Contributors

JS working on *Chlamydia trachomatis* infections, database management, writing of the manuscript; CS responsible for the statistical analyses; IV and SM, technicians performing all chlamydia typing experiments (culture and PCR based RFLP typing) and sample database management; HSAF, in charge of the STD outpatient clinic in Amsterdam, responsible for the logistics of the sample collection, critically reviewing the manuscript; ASP and RAC, providing the setting for the work performed, guidance of JS on this topic, and critically reading the manuscript; SAM, responsible for the study design, direct guidance of JS, critically reading the manuscript.

J Spaargaren, I Verhaest, S Mooij
Public Health Laboratory, Municipal Health Service, Amsterdam, Netherlands

C Smit
Cluster Infectious Diseases, Department of HIV and STI Research, Municipal Health Service, Amsterdam, Netherlands

H S A Fennema
Sexual Transmitted Diseases Outpatient Clinic, Municipal Health Service, Amsterdam, Netherlands

R A Coutinho
Municipal Health Service, Amsterdam, Netherlands

A Salvador Peña, S A Morré
Laboratory of Immunogenetics, Section Immunogenetics of Infectious Diseases, VU University Medical Center, Amsterdam, Netherlands

Correspondence to: Joke Spaargaren, MD, Public Health Laboratory, Municipal Health Service of Amsterdam, Nieuwe Achtergracht 100, 1018 WT, Amsterdam, Netherlands; jspaargaren@gggd.amsterdam.nl

Accepted for publication 5 August 2003

References

1 **Morré SA**, Ossewaarde JM, Lan J, *et al.* Serotyping and genotyping of genital Chlamydia trachomatis isolates reveal variants of serovars Ba, G, and J as confirmed by omp1 nucleotide sequence analysis. *J Clin Microbiol* 1998;**36**:345–51.
2 **Dean D**, Miller K. Molecular and mutation trend analysis of omp1 alleles for serovar E of Chlamydia trachomatis. Implications for the immunopathogenesis of disease. *J Clin Invest* 1997;**99**:475–83.
3 **Gerbase A**, Rowley J, Heymann D, *et al.* Global prevalence and incidence estimates of selected curable STDs. *Sex Transm Infect* 1998;**74**:S12–S14.
4 **Morré SA**, Welte R, Postma MJ. Major improvements in cost effectiveness of screening women for Chlamydia trachomatis using pooled urine specimens and high performance testing. *Sex Transm Infect* 2002;**78**:74–5.
5 **Postma MJ**, Welte R, van den Hoek JA, *et al.* Comparing cost effectiveness of screening women for Chlamydia trachomatis in systematic and opportunistic approaches. *Sex Transm Infect* 2002;**78**:73–4.
6 **Anttila T**, Saikku P, Koskela P, *et al.* Serotypes of Chlamydia trachomatis and risk for development of cervical squamous cell carcinoma. *JAMA* 2001;**285**:47–51.
7 **Wagenvoort JHT**, Suchland RJ, Stamm WE. Serovar distribution of urogenital Chlamydia trachomatis strains in the Netherlands. *Genitourin Med* 1988;**64**:159–61.
8 **Van de Laar MJ**, Lan J, van Duynhoven YT, *et al.* Differences in clinical manifestations of genital chlamydial infections related to serovars. *Genitourin Med* 1996;**72**:261–5.
9 **Morre SA**, Ossewaarde JM, Lan J, *et al.* Serotyping and genotyping of genital Chlamydia trachomatis isolates reveal variants of serovars Ba, G, and J as confirmed by omp1 nucleotide sequence analysis. *J Clin Microbiol* 1998;**36**:345–51.
10 **Ossewaarde JM**, Rieffe M, de Vries A, *et al.* Comparison of two panels of monoclonal antibodies for determination of Chlamydia trachomatis serovars. *J Clin Microbiol* 1994;**32**:2968–74.
11 **Lan J**, Melgers I, Meijer CJLM, *et al.* Prevalence and serovar distribution of asymptomatic cervical Chlamydia trachomatis infections as determined by highly sensitive PCR. *J Clin Microbiol* 1995;**33**:3194–7.
12 **Van Duynhoven YT**, Ossewaarde JM, Derksen-Nawrocki RP, *et al.* Chlamydia trachomatis genotypes: correlation with clinical manifestations of infection and patients' characteristics. *Clin Infect Dis* 1997;**26**:314–22.
13 **Morre SA**, Rozendaal L, van Valkengoed IGM, *et al.* Urogenital Chlamydia trachomatis serovars in men and women with symtomatic and asymptomatic infection: an association with clinical manifestations? *J Clin Microbiol* 2000;**38**:2292–6.
14 **Morre SA**. Chlamydia trachomatis infections in the human urogenital tract. Thesis. 1999;chapter 9.

