as likely as women the same ages to be HIV infected (OR 2.68 (95% CI 1.1 to 6.7)). When we combined the literacy status for both men and women, the HIV prevalence was statistically significant among the literate of more than fifth grade (p value = 0.0416) but was not found to be significant when combined for ANC attendees. School or college education, therefore, does not have any impact on this epidemic. Emphasis has to be given to educate the general public about AIDS. 

Among the STD clinic attendees presenting with genital ulcer, HIV reactivity (3.9%, 7/181) and VDRL reactivity (11.6%, 21/181) were found to be statistically significant (p<0.05, χ² test used). Therefore, in India, where the overall level of HIV is still low, a high level of STDs in certain states makes for a continuing potential for the epidemic to become generalised among all sexually active adults. Differences across the states may just be a matter of time.  

As per the sentinel surveillance data in the year 1998, there were seven moderate prevalence states (prevalence among ANC attendees <1% but prevalence among the STD clinic attendees >5%) and 19 states were of low prevalence compared to two states only with moderate prevalence rates and 24 states

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Antenatal clinic attendees</th>
<th>STD clinic attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HIV reactive</td>
<td>p Value</td>
</tr>
<tr>
<td>Age groups (years)</td>
<td>% (No)*</td>
<td></td>
</tr>
<tr>
<td>15–19</td>
<td>0.3 (383)</td>
<td>ns</td>
</tr>
<tr>
<td>20–29</td>
<td>0.3 (417)</td>
<td>ns</td>
</tr>
<tr>
<td>30–44</td>
<td>0.2 (630)</td>
<td>ns</td>
</tr>
<tr>
<td>&gt;45</td>
<td>0 (16)</td>
<td>ns</td>
</tr>
<tr>
<td>Sentinel year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feb-Mar 1998</td>
<td>0 (400)</td>
<td>ns</td>
</tr>
<tr>
<td>Aug-Oct 1998</td>
<td>0 (400)</td>
<td>ns</td>
</tr>
<tr>
<td>Aug-Oct 2000</td>
<td>0.08 (1200)</td>
<td>ns</td>
</tr>
<tr>
<td>Aug-Oct 2001</td>
<td>0.4 (1200)</td>
<td>ns</td>
</tr>
<tr>
<td>Aug-Oct 2002</td>
<td>0.6 (1600)</td>
<td>ns</td>
</tr>
<tr>
<td>Residence (2001–2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>0.4 (1573)</td>
<td>ns</td>
</tr>
<tr>
<td>Rural</td>
<td>0.7 (1227)</td>
<td>ns</td>
</tr>
<tr>
<td>Population (2001–2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Migrant</td>
<td>0.9 (224)</td>
<td>ns</td>
</tr>
<tr>
<td>Non-migrant</td>
<td>0.5 (2576)</td>
<td>ns</td>
</tr>
<tr>
<td>Literacy status (2001–2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literate</td>
<td>0.5 (859)</td>
<td>ns</td>
</tr>
<tr>
<td>Literate till 5th grade</td>
<td>0.6 (524)</td>
<td>ns</td>
</tr>
<tr>
<td>Literate till 12th grade</td>
<td>0.5 (1173)</td>
<td>ns</td>
</tr>
<tr>
<td>Education not done</td>
<td>0.4 (244)</td>
<td>ns</td>
</tr>
<tr>
<td>Occupation of spouses* (2001–2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>0.4 (435)</td>
<td>ns</td>
</tr>
<tr>
<td>Industrial and factory</td>
<td>0.3 (325)</td>
<td>ns</td>
</tr>
<tr>
<td>Service</td>
<td>0.2 (593)</td>
<td>ns</td>
</tr>
<tr>
<td>Agriculture and unskilled workers</td>
<td>0.7 (1241)</td>
<td>ns</td>
</tr>
<tr>
<td>Truck/auto/taxi driver</td>
<td>0.6 (160)</td>
<td>ns</td>
</tr>
<tr>
<td>Hotel staff</td>
<td>0 (6)</td>
<td>ns</td>
</tr>
<tr>
<td>Unemployed</td>
<td>0 (60)</td>
<td>ns</td>
</tr>
<tr>
<td>Students</td>
<td>0 (34)</td>
<td>ns</td>
</tr>
<tr>
<td>Syndrome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genital ulcer</td>
<td>2.5 (403)</td>
<td>2.7 (148)</td>
</tr>
<tr>
<td>Urethral/cervical discharge</td>
<td>1.0 (511)</td>
<td>0.9 (1043)</td>
</tr>
<tr>
<td>Genital ulcer and discharge</td>
<td>3.4 (59)</td>
<td>1.5 (66)</td>
</tr>
<tr>
<td>Genital warts</td>
<td>2.4 (85)</td>
<td>0 (32)</td>
</tr>
</tbody>
</table>

