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Pharyngeal gonorrhoea: the forgotten reservoir

Urethral gonorrhoea (UG) dramatically decreased in Paris between 1986 and 1997 as a consequence of safer sexual behaviour. Thus, only 43 cases of gonorrhoea have been collected in our clinic in 1997, the lowest number since the early 1970s. Since 1998, an increase has been observed, as in other STD clinics in France and in the Renago laboratory network.[1–3] Men who have sex with men (MSMs) represent an increasing number of men with UG. Many of them are HIV seropositive and recognise unprotected oral sex as the only risk factor for gonorrhoea. This finding prompted us to study pharyngeal carriage of *Neisseria gonorrhoeae* (NG) and *Neisseria meningitidis* (NM) in this population.

From January 1999 to May 2001, 200 consecutive cases of male UG were observed in our clinic; a pharyngeal smear for culture of NG and NM was suggested as well as a standardised questionnaire aimed at sexual behaviour; 178 gave informed consent. Results are presented in table 1, comparing MSMs and men who also have sex with women (MSWs).

Interestingly, MSMs represent more than 50% of patients with UG (compared to 10% in 1986 and 20% in 1995). One third of them are HIV seropositive (a minimal figure because of a high rate, 9%, of test refusal). Fifty eight per cent admitted unprotected oral sex as the sole risk factor for gonorrhoea. Moreover, 98% of the gonococci cultured in MSMs are serogroup W-2–3 (*v* 73 % in MSWs) and only 1/92 produce penicillinase (*v* 26 % in MSWs), suggesting a homogeneous cluster of strains circulating in the Paris gay community (study ongoing). Finally, pharyngeal carriage of both NG (14%) and NM (20%) is high.

Data concerning MSWs are heterogeneous, UG affects mainly male patients from north (35%) and central (31%) Africa, with oral sex as the only risk factor for gonorrhoea (10%), and pharyngeal carriage of NG and NM (6%) is much lower, but not inconsistent.

Pharyngeal gonorrhoea is mostly asymptomatic (all our cases were) and bacteriological diagnosis is uncertain, but we believe that the pharynx acts as an important reservoir accounting for the recent increase in UG, particularly in MSMs using unprotected oral sex as an alleged safer sex act. The high proportion of HIV infected patients is a major cause of concern and information about the hazards of unprotected oral sex is warranted.

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Emerging of dual AIDS associated neoplastic diseases in the era of highly active antiretroviral therapy

Kaposi's sarcoma, non-Hodgkin's lymphoma, and cervical cancer remain the only AIDS associated malignancies, according to the 1993 CDC definition, but other neoplasms were reported throughout AIDS pandemic (Hodgkin's lymphoma, oropharyngeal, oesophageal, gastric, anal, lung, and brain cancer, testicular-ovarian neoplasms, melanoma, skin and thyroid malignancies, multiple myeloma, leiomyosarcomas, angiosarcomas, smooth muscle tumours), with an increasing frequency despite HAART introduction.[1–4]

Among 711 AIDS patients notified since 1985, 66 (9.3%) were diagnosed because of an AIDS defining cancer, and 51 more patients (7.2%) developed a malignancy with AIDS, but dual AIDS associated neoplasms were never seen until 2000. A rare combination of lethal Kaposi's sarcoma plus non-Hodgkin's lymphoma was recently observed. Two homo/bisexual men had received multiple antiretroviral lines since 1990–2, but complete viral suppression was achieved by the first patient for a limited 6 month period, while elevated viraemia (with peaks of 210 000 and 270 000 HIV-RNA copies/ml, respectively), lasted for the past 5 years. An appreciable degree of HIV related immunodeficiency was expressed by a CD4+ count of 42–255 cells × 10^6/l in the first patient, and 68–355 cells × 10^6/l in the second case. A first AIDS related neoplasm (a cutaneous-mucous Kaposi's sarcoma), was identified 2 and 5 years before death, respectively. Repeated cytotoxic treatment with adriablastine-bleomycin-vincristine, followed by liposomal daunorubicin, reduced disease progression, while a number of HIV related opportunistic infections occurred: oesophageal candidiasis and cryptosporidiasis in the first patient, and pneumonia, zoster, plus wasting syndrome in the second subject. Eleven and 5 months before the lethal outcome, respectively, a Burkitt's B cell lymphoma involving multiple skin sites and complicated by bone marrow, gastroduodenal, gingivobuccal, and pulmonary localisations was detected in the first patient, while the second subject had a high grade non-Hodgkin's lymphoma involving axillary-mediastinal lymph nodes, lungs, and pleura. Notwithstanding therapeutic attempts (methotrexate-zidovudine, followed by MNCOP-B), a rapidly fatal course occurred.

The introduction of HAART determined a profound modification of the evolution of HIV disease, but improved patient survival, persisting immune system abnormalities, and co-infection with potentially oncogenic viruses may be responsible for the increased incidence of neoplasms during the HAART era.[1–4] This phenomenon seems to extend beyond typical AIDS defining neoplasms, since other malignancies were reported with an incidence greater than that of the general population, and that of the pre-HAART era,[3 4] although they may be largely underestimated, owing to the unchanged CDC AIDS classification system. This trend is not uniform for Kaposi's sarcoma,[2 5] probably because of the favourable effects of antiretroviral-antiherpetic medications. The occurrence of dual AIDS associated malignancies remains exceptional: only two patients with a rare and aggressive non-Hodgkin's null cell lymphoma and prior Kaposi's sarcoma were described by Ascoli.[6] Although our patients developed "typical" AIDS defining neoplasms, this phenomenon may become of increasing concern, when