Surveillance of sexually transmitted infections in primary care

Surveillance for sexually transmitted infections must respond to increases in the provision of sexual health services outside genitourinary clinics. Simms *et al*[1] propose repeated panel surveys in general practices to improve surveillance in primary care, monitor changes in prevalence over time, and address the current lack of behavioural data.

There are some limitations to this approach. Firstly, prevalence surveys will not measure actual diagnostic activity in primary care and other clinical settings. This is essential for determining whether proposals from the National Strategy for Sexual Health[2] are being implemented effectively. Secondly, periodic surveys in different areas could not readily identify outbreaks. In the Bristol area, for example, most cases in an ongoing outbreak of sexually transmitted hepatitis B infection have presented to general practitioners.[3] Although genitourinary medicine clinics are the main setting for detecting outbreaks their impact in primary care should be monitored. Thirdly, the validity of panel surveys will depend on a high response rate and postal invitations often have low uptake.[4]

A single system cannot fulfil all the requirements for infectious disease surveillance. Laboratory reporting remains incomplete[5] and denominator data need to be available for infections other than chlamydia for appropriate interpretation of time trends. Routine collection of data on laboratory diagnosed sexually transmitted infections from all clinical settings and linkage to demographic data could complement current proposals.

The Avon Surveillance System for Sexually Transmitted Infections (ASSIST) integrates person based genitourinary clinic and laboratory data to provide information for action at local level and to inform national initiatives.[6] Data on positive and negative tests for laboratory diagnosed infections taken in any clinical setting are collected from the Health Protection Agency and trust laboratories. Postcode information for geographical mapping and small area analysis is obtained by matching pseudoanonymised data with GP registration databases. These data are also matched to disaggregate data from genitourinary and Brook clinics to identify duplicate tests and obtain geographic data for infections diagnosed in these settings.

ASSIST project data can be used to estimate the population burden of diagnosed infections and explore associations with demographic and socioeconomic characteristics over time. Automating regular data downloads and reporting will improve the timeliness of data collection to facilitate identification and monitoring of outbreaks. The wide coverage of the system can guide local service development and clinical practice and monitor the impact of the Sexual Health Strategy. For example, in 2001 half of all chlamydia tests and 44% of positive results came from GP, family planning, or Brook clinics. Nearly two thirds (62%) of those tested in general practice were over 25 years old in whom the positivity rate was 4% compared with 11% for under 25 year olds.

We propose that, while behavioural data obtained from panel surveys in primary care provide depth, sentinel surveillance of laboratory diagnosed infections in all clinical settings provides breadth, and both are needed for effective surveillance.

W Slater, N Low
Department of Social Medicine, University of Bristol, Canynge Hall, Whiteladies Road, Bristol BS8 2PR, UK

Correspondence to: Dr Nicola Low, Department of Social Medicine, University of Bristol, Canynge Hall, Whiteladies Road, Bristol BS8 2PR, UK; nicola.low@bristol.ac.uk

Accepted for publication 25 July 2003

References

1 **Simms I**, Hurtig A-K, Rogers PA, *et al.* Surveillance of sexually transmitted infections in primary care. *Sex Transm Infect* 2003;**79**:174–6.
2 **Department of Health**. *National strategy for sexual health and HIV*. London: DoH, 2001.
3 **Greenhouse P**, *et al.* Leeds: MSSVD Spring Meeting, 12–14 June 2003.
4 **Andersen B**, Olesen F, Moller JK, *et al.* Population-based strategies for outreach screening of urogenital chlamydia trachomatis infections: a randomized, controlled trial. *J Infect Dis* 2002;**185**:252–8.
5 **Hughes G**, Paine T, Thomas D. Surveillance of sexually transmitted infections in England and Wales. *Eurosurveillance* 2001;**6**:71–80.
6 **Slater W**, Low N for the ASSIST Project Group. *Avon Surveillance System for Sexually Transmitted Infections*. Eastbourne: Faculty of Public Health Medicine Annual Scientific Meeting, June, 2003:24–6.