*p Value = 0.05 (ns = not significant) in all the characteristics (χ² test used).
†Men/women ratio (95% CI) couldn't be calculated.
‡p Value for test between sexes (χ² test used).

*Number of attendees.
†Among the antenatal clinic attendees, the majority of the occupations stated are those of the spouses with occasional women having in that occupation.

---

with low HIV prevalence rates (prevalence among the STD clinic attendees <3%) in the year 2001 while six states stayed as high prevalence states (prevalence among ANC attendees >1%). Haryana is still maintaining itself in a low level epidemiologic category. It is speculated that the effect of STD control and screening of ANC attendees for HIV transmission increase with the maturation of the HIV epidemic as experienced in trials in Tanzania and Uganda. Therefore, we should increase intervention programmes in all high risk groups as well as in the general population of this city while it is still in the early epidemic phase to ensure that this cost effective opportunity is not missed.

Acknowledgements

The authors wish to thank the senior technician in charge, Shri Satpal Singh, for his assistance in the fieldwork and laboratory procedures throughout this study. The statistical help provided by Shri R C Goel, PGIMER, Chandigarh, is duly acknowledged. We also thank Professor Narottam Sharma from the Regional Institute of English Chandigarh, UT for proof reading of the manuscript. We also acknowledge National AIDS Control Organisation (NACO) for its continuing guidance and the supply of free kits for HIV testing.

Contributors

DRA, BA, protocol development for field implementation, final approval of manuscript; VG, PG, field implementation of clinical and laboratory procedures, writing; DRA, BA, VG, VGU, analysis and interpretation, critical reviewing of manuscript.

D R Arora
Department of Microbiology, Voluntary Counselling and Testing Centre for AIDS, Post-graduate Institute of Medical Sciences (PGIMS), Rohtak, Haryana, India

V Gautam
Department of Microbiology, Government Medical College and Hospital, Chandigarh, India

P S Gill
Department of Microbiology, Post-graduate Institute of Medical Sciences (PGIMS), Rohtak, Haryana, India

B Arora
Department of Pathology, Post-graduate Institute of Medical Sciences (PGIMS), Rohtak, Haryana, India

V Gupta
Department of Microbiology, Voluntary Counselling and Testing Centre for AIDS, Government Medical College and Hospital, Chandigarh, India

Correspondence to: Dr V Gautam, 3243/21 D, Chandigarh, India-160022; r_vg@yahoo.co.uk
doi: 10.1136/sti.2003.008672
Accepted for publication 2 December 2003

References


Increased numbers of acute hepatitis C infections in HIV positive homosexual men; is sexual transmission feeding the increase?

Although the principal mode of hepatitis C (HCV) transmission in the United Kingdom is injecting drug use (IDU), alternative routes (the risk for a third of infections is unknown). The contribution of sexual transmission between men who have sex with men (MSM) to the spread of hepatitis C is unclear; however evidence is accumulating that both co-infection with HIV and the presence of other sexually transmitted infections (STIs) facilitate sexual transmission of HCV. With the reported increases in unsafe sex and STIs in HIV positive MSM we questioned whether these circumstances may lead to an increase in the number of HCV infections.

This study was undertaken to determine whether within our clinics, changes in the number of individuals being diagnosed with acute HCV infection were occurring and to ascertain risk factors for acquisition in these individuals.

