

New cases seen at genitourinary medicine clinics: England 1996

I Simms, G Hughes, AV Swan, PA Rogers, M Catchpole

Key points

Total diagnoses of acute sexually transmitted infections rose by 7% between 1995 and 1996

Twenty per cent more diagnoses of gonorrhoea, 11% of genital *Chlamydia trachomatis*, and 5% of genital warts were reported in 1996 than in 1995

Increased numbers of diagnoses were made in almost all regions

Increased numbers of diagnoses were associated particularly with teenage cases

About 20% of male cases of gonorrhoea and syphilis acquired their infection homosexually



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Summary

Statistics from genitourinary medicine clinics provide the most comprehensive source of data on the epidemiology of sexually transmitted infections (STI) in England. This is the first report to be published in a journal since 1986. The total number of diagnoses made increased by 5% between 1995 and 1996, the increase for females (8%) being greater than that for males (3%). Total diagnoses of acute STIs rose by 7% between 1995 and 1996. Diagnoses of gonorrhoea, genital *Chlamydia trachomatis*, and genital warts rose by 20%, 11%, and 5%, respectively, over the same period. Rises were most pronounced among teenagers and homosexual and bisexual men. These data suggest that these groups should continue to be a focus for sexual health education and intervention programmes. The behavioural and sociodemographic changes behind these increases are impossible to determine without further research. Many of the conditions for which a rising trend has been observed are curable. These trends suggest that safer practices in sexual behaviour are being neglected, which could leave many individuals vulnerable to HIV infection.

Introduction

Genitourinary medicine (GUMs) clinics are open access clinics that offer free, confidential services and treatment for all sexually transmitted infections (STIs), including HIV infection. The national network of GUM clinics was created as a result of the *Venereal disease regulations (1916)*¹. Clinics have had a statutory obligation to return data to the Department of Health since 1917. The content of the return has been revised three times since 1970, most recently in 1995. The most substantial revision was in 1988, as part of Dame Edith Körner's revision of government statistics. Data collected from GUM clinics on form KC60 is the primary dataset for the surveillance of STIs in England. In June 1996, responsibility for the collation and analysis of the data set, was delegated by the Department of Health to the PHLS Communicable Disease Surveillance Centre (CDSC). The 1996 data are the first to be published in a peer reviewed journal since 1986². We hope that this will enable a wider audience to consider their implications.

Methods

Returns from each GUM clinic include aggregated data on all conditions seen, whether or not treatment is required. All conditions are counted for each patient at each clinic attendance, so patients may be designated more than one condition at each attendance, but repeat visits within a quarter for the same diagnosis are counted only once. Numbers of new attendances of males and females are recorded for all conditions. Age group and male sexual orientation are recorded for selected conditions. Male sexual orientation is inferred by clinicians from the sexual

history taken during the consultation. Data from 213 clinics are included in the report – two clinics did not make returns for 1996. Age specific rates of attendance were used to standardise variations in age group ranges. Estimated rates of attendance for each age group were made by dividing the number of diagnoses in the calendar year by the estimated mid-year resident population of England³. The denominator used for patients under 16 years of age was taken as the population aged 14 and 15 years. The number of cases decreases with decreasing age – as a consequence the rate in this age group may have been overestimated.

Poisson linear regression analysis was used to estimate underlying trends for selected conditions from 1995 to 1996, allowing for sex, age group, and clinic effects. These estimates use data only from clinics represented in both years. Five per cent significance levels were used to indicate the strength of the relationships and 95% confidence intervals were used to indicate the precision with which effects were estimated. No attempt was made to introduce a formal correction for multiple testing in either of these procedures.

Results

The regression analysis showed that for several diagnoses the trends between 1995 and 1996 differed between the sexes more than could be explained by chance. For this reason the estimated underlying trends (figure 1) are given separately for the sexes. In addition, for some diagnoses – for example, gonorrhoea – there was a suggestion that the way the time trends differed with age group varied between regions. For the purpose of this paper, distribution by age group and region are presented for each diagnosis and for both sexes (tables 1 and 2, respectively). In all cases trends have been averaged over the clinics in each region, taking into account the relative numbers of diagnoses reported by the clinics.

All conditions

All conditions seen at GUM clinics in 1996 and 1995 are presented in tables 3 and 4. A number of inconsistencies were detected in the 1995 data, which were revised at CDSC after extensive follow up. Total diagnoses (syphilis, gonorrhoea, chlamydia etc, codes A, B, C and E, respectively) increased by 5% from 421 200 in 1995 to 443 787 in 1996. Male diagnoses rose by 3% (from 193 654 to 198 798) and female diagnoses by 8% (from 227 546 to 244 989). Workload (codes D and P) associated with males rose by 7% (from 201 366 to 214 402) and with females by 15% (211 705 to 242 413) between 1995 and 1996. Over the same period, a 7% increase (from 174 598 to 186 583) in diagnoses of acute sexually transmitted infections (STIs; see Box for definition) was observed. Sixty per cent of diagnoses of acute STIs in 1996 were in males.

Common bacterial sexually transmitted infections

Diagnoses of several bacterial STIs increased between 1995 and 1996 (tables 3 and 4). There were 11 651 new diagnoses of uncomplicated gonorrhoea reported in 1996, compared with 9736 cases in 1995, an increase of 20% in both men (from 6471 to 7749) and women (from 3265 to 3902). Male diagnoses of gonorrhoea outnumbered females by 2:1 in

1996. New diagnoses of genital *Chlamydia trachomatis* increased by 11%, from 28 682 in 1995 to 31 857 in 1996. Diagnoses of genital *C. trachomatis* rose by 9% in males (from 12 521 to 13 694) and by 12% in females (from 16 161 to 18 163) between 1995 and 1996. Diagnoses in females outnumbered diagnoses in males by 1.3:1.