Comparison of the serological response to treatment of early syphilis in HIV positive versus HIV negative individuals

The effectiveness of treatment for syphilis is evaluated by demonstrating declining titres of the non-treponemal antibody tests—for example, the rapid plasma reagin (RPR). The serological response in HIV co-infected individuals has been the subject of debate, with some studies reporting a similar serological response[1 2] and others a delayed response in HIV positive patients.[3 4]

A resurgence of infectious syphilis has occurred in Manchester, United Kingdom, in recent years.[5] From January 1999 to August 2002, 379 cases of early syphilis were

Table 1 Number of patients in each group and the mean four dilution drop in RPR titres 3, 6, and 12 months following treatment in HIV positive compared to HIV negative individuals

	3 months		6 months		12 months	
	No of patients	Mean drop in RPR	No of patients	Mean drop in RPR	No of patients	Mean drop in RPR
HIV positive	31	1.71	20	2.20	12	2.54
HIV negative	23	1.57	17	2.18	11	3.45
p Value (*t* test)		0.78		0.97		0.35

reported and 28% were HIV co-infected (CDSC North West, personal communication). North Manchester General Hospital (NMGH) houses one of the city's three genitourinary medicine clinics and the regional infectious diseases unit, providing care for approximately 1000 HIV positive individuals. Our aim was to evaluate the serological response to treatment for early syphilis in HIV positive and negative individuals treated at NMGH.

Between January 1999 and March 2002, 75 men (72 homosexual) and three women were diagnosed with early syphilis. Of the 78, 40/75 men were HIV positive. The RPR results 3, 6, and 12 months following treatment for early syphilis were collected by retrospective case note review. Exclusion criteria were syphilis re-infection during the study period (two patients), HIV status undetermined (six patients declined HIV testing), or lost to follow up (16 patients). Patients were divided into two groups—HIV positive and HIV negative individuals. From the sequential RPR results 3, 6, and 12 months following treatment the mean reduction in RPR titres in each group at these points was calculated, and statistical comparison made between the two groups using the Student's *t* test.

The results are shown in table 1.

We found no significant difference in the reduction of RPR titres in the year following treatment between the HIV positive and negative groups.

Of the 31 HIV positive individuals in this study, 17 were taking highly active antiretroviral therapy at the time their syphilis was diagnosed. The average CD4 lymphocyte count in this group was 460×10^6/l (range 33–1000) and viral load 83 515 copies/ml (range <50–442 000).

Limitations of the study are that it was retrospective, patients in the HIV positive and negative groups were not matched individually for variables such as stage of syphilis or initial RPR titre, and the treatment regimens varied (all received at least 10 days intramuscular procaine penicillin or 14 days oral doxycycline, and HIV positive patients prolonged courses of treatment in accordance with the UK national guidelines for the treatment of early syphilis[6]). No account was taken of the patient's CD4 lymphocyte count, or whether they were receiving antiretroviral therapy. However, the cohort represents a diverse group of HIV positive individuals and we consider them representative of those generally encountered in clinical practice.

We demonstrated that in clinical practice the RPR remains a valid way of assessing the response to treatment of syphilis in those co-infected with HIV. Larger prospective studies, with cases and controls matched for variables such as the stage of syphilis at diagnosis, the initial RPR titre, and treatment regimens are required.

M A Kingston, S P Higgins
Department of Genitourinary Medicine, North Manchester General Hospital, Manchester M8 5RB, UK

Correspondence to: Dr M A Kingston, Department of Genitourinary Medicine, North Manchester General Hospital, Delaunays Road, Crumpsall, Manchester M8 5RB, UK; davemags@ntlworldcom