Table 1 Urethral gonorrhoea (UG)

	MSMs (n=92)	MSWs (n=86)	Total (n=178)	p Value
Mean age years (SD)	31.4 (7.3)	33.5 (11.3)	32.7 (9.8)	NS
White, n (%)	67 (73)	17 (20)	84 (47)	10^{-6}
Oral sex as the only risk factor for UG, n (%)	53 (58)	9 (10)	62 (35)	10^{-6}
HIV test positive, n (%)	30 (33)	3 (3.5)	33 (18.5)	10^{-6}
HIV test refusal, n (%)	8 (9)	5 (6)	13 (7)	NS
PPNG, n (%)	1 (1)	22 (26)	23 (13)	10^{-6}
NG pharynx, n (%)	13 (14)	5 (6)	18 (10)	0.06
NM pharynx, n (%)	18 (20)	5 (6)	23 (13)	10^{-2}

PPNG = penicillinase producing *Neisseria gonorrhoeae*; NG = *Neisseria gonorrhoeae*; NM = *Neisseria meningitidis*.

involving rare cancers. The increased life expectancy of HAART treated patients, a direct involvement of HIV itself, or abnormalities driven by oncogenic viruses, including EBV, HSV-8, and papillomavirus,[1 2] might explain the tendency to develop a broader spectrum of long term neoplastic complications. In our experience, a persistent HIV associated immunodeficiency and an incomplete virological response to HAART, possibly had a pathogenetic role. Clinicians should maintain an elevated clinical suspicion for a broad spectrum of HIV associated cancer, even after a first diagnosis of AIDS related neoplasm. Epidemiological studies should give a reliable estimate of the frequency of all HIV associated tumours, and recognise eventual dual AIDS associated cancers. The pathogenesis underlying AIDS related malignancies (especially neoplasm immunity and viral oncogenesis) deserve careful insight.

Contributors

RM collected and interpreted data and literature evidences, and drafted the entire work; LC collected clinical and laboratory data and literature evidences, and revised both data evaluation and discussion; FC proposed and supervised the report, read and corrected the draft, and participated in the discussion of both data and literature references

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Impact of the Sexually Transmitted Infections Foundation course on the knowledge of family planning nurses and doctors

There has been convergence of genitourinary medicine and reproductive healthcare services in the United Kingdom to produce "one stop sexual health clinics" such as the Sandyford Initiative in Glasgow.[1–3] As part of service development a number of educational initiatives such as the Sexually Transmitted Infection Foundation (STIF) course have been initiated to ensure that minimum skills and competencies are obtained. Training programmes such as the STIF course coordinated by the Medical Society for the Study of Venereal Diseases (MSSVD) play a vital part in providing staff with the education required to competently extend their roles. The first Scottish STIF course was run in Glasgow in March 2002. The course was developed as a UK-wide initiative to support the implementation of the English national strategy for sexual health and HIV.[4]

In order to evaluate the impact attendance at the STIF course had on the knowledge of family planning staff, a prospective study was performed in Glasgow. Eighteen members of family planning staff (15 doctors and three nurses) were assessed on their knowledge of vaginal and cervical infections before and after attendance at the course, using four clinical case scenarios with accompanying clinical pictures. A maximum score of 12 was awarded for each assessment. The cases comprised candida, trichomonas, bacterial vaginosis, and chlamydia. The participants were asked to provide a provisional diagnosis based on the history and a clinical picture. The vaginal pH was then provided and each participant was given the opportunity to alter their diagnosis in the light of this additional information. They were then asked about the management of each condition. Within 3 months of the STIF course, each doctor and nurse were retested with the initial scenarios. Answers and feedback were provided on completion.

Two sample *t* tests and confidence intervals for the difference of two means were employed to compare all participants and the doctors and nurses scores before and after attendance at the STIF course. One sample *t* tests and confidence intervals for the difference of two means were employed to compare the doctors and nurses scores. As the numbers in the study were small a subanalysis of the results for different grades of doctors was not performed. Table 1 shows the mean (SD), median precourse and post-course scores, and mean difference in scores. The mean increases in all participants' and the doctors' scores were statistically significant ($p = 0.001$, and $p = 0.006$, respectively). The mean increase in the nurses' score was 5.0 (95% CI −3.6 to 13.6), however the number of nurse participants was small (n=3).

This study suggests that knowledge increased following attendance at the STIF course. Educational initiatives such as the STIF course are important tools for development of staff working in the field of sexual and reproductive health care. A larger study of this type assessing a wider range of subject matter with longer follow up would enable further evaluation of the STIF courses' impact on knowledge.

Table 1 The mean (SD), median precourse and post-course scores, and mean difference in scores

	Precourse score	Post-course score	Mean difference (95% CI)
All participants (n=18)			
Mean (SD)	8.2 (2.3)	10.7 (1.8)	+2.5 (1.1 to 3.9)
Median	9.0	12.0	
Doctors (n=15)			
Mean (SD)	8.6 (1.9)	10.6 (1.8)	+2.0 (0.7 to 3.3)
Median	9.0	12.0	
Nurses (n=3)			
Mean (SD)	6.0 (3.0)	11.0 (1.7)	+5.0 (–3.6 to 13.6)
Median	6.0	12.0	

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Improving response rates for self collected urine samples

Chlamydia trachomatis is the commonest bacterial sexually transmitted infection (STI) in Victoria, Australia, with the number of notifications increasing threefold in the past 8 years from 1287 in 1994 to 3977 in 2001.[1] As infection with chlamydia is frequently asymptomatic, notification data underestimate population prevalence. Innovative study designs are necessary to investigate chlamydia prevalence and risk factors. We conducted a pilot study among women aged 18–32, to estimate the rate of response to a request to provide a mailed self collected urine specimen for chlamydia testing. Recruitment via mail was compared with recruitment via mail and follow up telephone contact.