A case note review of all patients within the HIV and sexual health clinics of St Stephen’s Centre with diagnosed acute HCV infection between January 1997 and December 2002 was performed. Patients newly diagnosed with HCV were identified from departmental computer records. Cases were defined as individuals with a newly positive and a previous negative HCV antibody test. Where negative tests had been performed more than a year earlier, testing of stored samples was undertaken to determine more precise timing of HCV seroconversion. Testing was done using the Monolisa anti-HCV version 2 enzyme immunoassay.

Twenty six male (all MSM) and one female case were identified; median age was 34 years. Twenty five individuals were HIV positive. The median time between negative and positive HCV antibody tests was 5 months (interquartile range 3–10 months). There was a significant increase in HCV seroconversions over the study period (see fig 1).

The indications for HCV testing were the development of abnormal alanine transaminase (ALT) (21), recent IDU (two), sexual contact with HCV positive partner (one), and a negative antibody test with symptoms (three). Of those tested because of newly abnormal liver function tests (LFTs), 18 were asymptomatic. LFTs were performed as part of routine HIV follow up. There was no increase in HCV tests performed in HIV positive individuals with ALT levels more than 100 IU/l over the study period; however, the percentage of positive HCV tests increased from 0.6 to 9.3 (p value using $\chi^2$ test for trend: <0.001). Risks for acquisition of HCV were recent unprotected anal or vaginal sex (21) and IDU (two), while in four there were no documented risk factors. Nine individuals were diagnosed with infectious sphyllitis either concurrently (three) or in the year before HCV seroconversion. Of the HIV positive patients 15 were on antiretroviral therapy (ART) and 11 had a viral load of less than 50 copies/ml. The median CD4 count was 399 x 10^6/μl.

Having multiple sexual partners, a history of STIs, and certain sexual practices have been associated with HCV infection. Reported increases in HCV seroconversion among HIV positive MSM in association with high risk sexual behaviour (unprotected anal sex, fistng, and rimming) suggests an interaction between HIV and sexual practice. As HCV plasma viraemia is higher in co-infected patients and correlates with viral load in saliva and semen, this may facilitate sexual transmission of HCV. Furthermore, there is evidence that ARV treatment may be associated with increases in HCV RNA levels.

While retrospective assessment of risk factors may be problematic, features of this study make us more confident of attributing risk to sexual activity. Data were collected in both general HIV and specialist hepatitis clinics, and also most patients were under long term follow up allowing cumulative recording of risks particularly those relating to IDU.

Although it is possible that increased numbers result from changing HCV testing thresholds there was no evidence of this and when we examined HCV tests performed to investigate those with abnormal LFTs, the commonest scenario leading to diagnosis. As the ALT trigger was present in the HIV positive group and not in the sexual health clinic attendees, the numbers from this source may be under-reported.

Determining the associated factors for transmission of HCV is critically important in order to introduce targeted screening and prevention interventions. As 85% of infected patients become chronic carriers and treatment of acute hepatitis C leads to high clearance rates, these strategies may be crucial in reducing the carrier pool of HCV, further transmissions and the risk of cirrhosis and hepatoma.

The study numbers are small and may represent a pocket of infection not indicative of increased risks in larger populations. However, the manner in which these infections parallel recent increases in STIs gives cause for the concern that risks may be more generalised. Further studies are needed to clarify this trend.

R Browne, D Asboe, Y Gilleece, M Atkins, S Mandalia, B Gazzard, M Nelson
St Stephens Centre, Chelsea and Westminster Hospital, 369 Fulham Road, London, SW10 9NH, UK
abuse and ongoing management of the

One week later, following an initial course of
gonorrhoeae was isolated. The organism was
gonorrhoeae from a toilet seat
Neisseria doctor and a heavy growth of
She had arrived back in Sydney approxi-
August 2003 a prepubescent 8 year old girl
Transmission of Neisseria

the mother and the child stated that there
noted to be full with no spare seats. Both

The child's behaviour and demeanour had
and had accompanied her almost continually.
During the 8 days before arriving in Sydney,
ing and the previous 2 days with relatives.