Diagnoses of uncomplicated non-gonococcal or non-

Table 1 Regional distribution of new diagnoses by sex, 1996

Region	sex	Infectious syphilis	Uncomplicated gonorrhoea	Uncomplicated chlamydia	Herpes simplex first attack	Wart virus first attack
Northern and Yorkshire	Male	9	547	1703	444	3504
	Female	2	253	2313	794	3606
	Total	11	800	4016	1238	7110
Trent	Male	5	746	1614	490	2654
	Female	0	588	2941	968	2788
	Total	5	1334	4555	1458	5442
Anglia and Oxford	Male	3	331	1144	525	2327
	Female	2	164	1533	928	2527
	Total	5	495	2677	1453	4854
North Thames	Male	27	2483	2771	1460	5195
	Female	13	857	3745	2290	4794
	Total	40	3340	6516	3750	9989
South Thames	Male	14	1618	1812	987	3790
	Female	4	960	2438	1566	3790
	Total	18	2578	4250	2553	7580
South and West	Male	9	404	1543	643	3059
	Female	4	200	1738	1001	3365
	Total	13	604	3281	1644	6424
West Midlands	Male	1	849	1513	547	2385
	Female	0	547	1423	854	2521
	Total	1	1396	2936	1401	4906
North West	Male	16	771	1594	545	3722
	Female	8	333	2032	948	3710
	Total	24	1104	3626	1493	7432

Table 2 New diagnoses of selected conditions by sex and age: 1996

Code and condition	sex	age (years)									Total
		>15	15	16-19	20-24	25-34	35-44	45-64	≥65	NK	
A1, A2 primary and secondary infectious syphilis	M	1	–	3	9	30	18	13	3	7	84
	F	–	–	3	4	10	9	3	2	2	33
B1,B2 uncomplicated gonorrhoea	M	8	18	869	2000	3526	947	300	9	72	7749
	F	36	90	1343	1243	922	179	51	2	36	3902
B1,B2 uncomplicated gonorrhoea – homosexually acquired	M	1	1	49	275	879	283	73	2	79	1642
C4A, C4C uncomplicated chlamydial infection	M	12	23	1326	4508	6055	1336	329	28	77	13694
	F	108	320	5508	6480	4646	764	154	11	172	18163
C10A genital herpes simplex – first attack	M	6	4	255	1222	2636	963	464	50	41	5641
	F	24	89	1572	2728	3282	1051	449	27	127	9349
C11A genital warts – first attack	M	54	29	1900	8828	11145	3066	1286	107	221	26636
	F	126	313	7056	9768	6785	1834	849	49	321	27101

Table 3 New conditions by sex: 1996

	Code and condition	Male cases		Female cases total	Total cases
		Total	Homosexually acquired (%)		
Diagnoses					
A1, A2	Primary and secondary Infectious syphilis	84	20 (29)	33	117
A3	Early latent syphilis (first 2 years)	84	16 (19)	58	142
A4,A5,A6	Other acquired syphilis	547	76 (14)	296	843
A7	Congenital syphilis, aged under 2	1	XXXX	1	2
A8	Congenital syphilis, aged 2 or over	12	XXXX	12	24
A9	Epidemiological treatment of suspected syphilis	35	2 (6)	42	77
B1,B2	Uncomplicated gonorrhoea	7749	1642 (21)	3902	11651
B3	Gonococcal ophthalmia neonatorum	2	XXXX	3	5
B4	Epidemiological treatment of suspected gonorrhoea	1120	343 (31)	1346	2466
B5	Gonococcal complications	68	11 (16)	214	282
C1,C2,C3	Chancroid/lymphogranuloma/donovanosis	52	XXXX	27	79
C4A,C4C	Uncomplicated chlamydia infection	13694	266 (2)	18163	31857
C4B	Complicated chlamydia infection	274	11 (4)	1007	1281
C4D	Chlamydia ophthalmia neonatorum	16	XXXX	26	42
C4E	Epidemiological treatment of suspected chlamydia	6273	137 (2)	4844	11117
C4H	Uncomplicated non-gonococcal/non-specific urethritis in males	45868	3012 (7)	XXXX	45868
C4I	Epidemiological treatment of non-specific genital infection	4312	345 (8)	16146	20458
C5	Complicated non-gonococcal/non-specific infection	2189	152 (7)	7844	10033
C6A	Trichomoniasis	231	XXXX	5302	5533
C6B	Anaerobic/bacterial vaginosis and male infection	1531	XXXX	41896	43427
C6C	Other vaginosis/vaginitis/balanitis	11627	XXXX	7628	19255
C7A	Anogenital candidosis	7979	XXXX	61732	69711
C7B	Epidemiological treatment of C6 & C7	3738	XXXX	6925	10663
C8,C9	Scabies/pediculosis pubis	4257	831 (20)	1351	5608
C10A	Genital herpes simplex – first attack	5641	377 (7)	9349	14990
C10B	Genital herpes simplex – recurrence	5765	487 (8)	6741	12506
C11A	Genital warts – first attack	26636	1233 (5)	27101	53737
C11B	Genital warts – recurrence	19673	1137 (6)	11217	30890
C11C	Genital warts – re-registered cases*	6807	XXXX	5806	12613
C12	Molluscum contagiosum	3238	308 (10)	1815	5053
C13	Antigen positive viral hepatitis B	445	116 (26)	195	640
C14	Other viral hepatitis	880	124 (14)	354	1234
E1A	Asymptomatic HIV infection – first presentation	1109	680 (61)	311	1420
E1B	Asymptomatic HIV infection – subsequent presentation	5388	XXXX	1327	6715
E2A	HIV infection with symptoms, not AIDS – first presentation	1083	698 (65)	201	1284
E2B	HIV infection with symptoms, not AIDS – subsequent presentation	5506	XXXX	1018	6524
E3A	AIDS – first presentation	762	456 (60)	153	915
E3B	AIDS – subsequent presentation	4122	XXXX	603	4725
Total diagnoses		198798	14888	244989	443787
Workload					
D2A	Urinary tract infection	1889	XXXX	8149	10038
D2B	Other conditions requiring treatment at GUM clinic	43130	XXXX	44872	88002
D3	Other episodes not requiring treatment	83803	XXXX	91126	174929
P1A	HIV antibody counselling – with testing	64018	9099 (14)	52445	116463
P1B	HIV antibody counselling – without testing	11147	1043 (9)	10534	21681
P2	Hepatitis B vaccination	8970	4676 (52)	2253	11223
P3	Family planning	1445	XXXX	19573	21018
P4A	Cervical cytology – minor abnormality	XXXX	XXXX	11666	11666
P4B	Cervical cytology – major abnormality	XXXX	XXXX	1795	1795
Total diagnoses		21440	214818	242413	456815
Total diagnoses and workload		413207	29706	487583	906602