Between March and May 2002, the names and addresses of 150 Victorian women aged 18–32 were randomly selected from the electoral roll. These were linked with the Electronic White Pages and telephone numbers obtained where possible, producing two groups: (1) women with telephone numbers identified, and (2) women without telephone numbers identified. All women were mailed a letter of invitation and an information leaflet. Women in group 2 were also mailed a reply paid participation form asking them to indicate whether they wished to participate.

Women in group 1 were telephoned after 1 week and consent sought to mail them a urine kit. Two reminder letters were sent to non-responders in group 2. Women testing positive

Table 1 Response rates by age and method of recruitment

	18–22 years No (%)	23–27 years No (%)	28–32 years No (%)	Total No (%)
Group 1 Mail and telephone:				
Number	26 (100)	21 (100)	18 (100)	65 (100)
Agreed to participate	14 (54)	14 (67)	7 (39)	35 (54)
Urine provided	10 (38)	12 (57)	7 (39)	29 (45)
Group 2 Mail:				
Number	16 (100)	26 (100)	27 (100)	69 (100)
Agreed to participate	2 (13)	6 (23)	8 (30)	16 (23)
Urine provided	2 (13)	5 (19)	7 (26)	14 (20)
Total	12 (29)	17 (36)	14 (31)	43 (32)

were treated with azithromycin through their nominated doctor.

Participants provided 20 ml first void urine in the container provided. Specimens were tested for chlamydia by polymerase chain reaction.

Telephone numbers were found for 70 (47%) women. Among women in group 1, five (7%) were excluded because they were living overseas. Of the remaining 65 women, 35 (54%, 95% CI 41 to 66) agreed to participate and 29 (45%, 95% CI 32 to 57) provided a specimen. One case of chlamydia was diagnosed giving a prevalence of 3.4% (95% CI 0.1 to 17.8) in this group (table 1). Among women in group 2, 11 (14%) were excluded because they were not living at their registered address. Of the remaining 69 women, 16 (23%, 95% CI 14 to 35) agreed to participate and 14 (20%, 95% CI 12 to 32) provided a specimen. No cases of chlamydia were diagnosed.

In this pilot study we showed recruitment via mail and telephone had a significantly higher response than mail alone (45% *v* 20%, p=0.002). This suggests that telephone communication will increase response in population based chlamydia research that uses mail contact as the principal recruitment tool. Although the method of recruitment was not randomly allocated, the 25% difference in response is unlikely to be explained by differences between the two groups.

A response rate of 45% for those recruited via mail and telephone compares well with results obtained in similar overseas studies.[2–4] However, unlike our study that used the electoral roll as the sampling frame, these studies used a primary healthcare sampling frame, not available in Australia. As we were only able to locate telephone numbers for 47%, an alternative sampling frame would be necessary for future research using mailed, self collected specimens.

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Contributors

JH, conducted the pilot study and drafted the letter; ST, conception and design particularly with reference to specimen collection and conducted all chlamydia testing; DJ, conception and design particularly with reference to population sampling and statistical methods and reviewed and made revisions to the letter; SG, conception and design of study, assisted with the ethics application and reviewed and made revisions to the letter; CF, conception and design, assisted with the ethics application and revised letter critically for important intellectual content.

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Which factors affect access to STD care? A comparison of a hospital based clinic and an outreach service

The national strategy for sexual health and HIV recommends that genitourinary medicine (GUM) outreach services be used as a means of expanding patient access to testing and advice for STDs.[1] However, there is limited published work to demonstrate the effectiveness of outreach services in GUM.[2 3] Having established an outreach GUM service in 1997 we reported initial data in 1998[4] and now we report a more in-depth examination of the factors that affect access to care and a further evaluation of the differences between patients attending the outreach and main clinics.

The Patrick Clements Clinic is a long established hospital based GUM clinic (about 16 000 attendances per year) in north west London. It offers a daily, weekday, open access, walk-in service. The Windsor Clinic (WC) is an outreach GUM service based at a GP practice building in Wembley. It opens one afternoon a week with mixed appointment and walk-in slots, staffed by a consultant and a nurse.

Fifty five patients were interviewed at the two study sites: 35 at the main clinic and 20 at the outreach clinic. The taped interviews were later analysed to look for themes. Demographic and disease data were also analysed from consecutive attendees for a week at the hospital clinic and 6 months at the outreach clinic using the clinic database. Data were compared with the previously published study.[4] Differences were tested with the χ^2 test.

The most notable differences between interviewees were the higher rate of previous GUM attendance, 28/35 (80%) *v* 5/20 (25%),

Table 1 Comparison of demographic and disease data on patients attending the two clinics in 2001 and significant data from the 1998 survey

Variable	Hospital clinic patients (209) No (%)	Outreach clinic patients (111) No (%)	Outreach clinic data (95) 1998[4]
Ethnicity			
Asian	11 (5)	5 (5)	17 (17.4)**
Black British/Caribbean	77 (37)	48 (43)	
White	54 (26)	23 (21)	
African	14 (7)	18 (16)*	
First time attendees	72 (34)	66 (59)*	
Women	107 (51)	75 (68)*	
Men	102 (49)	36 (32)*	
Median age	28	26	26**
Age <20 years	22 (11)	21 (19)*	19 (20)**
Disease			
Gonorrhoea	7 (3)	5 (5)	
Chlamydia	12 (6)	9 (8)	
Trichomoniasis (female)	4 (4)	1 (1)	
NGU (male)	15 (15)	3 (8)	
Genital herpes	5 (2)	0	
Genital warts	12 (6)	3 (3)	
HIV test	64 (31)	30 (27)	27 (28)**