Accepted for publication 1 September 2003

References

1 **Janier M**, Chastang C, Spindler E, *et al.* A prospective study of the influence of HIV status on the seroreversion of serological tests for syphilis. *Dermatology* 1999;**198**:362–9.
2 **Goeman J**, Kivuvu M, Nzila N, *et al.* Similar serological response to conventional therapy for syphilis among HIV-positive and HIV-negative women. *Genitourin Med* 1995;**71**:275–9.
3 **Telzak EE**, Greenberg MS, Harrison J, *et al.* Syphilis response in HIV-infected individuals. *AIDS* 1991;**5**:591–5.
4 **Yinnon AM**, Coury-Doniger P, Polito R, *et al.* Serological response to treatment of syphilis in patients with HIV infection. *Arch Intern Med* 1996;**156**:321–5.
5 **Anon**. Increased transmission of syphilis in Manchester. *Commun Dis Rep CDR Wkly* 2000;**10**:89.
6 **Clinical Effectiveness Group** (Association of Genitourinary Medicine and Medical Society for the Study of Venereal Diseases). National guideline for the management of early syphilis. *Sex Transm Infect* 1999;**75**(Suppl 1):S29–33.

Is it time to rethink the roles of health professionals in the HIV outpatient setting?

HIV outpatient services across the United Kingdom are seeing large increases in their patient workload. This is fuelled by the success of highly active antiretroviral therapy (HAART), resulting in fewer deaths, and by increases in the number of new diagnoses.[1] A further rise is anticipated in England following implementation of ''The national strategy for sexual health and HIV'' that plans to increase HIV testing dramatically in order to reduce the number of undiagnosed HIV infections by 50% by the end of 2007.[2] The success of HAART has also changed the focus of many doctor-patient outpatient consultations from prophylaxis and management of opportunistic infections, to issues related to the complexities of HAART, sexual behaviour risk reduction and promoting healthy lifestyles. As a result, HIV service providers need to develop new models of care that can deliver high quality, cost effective care to meet these changing demands. We reviewed the role of the doctor in providing routine outpatient HIV care.

Data were collected prospectively on all HIV infected patients attending for routine care between 24 June 2002 and 17 July 2002. We obtained complete data for 431 of 433 consecutive patient appointments. Of these, 79/431 (18%) did not attend their appointment. Of the remaining 352, the median age was 38 years (range 17–70), the majority were male (291, 83%), of white ethnicity (251, 71%) with a median CD4 count of 350×10^6/l (range 10–1390) and viral load (VL) of 600 copies/ml (range <50–1.2 million).

Consultants saw two thirds of attendees, specialist registrars a third. Almost half the consultations (173/352) were with patients who were defined by their physician as being asymptomatic with respect to their HIV infection; 66/173 (38%) of these were not taking HIV therapy and 107/173 (62%) were on HAART with a sustained virological response (VL<50 for >6 months). Over the next 8 months 53/66 (80%) of those not taking HAART and 68/107 (64%) taking HAART remained well with no significant changes to their health status. Of those on HAART, five required admission to hospital (bacterial pneumonia, three; cholecystitis, one; cryptococcal septicaemia, one), 12 made changes to their therapy (treatment interruption, four; virological rebound, three; toxicity, five) and 12 had intermittent low level viraemia (VL between 50 and 400). Other problems encountered in both groups included shingles (n = 7) and raised liver function tests (n = 11).

We have identified a high proportion of asymptomatic patients who are currently under regular review by medical staff and could potentially be managed by other healthcare professionals. Increased use of general practitioners and nurse practitioners are two potential options. We should review HIV outpatient service provision and move away from the ''acute-terminal'' model of care that has prevailed since the beginning of the epidemic and learn from chronic disease management models seen in other areas of the health service. As these new models are developed, in addition to staff requiring training to be conversant with common problems seen during routine monitoring of antiretroviral therapy, it is essential that evaluation is conducted to ensure similar levels ofeffectiveness, efficiency, and acceptability.

Contributors

SE and DM developed the study; SE, SD, and CG collected and analysed the data; SD and KM wrote the text. SE, DM, and CG provided comments on the text.

S S Dave
Mortimer Market Centre, Camden Primary Care Trust, London WC1E 6AU, UK

K Miles, C Griffiths, D E Mercey
Department of Sexually Transmitted Diseases, Royal Free and University College Medical School, University College London, UK

S G Edwards
Mortimer Market Centre, Camden Primary Care Trust, London WC1E 6AU, UK

Correspondence to: Dr Sangeeta S Dave, Mortimer Market Centre, Camden Primary Care Trust, London WC1E 6AU, UK; sangeeta.dave@camdenpct.nhs.uk

Funding: None.

Competing interests: None declared.