* A re-registered case is a patient, previously diagnosed as C11A or C11B, but whose warts persist and who is treated for over three months
XXXX data not collected

Table 4 New conditions by sex: 1995

	Code and condition	Male cases		Female cases total	Total cases
		Total	Homosexually acquired (%)		
Diagnoses					
A1, A2	Primary and secondary infectious syphilis	101	35 (35)	29	130
A3	Early latent syphilis (first 2 years)	80	21 (26)	66	146
A4,A5,A6	Other acquired syphilis	655	96 (15)	339	994
A7	Congenital syphilis, aged under 2	8	XXXX	12	20
A8	Congenital syphilis, aged 2 or over	10	XXXX	13	23
A9	Epidemiological treatment of suspected syphilis	36	10 (28)	41	77
B1,B2	Uncomplicated gonorrhoea	6471	1336 (21)	3265	9736
B3	Gonococcal ophthalmia neonatorum	5	XXXX	4	9
B4	Epidemiological treatment of suspected gonorrhoea	976	300 (31)	1200	2176
B5	Gonococcal complications	46	12 (26)	163	209
C1,C2,C3	Chancroid/lymphogranuloma/donovanosis	58	XXXX	31	89
C4A,C4C	Uncomplicated chlamydia infection	12521	225 (2)	16161	28682
C4B	Complicated chlamydia infection	258	12 (5)	840	1098
C4D	Chlamydia ophthalmia neonatorum	23	XXXX	14	37
C4E	Epidemiological treatment of suspected chlamydia	4932	81 (2)	4014	8946
C4H	Uncomplicated non-gonococcal/non-specific urethritis in males	43608	2690 (6)	XXXX	43608
C4I	Epidemiological treatment of non-specific genital infection	4322	371 (9)	15666	19988
C5	Complicated non-gonococcal/non-specific infection	1902	128 (7)	6884	8786
C6A	Trichomoniasis	239	XXXX	5032	5271
C6B	Anaerobic/bacterial vaginosis and male infection	1578	XXXX	37702	39280
C6C	Other vaginosis/vaginitis/balanitis	11351	XXXX	7213	18564
C7A	Anogenital candidosis	8581	XXXX	59666	68247
C7B	Epidemiological treatment of C6 & C7	4022	XXXX	7002	11024
C8,C9	Scabies/pediculosis pubis	4179	768 (18)	1220	5399
C10A	Anogenital herpes simplex – first attack	5823	320 (6)	9007	14830
C10B	Anogenital herpes simplex – recurrence	5598	419 (8)	6303	11901
C11A	Anogenital warts – first attack	25791	1314 (5)	24701	50492
C11B	Anogenital warts – recurrence	19959	1115 (6)	11122	31081
C11C	Anogenital warts – re-registered cases*	5937	XXXX	4499	10436
C12	Molluscum contagiosum	2918	225 (8)	1494	4412
C13	Antigen positive viral hepatitis B	515	172 (33)	174	689
C14	Other viral hepatitis	1110	202 (18)	510	1620
E1A	Asymptomatic HIV infection – first presentation	1199	703 (59)	275	1474
E1B	Asymptomatic HIV infection – subsequent presentation	5687	XXXX	1205	6892
E2A	HIV infection with symptoms, not AIDS – first presentation	1155	713 (62)	238	1393
E2B	HIV infection with symptoms, not AIDS – subsequent presentation	6681	XXXX	777	7458
E3A	AIDS – first presentation	868	547 (63)	123	991
E3B	AIDS – subsequent presentation	4451	XXXX	541	4992
Total diagnoses		193654	13815	227546	421200
Workload					
D2A	Urinary tract infection	2920	XXXX	8014	10934
D2B	Other conditions requiring treatment at GUM clinic	42413	XXXX	39830	82243
D3	Other episodes not requiring treatment	78328	XXXX	83067	161395
P1A	HIV antibody counselling – with testing	58215	8784 (15)	46456	104671
P1B	HIV antibody counselling – without testing	10060	1114 (11)	9236	19296
P2	Hepatitis B vaccination	8575	4769 (56)	1770	10345
P3	Family planning	855	XXXX	10689	11544
P4A	Cervical cytology – minor abnormality	XXXX	XXXX	10896	10896
P4B	Cervical cytology – major abnormality	XXXX	XXXX	1747	1747
Total workload		201366	14667	211705	413071
Total diagnoses and workload		395020	28482	439251	834271