*p<0.05, outreach *v* hospital clinic patients for 2001 data.
**p<0.05, 95 outreach *v* 105 hospital clinic patients, data collected in 1998 for both.[4]

and greater numbers with casual partners, 14/35 (40%) *v* 1/20 (5%), in those attending the hospital based clinic compared with outreach patients. Interviewees reported that location played an important part in their decision as to which site to attend as 46/55 (83%) attended the clinic that was closest to home or work. Lack of awareness of alternative clinics did not seem to be a significant factor influencing the site attended, as 34/55 (62%) were aware of alternatives. Confidentiality and stigma were not stated as important issues.

Demographic and disease data on 209 consecutive attendees at the hospital based clinic and 111 consecutive attendees at the outreach clinic in 2001 were compared (table 1). The data show that outreach patients were more likely to be teenagers, women, African, and first time clinic attendees. STD rates were similar at both sites. These data are similar to those obtained in 1998 although the ethnic mix has changed.

It has long been assumed that stigma and confidentiality were the main influences on patient access to GUM services and ever since the Monk report there has been a move towards overcoming these barriers.[5] This study shows that the outreach service attracted a new and very different population, in terms of demographics and GUM experience, but the overriding influence on the patients' choice of site of care was closeness to home or work. However, outreach services such as this are also relatively time consuming and expensive compared with the larger clinic. These factors should be strongly considered when developing new outreach services.

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Clearance of HPV infection in middle aged men and women after 9 years' follow up

The age prevalence of human papillomavirus (HPV) cervical infections is high in young age groups, declining sharply thereafter, reaching a steady state after age 40.[1] Women who remain persistent carriers of HPV DNA are considered at high risk for cervical cancer. To investigate viral persistence over an extended period of time, we re-contacted, in 1997–8, a group of women who participated in case-control studies between 1988–91 in Spain, Colombia, and Brazil.[2–4] Among women with confirmed normal cervical smears, follow up was scheduled for all women positive for HPV cervical detection (n=91) and for a group of age matched women who were HPV negative (n=254). All but one HPV infection were of high risk types. Husbands of these women in Colombia and in Spain, initially detected to be HPV positive (n=110), were also re-contacted. Follow up data were obtained from personal interview and from HPV DNA tested in cervical and urethral (men) exfoliated cells. The follow up protocol was approved by the institution's ethics committee and participants signed an informed consent. Finally, 198 women (57.4%) and 42 (38.2%) men were re-interviewed. Of them, 99 women provided cervical samples and 14 men provided urethral samples. HPV detection was carried out in the same laboratories that tested the initial samples. The Spanish and Colombian samples were tested using the PMY09/11 PCR L1 based method and the Brazilian samples were tested using the GP5+/6+ PCR system.

The average age at entry was 50.8 years for women and 51.9 for men (range 27–79 years). After an average of 9 years of follow up (range 7–11), none of the women examined harboured HPV DNA irrespective of their initial HPV status (table 1). The follow up cervical smear identified three women in Colombia and one in Brazil with a cervical intraepithelial neoplasm grade I. All were HPV negative. Among the HPV positive husbands who were re-examined, two remained positive (14.3%, 95% CI 3.7 to 32.6), one for low risk type HPV 6 and one for high risk type HPV 16. No penile lesions were detected upon clinical examination. An active search in the corresponding cancer registries did not identify any case of invasive cervical or penile cancer in the target population.

The data, albeit limited by small size, suggest that HPV infection in middle age is subject to clearance as is commonly observed in young women.[4] All women with follow up information had no HPV infection after an average follow up period of 9 years. None of the women developed advanced cervical disease in the interval as would be expected in some cases of chronic carriers of HPV infection.

Table 1 HPV detection in women and men at entry and at follow up time

	Spain	Colombia	Brazil	All
Women:				
HPV status at entry				
Negative	13	31	35	79
Positive	3	5*	12	20
HPV status at follow up				
Negative	16	36	47	99
Positive	0	0	0	0
Men:				
HPV status at entry				
Positive	9	5	–	14
HPV status at follow up				
Positive	1**	1***	–	2
Negative	8	4	–	12

*One women was positive for a low risk HPV DNA, **HPV 6, ***HPV 16.

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Are all genital *Chlamydia trachomatis* infections pathogenic? A study in men

Chlamydia trachomatis infection of the genital tract is initially mild and most sufferers do not know they have the infection.[1] However, over a period of time untreated infections may be associated with considerable pathology.

During a recent prospective survey of 500 men presenting in this department we recorded the Gram stained microscopy results from urethral swabs. These were scored by the pathologist who had no knowledge of the patient. They were scored on a scale of 1–5, corresponding to 0, 1–4, 5–9, 10–14, and >15 polymorphonuclear leucocytes (PMNLs). The results were later correlated with the routine chlamydia ELISA testing. The results are given in table 1.

It can be seen that in the chlamydia positive men 34% do not have urethritis, defined as >5 PMNLs per high power microscopy field. Similarly, urethritis was found in 22% of men who were non-chlamydia, non-gonococcal (non-GC). This clearly confirms that chlamydia infection does exist in the absence of urethritis. Furthermore, this 34% did not correspond with asymptomatic infection; 55% were symptomatic and 45% asymptomatic. Likewise in those with urethritis, 57% were symptomatic and 43% asymptomatic. The most common symptom was discharge and the peak duration was 21 days. Of the total chlamydia positive group 16% had neither symptoms nor urethritis.