incubation period for symptomatic N gonor-

the former Soviet Block countries,

the history from the mother and her
unusually close supervision of the child, as

sexually abused children: medical and legal

PostScript 327

References

1 Zeuzem S, Teuber G, Lee JH, et al. Risk factors for the

infection favour the sexual transmission of hepatitis C? Infect

infection with sexual exposure in southern India. Clin Infect Dis

4 Fletcher S. Sexual transmission of hepatitis C and early intervention. J Assoc

with or without human immunodeficiency virus. Clin Diagn Lab

6 Babik JM, Holodny A. Impact of highly active antiretroviral therapy and immunologic status on
hepatitis C virus scoinfectious diversity in human immunodeficiency virus/ Hepatitis C virus

Transmission of Neisseria gonorrhoeae from a toilet seat

In August 2003 a prepubescent 8 year old girl presented with a sudden onset history of a
non-irritating, odourless heavy green vaginal discharge which had developed overnight.
She had arrived back in Sydney approxi-

the child, had shared a bedroom with her,

The child was taken initially to her family
doctor and a heavy growth of Neisseria gonorrhoeae was isolated. The organism was

resistant to both penicillin and ciprofloxacin. Once in Diaglab laboratory 2001, the patient was given an initial course of antibiotics, the child was referred to the author for assessment of possible sexual abuse and ongoing management of the N

Before boarding a flight to Moscow the family had spent 3 days in a hotel, sightsee-
ing and the previous 2 days with relatives. During the 8 days before arriving in Sydney,

the child, had shared a bedroom with her,

The child's behaviour and demeanour had
showed no change and both the child and the
siblings were asymptomatic. When ques-
tioned by the child's mother, the child strongly
denied any history of genital contact.

the flights and that by the end of the flights the
“toilets were very dirty.”
The mother stated that when the child
used a particular toilet the child always wiped
the seat with toilet paper before using it.
The child confirmed this. She said her fingers
occasionally became dirty while wiping the seat.

Genital injury has no relevance in making
diagnosis that excludes sexual abuse.1

It is important that all cases of N gonor-

the child most probably contracted the infection
via autoinoculation while using a mixed
toilet in a crowded aeroplane.

The mother stated that when the child

In an earlier hospital based study on male
NGU patients reported from India, C trachomatis
and Trichomonas vaginalis were the two most common pathogens among urethral discharge specimens, being
responsible for 18% and 19% cases, respectively.2

Another study from Chennai, India reported
the prevalence of C trachomatis infection in
male and female genital swab specimens as
18.9% and 32.2% by culture and PCR, respectively.4
Chlamydia and Ureaplasma urea-
liticum were the most common infecting and
non-infecting pathogens (51.5% by PCR in first
void urine and 45.6% by culture in intra-
urethral swab specimens, respectively) in male
patients with NGU attending an Israeli STD clinic.5 In a study from Turkey, the prevalence of C trachomatis and Trichomonas
infection (screened by ligase chain reaction in either

References


2 Hammerschlag M. Sexually transmitted diseases in sexually abused children: medical and legal

3 Potterat JJ, Markewich GS, Rothenber R. Prepubertal Infections with Neisseria
Hyg 1984;78:1–3.

4 Lipsitt LJ, Farnett AJ. Nonsexual transmission of gonorrhoea to a child. (Letter) N Engl J Med
1984;311:470.

5 Borisenko KK, Tichonova U, Renton AM. Syphilis and other sexually transmitted infections in

Detection of Chlamydia trachomatis by polymerase chain reaction in male patients
with non-gonococcal urethritis attending an STD clinic

Genital infection with Chlamydia trachomatis (35–50%) is the single most identifiable cause
of non-gonococcal urethritis (NGU) in
heterosexual men and may have serious
consequences, not only for men but for their
partners. In India, a high prevalence of
sexual C trachomatis infection has been
reported in women. However, there is a
considerably less information on male chlamy-
dial infection.4 4 There is a definite need for
reliable screening of C trachomatis genital
infection in men in order to prevent under-
diagnosis of symptomatic and subclinical
disease and to facilitate better clinical management
of this infection in India. This study was