* A re-registered case is a patient, previously diagnosed as C11A or C11B, but whose warts persist and who is treated for over three months
XXXX data not collected

Box Definition of an acute sexually transmitted infection

Infectious syphilis
 Post-pubertal uncomplicated gonorrhoea
 Complicated gonorrhoea
 Chancroid/lymphogranuloma venereum/
 donovanosis
 Uncomplicated chlamydial infection
 Complicated chlamydia
 Uncomplicated non-gonococcal/non-specific
 urethritis in males
 Complicated non-gonococcal/non-specific infection
 Antigen positive viral hepatitis B
 Asymptomatic HIV infection (first presentation)
 HIV infection with symptoms, not AIDS (first
 presentation)
 Herpes simplex (first attack)
 Wart virus infection (first attack)
 Molluscum contagiosum
 Trichomoniasis

specific urethritis in males, a proportion of which are likely to be chlamydial in origin, rose by 5% between 1995 and 1996 from 43 608 to 45 868. In addition, over the same period the extent of epidemiological treatment – the treatment of contacts of cases – of gonorrhoea, genital *C. trachomatis* infection and non-specific genital infection (NSGI) increased by 10% (from 31 110 to 34 105) overall; males by 14% (from 10 230 to 11 705), females by 7% (from 20 880 to 22 336).

Fewer diagnoses of primary and secondary infectious syphilis were reported in 1996 (117) than in 1995 (130), but the decrease was not significant for either sex, $p \geq 0.05$ (figure 1a). Males outnumbered females by 2:1 in 1996.

Common viral sexually transmitted infections

Genital warts is the commonest STI diagnosed at GUM clinics in England: first attack, recurrent, and re-registered cases accounted for 97 240 (22%) of all diagnoses made in GUM clinics in 1996 (table 3). Diagnoses of first attack genital warts increased by 5% between 1995 and 1996. In 1996, 53 737 diagnoses of first attack were reported, 26 636 in men, 27 101 in women, a male to female ratio of 1:1.2. Recurrent attacks and re-registered diagnoses also rose by 5% between 1995 and 1996 from 41 517 to 43 503, and accounted for 45% of all diagnoses of genital warts in 1996.

First attack and recurrent infection with genital herpes simplex virus (HSV), the commonest ulcerative STI in England, accounted for 27 496 (6%) of all diagnoses in 1996 (table 3). Overall, the number of diagnoses of first attack in 1995 and 1996 were similar (14 830 and 14 990 cases, respectively), but this masked a 3% fall in men (from 5823 to 5641) and a 4% rise in women (from 9007 to 9349). Female outnumbered males by 2:1 in 1996.

Diagnoses of molluscum contagiosum rose from 4412 in 1995 to 5053 in 1996, an increase of 13%; this represented a 11% increase in males and a 21% increase in females. Diagnoses of surface antigen positive viral hepatitis B fell

by 8% (from 689 to 640) in 1996, a decrease of 14% in males and 11% in females. The ratio of male to female diagnoses in 1996 was 2.3:1. The number hepatitis B vaccinations rose by 7% from 10 770 to 11 223, made up of a 4% decrease in males and a 27% increase in females.

Other conditions

There was a 5% increase in the number of diagnoses of trichomoniasis in females (from 5032 to 5302), whereas the number for males remained stable, at a far lower level. There was also an increase in conditions assigned to the workload codes (codes D and P). Attendances assigned to 'other conditions not requiring treatment' and 'other conditions requiring treatment' – sexual dysfunction, urinary tract infection, dermatological conditions – rose by 7% (from 161 395 to 174 929) and 3% (from 93 177 to 98040), respectively, between 1995 and 1996. Attendances at which family planning services were provided rose by 82% from 11 544 to 21 018 between 1995 and 1996. In 1996 93% of those attending for family planning services were women. There was little change in the numbers of other diagnoses.

Sexually transmitted infections and age

The age distributions for STIs differ between the sexes. In 1996, rates of diagnoses among males of uncomplicated gonorrhoea, uncomplicated chlamydial infection, and first attack of genital warts and/or genital HSV were highest in the 20 to 24 year age group (figure 2). Among women, the highest rate of uncomplicated gonorrhoea was observed in those aged 16 to 19 years, and of uncomplicated chlamydial, first attack genital warts, and first attack genital HSV infections in those aged 20 to 24 years.

The rises in diagnoses of uncomplicated gonorrhoea, uncomplicated chlamydia, first attack genital warts and genital HSV between 1995 and 1996, were greatest in males and females aged 16 to 19 years (figure 1b). In particular, diagnoses of uncomplicated gonorrhoea rose by 36% in females and by 33% in males in the 16 to 19 year age group.