Is it therefore possible that not all chlamydia infection leads to pathology and morbidity? Perhaps the non-inflammatory serovars are not harmful and do not produce the pathology that others do.[2] Evidence does exist which suggests that different serovars do produce different pathology.[3 4]

Of the 22% of men who had non-chlamydia non-GC non-specific urethritis it seems highly likely that these will be due to *Mycoplasma genitalium*.[5] In future we intend to test for *Mycoplasma genitalium* and to compare the pathology that these two organisms produce.

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Follow up of patients who have been recently sexually assaulted

Follow up rates for victims of sexual assault have traditionally been low, ranging from 10%[1] to 31%.[2] Rates improved if a follow up appointment was arranged at a genitourinary medicine clinic (GUM) clinic—50% of the 70% of patients for whom an appointment was made.[3]

FAMSAC (Forensic and Medical Sexual Assault Care) is a medical sexual assault service that has been integrated into an existing sexual health clinic for the past 19 months. A total of 114 sexual assault patients have used the service since November 2001(106 females, 8 males). Consent for follow up contact from the nurse coordinator of FAMSAC is sought at the initial consultation; this occurs in the first week after the report of sexual assault.

The following elements of care are addressed at the follow up visit:

- Follow up screening for sexually transmitted infections and hepatitis B vaccination (initiation or continuation)
- Follow up pregnancy testing as necessary (emergency contraception is given at the initial medical examination)
- Management and follow up of injuries as necessary
- Referral to counselling services (patients are offered immediate independent support at the time of medical examination)
- Discussion of legal matters (police action, victim's compensation, etc)
- Health promotion information and safety awareness strategies.

Patient follow up is the responsibility of the nurse coordinator with medical support as required, other duties include organising the preparation of legal reports, court appearances, and support of the medical officers ensuring continuity of care for the patient and minimal delay in the legal process.

To date we have contacted 97/114 (85%) of our patients. These rates are significantly higher than those reported by Herbert,[1] who reports a loss to follow up of 46% within 24–48 hours. This may be due in part to better access to telephones since her 1988–90 study—53% of our patients own a mobile telephone and 80% of patients gave a home contact telephone number. A total of 17 patients were unable to be contacted.

We offer a further opportunity for contact 3 months after the assault. To date 73 patients have been eligible; of these 59 (80%) have been contacted and 39 have attended (66%). Three patients who received HIV prophylaxis were offered a 6 month follow up appointment; all of those have attended.

The sexual health clinic appears to be an ideal venue for follow up of these patients, who appear to be at higher risk of acquiring a sexually transmitted infection.[4] The nurse coordinator model has enabled the follow up of patients at higher rates than previously reported.

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Patients lost to follow up: experience of an HIV clinic

The National Strategy for Sexual Health and HIV aims to reduce the pool of undiagnosed HIV infection in the United Kingdom.[1] Potential benefits of earlier diagnosis include timely initiation of highly active antiretroviral therapy (HAART), prevention of complications of HIV, screening for STIs that are known to enhance HIV infectivity,[2] and psychological support. Patients may not realise these benefits if they are lost to follow up (LFU). Previous studies have found associations between frequent non-attendance (as distinct from LFU) and less severe illness,[3] drug addiction,[4] and patients' health beliefs.[5]

We studied the case notes of all surviving patients who had enrolled in our HIV clinic within a 15 month period but had not received medical care for 12 months or more. Patients were excluded if they had been transferred to other centres or if the case notes were unavailable. For each case, one control was matched for date of first attendance. Data including demographics, virological and immunological markers, antiretroviral therapy, and psychological and social factors were collected from the notes using a standardised proforma.

Ninety four cases were found. LFU patients were younger than controls (table 1), with a trend towards more patients being born outside the United Kingdom. Cases were about half as likely to be on HAART than controls (RR 0.46, 95% CI 0.32 to 0.66). This

Table 1 Microscopy

	Chlamydia positive, non-GC		Chlamydia negative, non-GC	
PMNLs	No		No	
0	9		284	
1–4	6	Total 34%	55	Total 78%
5–9	13		52	
10–14	12		21	
>15	4	Total 66%	21	Total 22%

Table 1 Comparison of characteristics of patients lost to follow up ("cases") with matched controls. Statistical analysis by Mann-Whitney test or χ^2 test

	Cases (%)	Controls (%)	p Value
Median age (years)	34	37	0.0068
Median CD4 (cells $\times 10^6$/l)	415	470	0.49
Median $\log_{10}$ VL in patients off therapy	4.03	3.96	0.48
Ethnicity:			
Black African	17 (18.1)	18 (19.1)	0.62
White	58 (61.7)	62 (66.0)	
Other	12 (12.8)	8 (8.5)	
Not known	7 (7.4)	6 (6.4)	
Born in UK	34 (36.2)	40 (42.6)	0.072
Transmission by sex between men	63 (67.0)	64 (68.1)	0.70
CDC stage			
A	58 (61.7)	48 (51.1)	
B	22 (23.4)	28 (29.8)	
C	14 (14.9)	18 (19.1)	0.37
On HAART at last visit	26 (27.7)	57 (60.6)	<0.001
Attended another centre before the centre of this study	31 (33.0)	20 (21.3)	0.104
General practitioner details documented	43 (45.7)	38 (40.4)	0.38
Written correspondence with GP	20 (21.3)	15 (16.0)	0.857

association was true regardless of disease stage. Numbers were too small to analyse any association between LFU and poor adherence to HAART. There were no statistically significant differences in sex, ethnicity, disease stage, or surrogate markers. The number of general practitioners with whom communication was maintained was equally low in both groups.