Figure 1 Detection of Chlamydia trachomatis by polymerase chain reaction in 1% agarose
gel electrophoresis using 517 bp plasmid primer. Lane 1 is DNA marker. Lanes 2–6 show
magnification of C trachomatis, Lane 8 is a negative control. Lane 7 is a positive control for
C trachomatis.
urethral swabs or first void urine) among men with symptomatic urethritis was 15.7% and 9.4%, respectively. This should be viewed with concern particularly in developing countries like India where screening for C. trachomatis is not done on a routine basis and, hence, extensive screening should be conducted for detection of genital C. trachomatis infection in men using sensitive and specific molecular assays like PCR.

V Vats, R Rastogi, A Kumar, M Ahmed, V Singh, A Mittal
Institute of Pathology (ICMR), Safdarjang Hospital Campus, Post Box no 4909, New Delhi 110 029, India

R K Jain, J Singh
Department of Sexually Transmitted Diseases (STD), Safdarjang Hospital, New Delhi 110 029, India

Correspondence to: Dr Aruna Mittal, Institute of Pathology (ICMR), Safdarjang Hospital campus, Post Box no 4909, New Delhi 110 029, India

doi: 10.1136/sti.2003.008839

Accepted for publication 30 January 2004

References


BOOK REVIEW

Letting Them Die—Why HIV/AIDS prevention programmes fail


What is going on with HIV in South Africa? The epidemic escalates with no sign of slowing down, making the country the worst affected in the world. The government continues to try and find excuses not to deliver either treatment or prevention programmes.

As HIV continues to spread outside the high risk groups, the need to educate at the community level also increases but the former group should not be forgotten. A combination of both strategies is probably the best approach. The reality is that, although the HIV epidemic in South and southern Africa has come a long way, there is still some distance to go. Hopefully, those involved in HIV project management will pick up the lessons set out in this excellent little book.

N O’Farrell
Pastour Suite, Ealing Hospital, London UB1 3HW, UK; ofarrell@postmaster.co.uk

doi: 10.1136/sti.2003.006957corr1

The reference list of the paper by V J Johnston, H Brit, Y Pan, and A Mindel, entitled “The management of sexually transmitted infections by Australian general practitioners” (Sex Transm Infect 2004;80:212–5), was published incorrectly. The correct reference list can be found as a data supplement to the article online at http://www.stijournal.org/cgi/content/full/80/3/212/DC1.

NOTICES

22nd International Papillomavirus Conference and Clinical Workshop

This will be held 29 April to 6 May 2005 in Vancouver, British Columbia, Canada. Topics will include animal papillomaviruses, diagnosis, epidemiology, HPV associated neoplasia in the developing world, immunology, molecular pathogenesis, natural history, screening, transcription, and treatment.

For more information please contact: 22nd IPC Secretariat, C/o Venue West Conference Services Ltd, #645-375 Water Street, Vancouver, BC V6B 5C6, Canada; tel: +1 604 681 5226; fax: +1 604 681 2503; email: congress@venuewest.com; website: www.hpv2005.org.

16th Biennial Meeting of the ISSTDR

The 16th Biennial Meeting of the International Society for Sexually Transmitted Diseases Research (ISSTDR) will be held 10–13 July 2005 in Amsterdam, The Netherlands. The meeting will be organised jointly by Dutch and Belgian STD researchers. For more information please visit www.isstdr.org.

Notes for MCQs on p 320

(1) a
(2) b
(3) c
(4) c
(5) c
(6) d
(7) d
(8) a
(9) d
(10) b
The correct approach to modelling and evaluating chlamydia screening

T Roberts, S Robinson, P Barton, S Bryan, A McCarthy, J Macleod, M Egger and N Low

Sex Transm Infect 2004 80: 324-325
doi: 10.1136/sti.2003.008458

Updated information and services can be found at:
http://sti.bmj.com/content/80/4/324.2

These include:

References
This article cites 4 articles, 2 of which you can access for free at:
http://sti.bmj.com/content/80/4/324.2#BIBL

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/