Regional distribution of sexually transmitted infections

Forty-five per cent (83 102 of 186 583) of acute STIs were reported in the Thames regions (table 5). Regional distributions of different diagnoses varied considerably. About half of the cases of uncomplicated gonorrhoea (5918 of 11651) and primary and secondary infectious syphilis (58 of 117) in 1996 were reported from the Thames regions, whereas only a third of diagnoses of genital *C. trachomatis* (10 766 of 31 857) and first attack genital warts (17 569 of 53 737) were reported from these regions (table 2).

Trends between 1995 and 1996 were estimated for selected diagnoses by region (figure 1a). There were significant rises in diagnoses of uncomplicated gonorrhoea, uncomplicated chlamydia, and genital warts in almost all regions ($p < 0.05$). Diagnoses of uncomplicated gonorrhoea in females rose by over 20% in Northern and Yorkshire, South Thames, and the West Midlands, and by 45% in Trent. In males, diagnoses of gonorrhoea rose by over 20% in Trent, South Thames, South West, and North West, and by 35% in the West Midlands. Similarly, diagnoses of uncomplicated chlamydia rose between 1995

Figure 1a Change in rates of diagnoses of STIs in males and females by region and age group: 1995-96

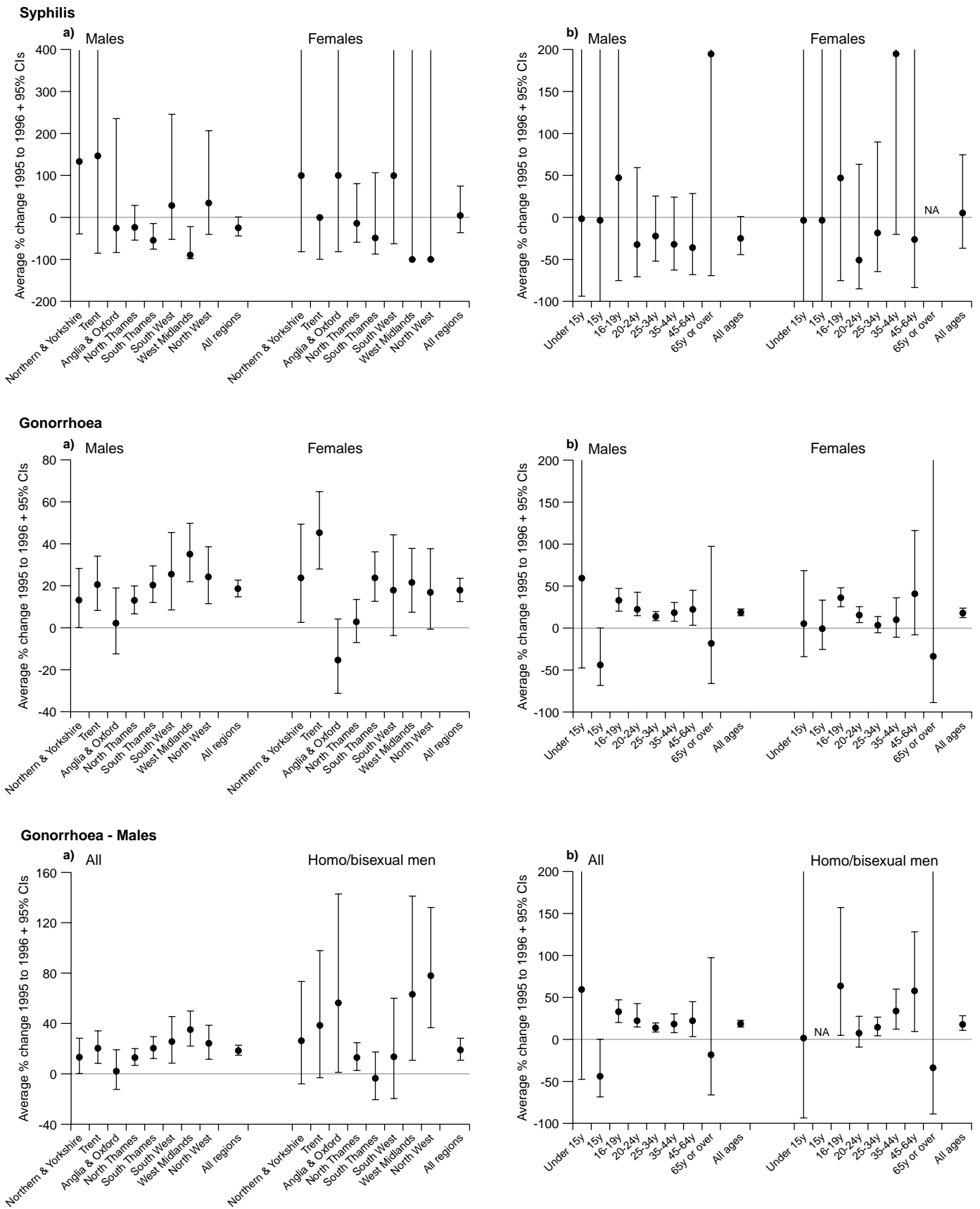
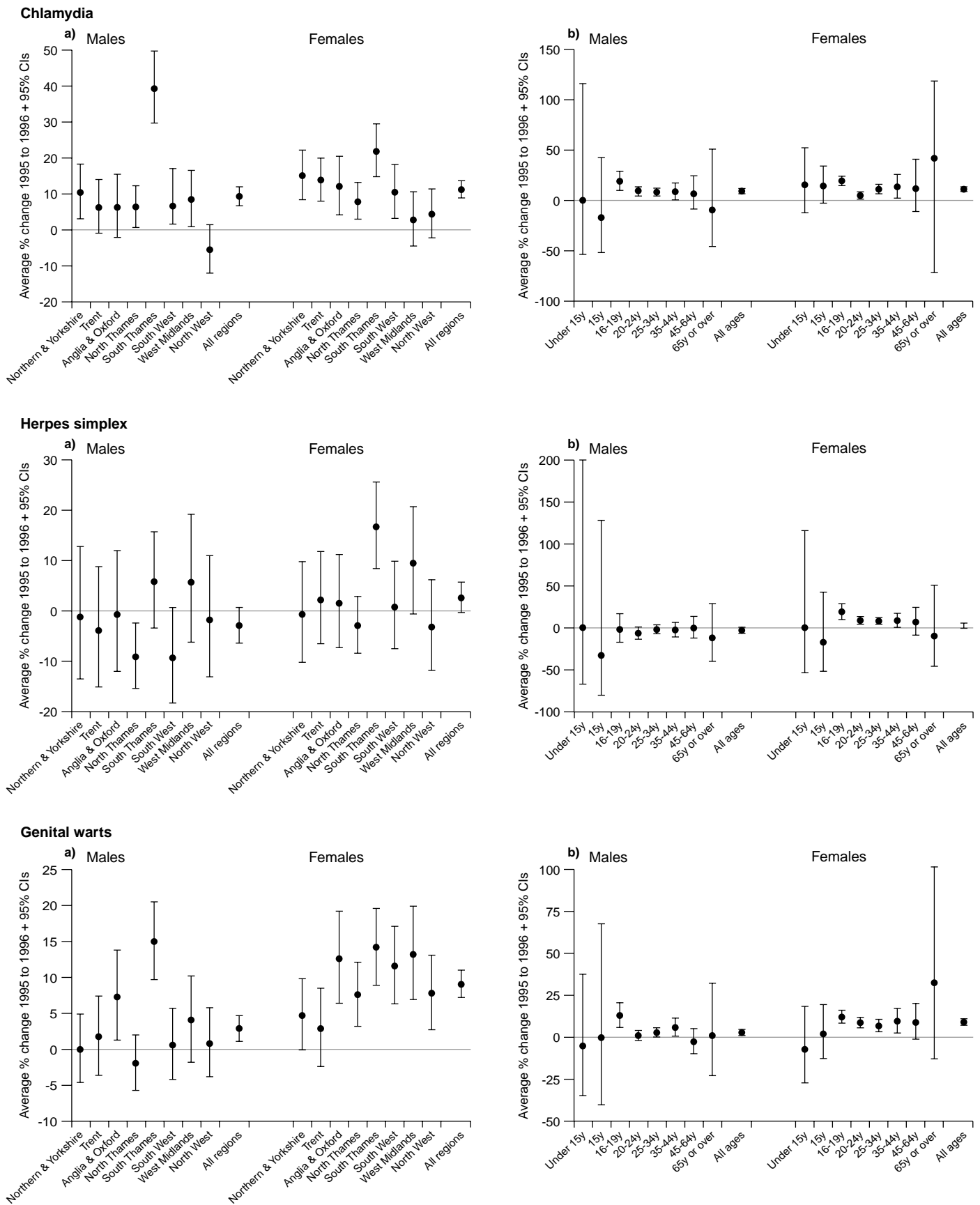