The number of cases with a history of psychiatric illness, substance abuse, deliberate self harm, or use of counselling or psychiatric services was not significantly different from controls. Further data provided by CDSC showed that at least 29 cases (31%) had attended another clinic for follow up, without correspondence being made between centres. These included only eight of 26 (30%) cases on HAART and eight of 22 (36%) cases with CDC stage C or CD4 count under 200 cells $\times 10^6$/l. (Soundex code and date of birth were used for matching records without compromising patient identity, and subsequent treatment locations were not specified.)

This study highlights that patients who are LFU include those at all stages of disease and are not necessarily those with a lack of clinical need. It is of interest that the association between not being on HAART and being LFU is independent of clinical stage. The patients who discontinued care from our centre were a diverse group in terms of illness, ethnicity, and transmission category, typical of the clinic population as a whole.

In a patient who is symptom free and not on HAART, one might argue that a year without specialist follow up is of no clinical importance. Such patients might be better managed in primary care or in a setting which focuses less on the patient's disease state than on their wellbeing. An appropriately designed study might further elucidate reasons that lead patients to default from follow up. Interventions need to be in place to prevent loss of follow up of patients who are at high risk of disease progression or who are on HAART.

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Contributors

LH developed the study, retrieved and analyzed the data, and co-wrote the text; SE co-wrote the text; DM conceived the study and provided comments on the text; KS provided further data from CDSC.

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Interactive continuing medical education (CME) and its influence on the working practices of genitourinary clinicians

Didactic lectures are the traditional vehicle used by the MSSVD for updating clinicians on developments in the specialty, but there is mounting evidence that this sort of educational format is unlikely to change clinical practice, whereas a format which more actively involves participants can produce measurable changes.[1] The MSSVD decided to formally assess the impact of combining the lecture format with an interactive approach at one of its national update meetings. The subject under review at this meeting was human papillomavirus (HPV) infection. Specialists attending were asked to vote electronically on a combination of knowledge base and treatment strategy questions. They were then presented with information on the correct answers to the questions, and on currently preferred treatments. Feedback questionnaires invited comparison with the usual didactic approach. Participants were also asked whether their clinical practice would change as a result of the meeting. Seventy MSSVD members signed for CME, and 43 returned feedback questionnaires at the end of the event. A small majority of 51% preferred the new format to the usual didactic format, while a minority of 21% preferred the traditional approach. Despite only a small majority preferring the interactive over the customary didactic lecture format, a clear majority of respondents, 70%, felt that the interactive format was better able to maintain their concentration and interest, and 60% felt the new format was more likely to induce reflection and stimulate change. To our surprise, 74% of respondents planned to make some change in clinical practice as a result of attending the event. Three months later attendees were balloted by post to ascertain whether a change had in fact occurred. The response rate was a disappointing 37%, but of this group 30% reported having already changed their practice, and a further 27% still planned to do so as soon as circumstances permitted. A large proportion of respondents stated explicitly what changes had been made. The major influence was on a cessation in the use of podophyllin, and an increased use of the topical wart treatments imiquimod and podophyllotoxin.

The incorporation of hand held electronic response units to facilitate audience participation in educational events requires considerably more preparation on the part of the organiser than would a conventional lecture. The data from this small study suggest that in terms of outcome the effort expended is worthwhile. A variety of factors make the interactive technology which was employed here powerful: firstly, each participant communicates directly not only with the lecturer, but also anonymously with all his peers; secondly, the event has to be formatted in such a way as to directly engage participants by requiring them answer clinically related questions; and thirdly, the organiser has to focus to a higher degree than normal on how everything that is said will be perceived.

We have been encouraged by the outcome of this event, and we believe that clinicians would benefit from increased utilisation of this interactive educational method.

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Lower motor neuron syndrome and HIV infection

A 33 year old right handed male injection drug user presented with a 4 week history of progressive shoulder and upper arm weakness and difficulty in speaking, together with a 2 week history of fever and a productive cough. He had been HIV-1 antibody positive for 16 years, had no AIDS defining illness, and was on no antiretroviral therapy. The CD4 count was 110 cells $\times 10^6$/l and viral load was 56 000 copies/ml. There was no past history of, nor had the patient recently been vaccinated against, poliomyelitis; the patient was HB anticore and hepatitis C antibody positive. There was no family history of neurological disease.

On examination there were signs of a right basal pneumonia; general examination was otherwise normal. Neurological examination showed he was alert and orientated, dysarthric, and had bilateral facial weakness worse on the left; the palate deviated to the right and there were fasciculations of the tongue, which was not wasted. Neck flexion was weak. The other cranial nerves were normal. In the limbs tone and sensation were normal. In the arms power (MRC grade) was 2/5 in the shoulders, 4–/5 in the elbows and wrists/fingers. In the legs power was 4–/5 globally. Reflexes were absent in the left biceps, triceps, and supinator but otherwise they were intact; plantar reflexes were flexor.