Figure 1b Change in rates of diagnoses of STIs in males and females by region and age group: 1995-96



and 1996 in all but one region (North West). The rise was especially noticeable in South Thames – 39% for males and 22% for females. The number of cases of first attack genital warts also increased in most areas between these years, particularly in females, and as with genital *C. trachomatis*, the highest rises were in South Thames.

There was, however, considerable variation in regional trends in the numbers of diagnoses of genital HSV between 1995 and 1996. Among males a slight, but not significant, decrease was seen in most regions ($p>0.05$), whereas among females there was an overall increase, including a significant increase of about 17% in South Thames ($p<0.05$; table 4). Likewise, regional trends in diagnoses of infectious syphilis between 1995 and 1996 was varied but no significant trends were observed ($p>0.05$; figure 1a).

Sexually transmitted infections in homosexual men

Six per cent (14 888 of 235 921) of all diagnoses and 8% (9005 of 110 990) of acute STIs for which male sexual orientation was recorded in 1996 were recorded as homosexually acquired. Twenty-one per cent (1642 of 7749) of male diagnoses of uncomplicated gonorrhoea and 20% (20 of 84) of diagnoses of primary and secondary infectious syphilis were homosexually acquired, compared with 2% (266 of 13694) of uncomplicated chlamydia, 5% (1233 of 26636) of genital warts, and 7% (377 of 5641) of genital HSV. Some diagnoses were commoner in homosexual men than in men overall. Sixty-two per cent (1834) of the new presentations of asymptomatic and

symptomatic HIV infections and AIDS in males were reported as having been acquired through sexual intercourse between men and 52% (4676 of 8970) of males vaccinated against hepatitis B were known to be homosexual. These proportions have remained relatively stable since 1995, with the exception of infectious syphilis, which fell from 35% (35 of 101) in 1995 to 24% (20 of 84) in 1996.