Blood cultures grew *Streptococcus pneumoniae*; with broad spectrum antibiotics the patient recovered from the pneumonia. An electromyogram showed widespread denervation in all muscle groups tested (left masseter, right sternomastoid, deltoid, biceps, first dorsal interosseous, vastus medialis, and tibialis anterior). Nerve conduction studies revealed a mild sensory neuropathy. There was no evidence of multifocal motor neuropathy with conduction block. Tests were performed in order to exclude secondary causes of a lower motor neuron syndrome, other than HIV itself. These gave normal results for urea and electrolytes, liver function tests, calcium and phosphate, random blood glucose, CPK, thyroid function tests, serum electrophoresis (polyclonal gammaglobulinaemia only), serum B12, and RBC folate. Negative results were obtained for serum lead, TPHA, rheumatoid latex, ANA, ANCA and autoantibody screen, acetylcholine receptor antibodies, anti-ganglioside antibodies, anti-neuronal nuclear antibody type 1 and anti-Purkinje cell cytoplasmic antibody type 1 antibodies, HTLV-1 and HTLV-2 antibodies, and Lyme serology. Magnetic resonance imaging of the head, corticomedullary junction and cervical spine, with and without contrast, was normal. The patient declined further investigation and antiretroviral therapy. He deteriorated and died 3 weeks later. Necropsy was not performed.

Moulignier *et al* described six HIV infected patients who presented with a rapidly progressive disorder resembling amyotrophic lateral sclerosis (ALS); all patients showed neurological improvement with antiretroviral therapy.[1] These cases had a mixture of upper and lower motor neuron signs, unlike this case, which had only lower motor neuron signs, resembling the progressive muscular atrophy variant of ALS.[2] This presentation has previously been reported in an HIV infected patient who improved with antiretroviral therapy.[3]

HIV is therefore in the differential diagnosis of patients presenting with a motor neuron disease-like syndrome, in addition to those previously described—including cervical spondylosis, hyperthyroidism and hypothyroidism, heavy metal poisoning, and multifocal motor neuropathy with block. In the general population a viral aetiology for motor neuron disease has been suggested.[4] Reports of clinical improvement in response to highly active antiretroviral therapy, concomitant with suppression of viral load, and increases in CD4 counts lend support to the hypothesis of HIV as an aetiological agent for this presentation.[1 3 5]

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Syphilis specific antibodies in newborn infants in Lower Saxony, Germany 1993–2001

In 1979, a test to detect syphilis specific antibodies was added to the neonatal screening programme for metabolic diseases in Lower Saxony.[1] We report test results for the period 1993 to the end of 2001 (684 156 samples). Analysis of data included calculation of annual incidence rates, dependency of maternal age, and birth weight of infants on the incidence of positive results.

Neonatal screening for syphilis specific antibodies does not aim (and is not able) to diagnose congenital syphilis. The goal of our test is to remind physicians responsible for the infants of the positive history of the mother, so they can check whether sufficient treatment of the maternal infection can be proved or whether further measures are necessary.[2]

Material was eluted from dried blood samples collected on filter paper. Syphilis specific antibodies were identified using *Treponema pallidum* haemagglutination (TPHA) test (Fujuzoki, Tokyo, Japan) or, since 1999, *Treponema pallidum* particle agglutination (TPPA) test (Fujirebio Inc, Tokyo, Japan). Extract and suspension of sensitised erythrocytes or particles were mixed at a dilution of 1:80. All samples showing a reaction at this dilution were assessed as being positive and retested for quantification of antibodies. Both test versions are based on indirect particle agglutination caused by 7S-IgG and 19S-IgM antibodies against *Treponema pallidum*.

During the observation period the incidence of infants with a positive test result increased significantly from 11.05 cases per 10 000 infants in 1993 to 19.73 cases per 10 000 children in 2001 (R^2 for the linear regression: 0.75, $p = 0.003$) (fig 1). The level of significance would be even higher if it took into account that the formerly used TPHA test produced a small but not exactly defined number of false positive results.

In former years, the incidence of syphilis antibodies in newborns increased with maternal age. Recently, age distribution of mothers of antibody positive babies changed: a large number of young mothers had babies with positive antibodies. Data for the years 1993-7 were compared with those of 1998–2001 by using the χ^2 test (two tailed p values). The most obvious change occurred in the group of 20–24 years old and 25–29 year old mothers ($p < 0.001$).

A significant correlation between birth weight and the probability of a positive test result was found. Data on birth weight were available for 405 786 newborns (81.2%). The incidence (cases per 10 000 tested infants) of syphilis antibodies in very low birthweight infants (<1500 g) and in low birthweight infants (<2500 g) was significantly higher (45.4 *v* 27.3, $p<0.001$ *v* 0.002) than in the total group (19.2).

Although the syphilis test was not introduced for epidemiological reasons, some conclusions can be drawn with respect to epidemiology. Firstly, there has been a significant rise in the incidence of syphilis antibody positive infants in the past 9 years, indicating an increasing number of young women who had or have a syphilis infection. Therefore, physicians in charge of newborn infants must be aware of the increasing probability of finding a congenital infection. Secondly, the probability of a positive test result is higher in low birthweight infants and in infants of younger mothers.

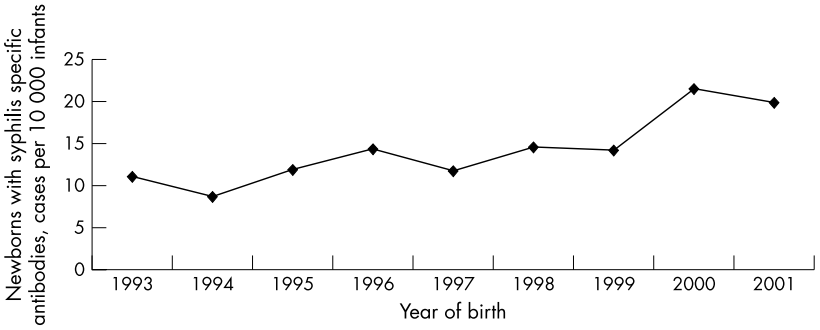

Figure 1 Trend of incidence of syphilis specific antibodies in newborns in Lower Saxony, 1993–2001.