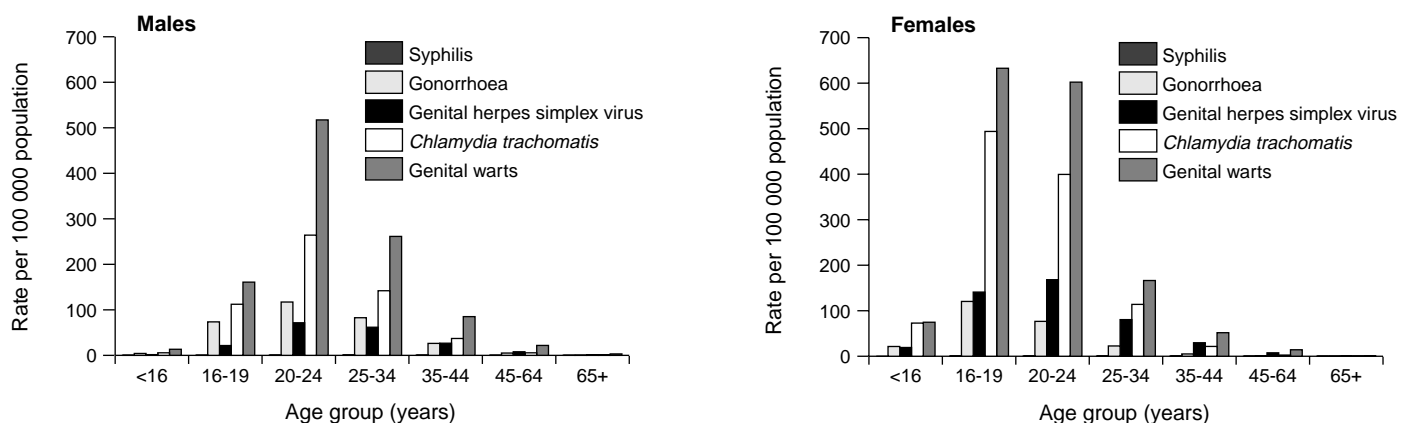
Although the proportion of diagnoses attributed to sex between men changed little between 1995 and 1996, diagnoses of uncomplicated gonorrhoea in homosexual men rose by 23% (from 1336 to 1642), and of *C. trachomatis* and genital HSV each by 18% (225 to 266 and 320 to 377, respectively). Between 1995 and 1996, diagnoses of genital warts and primary and secondary infectious syphilis in homosexual men fell by 6% (1314 to 1233) and 43% (35 to 20) respectively, although very few diagnoses of infectious syphilis were made.

Homosexually acquired infections were concentrated in the Thames regions, particularly North Thames, where 56% (4998 of 9005) of all homosexually acquired acute STIs were reported (table 5). Furthermore, 38% (879 of 2483) of male diagnoses of uncomplicated gonorrhoea in North Thames were reported to have been acquired through sex between men, compared with 14% (763 of 5266) of diagnoses in all other English regions combined. Significant increases in homosexually acquired gonorrhoea were detected in North Thames, the West Midlands, North West, and Anglia and Oxford ($p<0.05$; figure 1a). Fifty-

Table 5 New diagnoses by region, sex and sexual orientation, 1996

Region	Diagnoses			Diagnoses with an acute STI		
	Total male	Homosexually acquired (male)	Total female	Total male	Homosexually acquired (male)	Total female
Northern and Yorkshire	36645	1594	39485	10508	342	7829
Trent	34518	1476	46254	9546	320	8625
Anglia and Oxford	40926	1469	50160	9031	359	6482
North Thames	123936	13832	141305	32490	4998	16809
South Thames	71192	5948	88336	20209	1687	13594
South West	37535	1938	43073	9978	451	7153
West Midlands	30032	1513	34822	9116	334	6688
North West	38423	1936	44148	10395	514	8130

Figure 2 Distribution of STDs by age group and sex



four per cent of gonococcal infections acquired through sex between men were in those aged 25 to 34 years (table 3), but significant rises between 1995 and 1996 occurred in all age groups ($p < 0.05$; figure 1b).

Discussion

The KC60 data set provides the most comprehensive epidemiological data on STIs in England. STIs may also be diagnosed in other settings – such as clinics for terminations of pregnancy, family planning, antenatal care, well women, and general practice. Many of these cases will be referred to GUM clinics, but it is difficult to estimate the number of STIs seen outside GUM clinics because no national STI surveillance is undertaken in these settings.

Analysis of the data from 1996 indicates that attendances at GUM clinics increased substantially between 1995 and 1996, most notably for gonorrhoea, genital *C. trachomatis*, and genital warts. There were also increases in HIV counselling and testing, and the use of GUM clinics for family planning and cervical cytology services. Total attendances in females were higher, and increased more than those in males. In contrast, women were less likely to present with an acute STI. Although diagnoses acquired through sex between men accounted for 6% of male cases overall, they accounted for about 20% of diagnoses of gonorrhoea and primary and secondary syphilis, and over 60% of HIV and AIDS diagnoses. Homosexually acquired infections tended to be concentrated in North Thames.

Gonorrhoea was the only STI for which a target was set in the *Health of the Nation*⁴. It was chosen as a marker of sexual health and partner change and also of behaviour likely to influence HIV transmission⁴. The 20% rise in gonorrhoea between 1995 and 1996, which followed a smaller rise between 1994 and 1995, has not taken the incidence of gonorrhoea above the *Health of the Nation* target set for 1995⁵, but if this trend continues it will do so. The rise in gonorrhoea that occurred between 1989 and 1990 was largely confined to males in the Thames regions and was believed to have been driven by increased rates of transmission among homosexual and bisexual men⁶. In contrast, the rise between 1995 and 1996 reflect increased incidence among both homosexual men and heterosexuals, particularly teenagers, and occurred in most regions. Recent studies in Leeds and South Thames have shown a disproportionately high incidence of gonorrhoea in young people, among homosexual and bisexual men and people of black ethnicity^{7,8}. It is, however, impossible to determine if any particular ethnic group was associated with the rise described in this report, since ethnic data are not collected on form KC60.