Contributors
US, JS, and SS were responsible for evaluating the antibody test; US wrote the first draft of the manuscript and did the epidemiological and statistical analyses; JS and SS contributed to the interpretation and discussion of the data and revised the different versions of the paper; NJ adapted the test method for dried blood samples and guaranteed the quality of the testing; MA created the structure of the data system and helped with the analysis of the data.

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Chlamydia testing before termination of pregnancy

In Nottingham all women undergoing a termination of pregnancy (TOP) through the NHS sector are screened for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* and receive preoperative antichlamydial prophylaxis. Nottingham has a high level of both chlamydial and gonococcal infection, hence the need to include dual screening.

In order to maximise service capacity and provide sufficient access for women requesting a TOP some procedures are contracted out to external services such as the British Pregnancy Advisory Service (BPAS). Hence, we read with interest the paper by Mallinson and colleagues.[1]

In our service, to ensure that all patients receive a standard level of care, *C trachomatis* and *N gonorrhoeae* screening pre-TOP has been incorporated into the local NHS contract with BPAS. The screening is by nucleic acid amplification from a urine sample. A protocol for referring positive results to the local genitourinary medicine (GUM) clinic with the patient's permission is incorporated into the programme to allow follow up and partner notification.

Mallinson *et al* report that only 35% of women would have screening for *C trachomatis* if they had to pay a supplementary charge for the test, even if this was low, at 20, compared to the private cost of a TOP.

Identification and treatment of genital infection is key to good sexual health and although prophylactic antibiotic therapy will protect against immediate complications of the operative procedure it will not allow for contact tracing and avoidance of reacquisition, nor will it deal with the community pool of infection.[2] For areas with a high prevalence of *N gonorrhoeae* infection additional screening should be considered.

We believe that all services offering TOP, whether NHS or privately funded, should have screening, treatment, and a contact tracing plan incorporated into the procedure. The costs of screening should be included in the package and not be an optional extra. This is particularly important for women who, at a vulnerable time, may not be aware of the wider health benefits of screening.

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Recent pilot studies of chlamydia screening

The recent pilot studies of chlamydia screening in Portsmouth and the Wirral show that there is a substantial burden of chlamydial infection in young women and that high uptake of screening and good coverage of the target population can be achieved.[1 2] This is important. However, the pilot studies do not demonstrate the effectiveness of chlamydia screening in reducing either morbidity or the prevalence of infection (nor were they designed to do this). In fact, further screening (in the recall study[3]) of the same target group in the same settings, approximately 16 months after the pilot screening had ended, shows no change in chlamydia prevalence: 11.2% (pilot) *v* 11.9% (recall) in the Wirral and 9.8% *v* 11.4% in Portsmouth. Opportunistic screening continued after the pilot in family planning clinics in the Wirral, but there has been no reduction in chlamydia prevalence (11.4% during March-August 2000 compared with 12.4% during March-August 2002).

It would be wrong to conclude that opportunistic screening does not work. The incidence of chlamydia in the United Kingdom appears to be rising and it may be that the prevalence found in the recall study would have been higher still in the absence of earlier screening and treatment. Thus, controlled studies are needed to determine effectiveness empirically. Economic modelling is important for assessing the long term effects of different screening scenarios but is of little value without reliable empirical data for which it cannot substitute.

The accompanying editorial[4] addresses important questions about screening men, screening in primary care, and asks "what further evidence is required before national screening for all at-risk groups?" Screening both sexes is clearly a more expensive, but potentially more cost effective, strategy than screening women alone. Since the vast majority of general practices outside the pilot areas are not currently involved in any organised screening programme, the ideal opportunity now exists for a randomised evaluation of different strategies to determine the most cost effective approach to screening in general practice.

In reality, any screening programme in general practice would take considerable time to be introduced on a large scale. Phased introduction in the context of a randomised trial poses no ethical problems because the optimal approach (for example, women or both sexes? opportunistic or cyclical?) is unclear and no strategy has yet been shown to reduce chlamydia prevalence or morbidity in the United Kingdom.

We propose a trial in which general practices would be randomised to screening young women alone, screening young men and women, or to no defined screening programme. Effectiveness would be determined by comparison of chlamydia prevalence or associated morbidity across the three arms at follow up. Such a trial, combined with an economic evaluation of the different screening strategies, would provide the direct, robust evidence that is currently lacking but essential to achieve effective control of chlamydia in the United Kingdom through wise use of resources.

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NOTICES

7th European Society of Contraception Seminar

An ESC seminar entitled: "Contraception practice in Europe: differences in availability and accessibility" will be held in Budapest, Hungary, on 12–13 September 2003.
Further details: ESC Central Office, Essenestraat 77, B-1740 Ternat, Belgium (tel: 32 2 582 08 52; fax: 32 2 582 55 15; email: esccentraloffice@contraception-esc.com and website: http://www.contraception-esc.com/).

8th European Society of Contraception Congress

The 8th European Society of Contraception Congress will be held from 23-26 June 2004 in Edinburgh, Scotland, United Kingdom. Further details: ESC Central Office, c/o Orga-Med Congress Office, Essenestraat 77, B-1740 Ternat, Belgium (tel: 32 2 582 08 52; fax: 32 2 582 55 15; email: orgamed.ann@pandora.be and website: http://www.contraception-esc.com/edinburgh.htm).