Diagnoses of genital *C. trachomatis*, including epidemiological treatment, rose substantially between 1995 and 1996 in both sexes and in all regions, except North West. Increased complications of chlamydial infection and NSGI in women were also reported. The continued high levels of genital chlamydial infection and its sequelae lend weight to calls for further expansion of screening for this infection and new approaches to control and prevention. Screening for genital *C. trachomatis* has expanded in GUM clinics over the past 12 years⁹, but this needs to be extended to other services, since a large reservoir of asymptomatic infection exists in the general population¹⁰⁻¹². If successful, increased intervention is

likely, in the short term, to increase incidence, reflecting increased case ascertainment rather than an actual increase in disease incidence.

Diagnoses of genital warts and genital HSV have increased substantially over the past 26 years^{13,14}. The rise in genital warts continued between 1995 and 1996, particularly among teenagers and in South Thames. Diagnoses of genital HSV among women, especially teenagers continued to increase into 1996 whereas genital HSV diagnoses among males have remained stable since 1992. The non-significant decline among males between 1995 and 1996 could reflect a decline in incidence but, could also be due to a change in reporting, since all diagnoses of first attack required laboratory confirmation from 1995¹⁵.

London and the rest of the Thames regions have a disproportionate burden of most diagnoses, but the extent of this varies considerably between conditions. About half the diagnoses of gonorrhoea and primary and secondary syphilis were reported from the Thames regions. The epidemiology of gonorrhoea in North Thames is more influenced by sex between men than in other regions. At least 40% of male cases in North Thames were homosexually acquired, compared with 14% elsewhere. Between 1995 and 1996, rises in diagnoses of genital chlamydia, genital warts, and genital HSV (in females) were highest in South Thames. The greatest rises for uncomplicated gonorrhoea occurred in Trent and the West Midlands.

The latest statistics from GUM clinics in England demonstrate a clear increase in the acquisition of acute STIs in teenagers and homo/bisexual men between 1995 and 1996. These groups have been the target of sexual health education and intervention programmes in the past, and these data suggest no reason for complacency or to stop targeting these groups. The behavioural and socio-demographic changes behind these increases are impossible to determine from these data. Further research is required in this area, particularly investigating the factors associated with the significant rise in gonorrhoea. Many of the conditions for which a rising trend has been observed are curable. This is of concern since the sequelae of untreated bacterial STIs, such as pelvic inflammatory disease, are associated with considerable physical, emotional, and financial costs. Furthermore, these trends suggest that fewer people are adopting safer sexual behaviour, which could leave many individuals vulnerable to HIV infection.

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Further information

Clinic specific data for 1996 and data on specific diagnoses from 1971 to 1996 are available on request from Ian Simms at CDSC.

References

- 1 Royal Commission on Venereal Disease. *Final Report of the commissioners*. London: HMSO, 1916.
- 2 Sexually transmitted disease surveillance in Britain:

1984. *BMJ* 1986; 293: 942-3.
3. Office for National Statistics. *Revised mid-1996 population estimates for local and health authorities in England and Wales*. London: HMSO, 1997.
 4. Department of Health. *Health of the Nation: a strategy for health in England and Wales*. London: HMSO, 1992. (Cm.1986)
 5. CDSC. Sexually transmitted diseases quarterly report: gonorrhoea in England and Wales. *Commun Dis Rep CDR Wkly* 1997; 7: 225-7.
 6. Evans BG, Catchpole MA, Heptonstall MA, Mortimer JY, McGarrigle CA, Nicoll AG, et al. Sexually transmitted diseases and HIV-1 infection among homosexual men in England and Wales. *BMJ* 1993; 306: 426-8.
 7. Lacey CJN, Merrick DW, Bensley DC, Fairley I. The epidemiology of gonorrhoea in Leeds. *BMJ* 1997; 314: 1715-8.
 8. Low N, Daker-White G, Barlow D, Pozniak A. Gonorrhoea in inner London: the hidden epidemic. *BMJ* 1997; 314: 1719-23.
 9. Simms I, Catchpole M, Robinson AJ, Laas C. Provision of diagnostic services for genital chlamydial infection in genitourinary medicine clinics: England and Wales 1996. *Genitourin Med* 1997; 73: 147-8.
 10. Simms I, Catchpole M, Brughra R, Rogers P, Mallinson H, Nicoll A. Epidemiology of genital Chlamydia trachomatis in England and Wales. *Genitourin Med* 1997; 73: 122-6.
 11. Johnson AM, Grun L, Haines A. Controlling chlamydial infection. *BMJ* 1996; 313: 1160-1.
 12. Taylor-Robinson D. Chlamydia trachomatis and sexually transmitted disease. What do we know and what can be done? *BMJ* 1994; 308: 150-1.
 13. CDSC. Sexually transmitted diseases quarterly report: genital warts and genital herpes simplex virus infection in England and Wales: 1995. *Commun Dis Rep CDR Wkly* 1996; 6: 304-5.
 14. Simms I, Fairley CK. Epidemiology of genital warts in England and Wales: 1971 to 1994. *Genitourin Med* 1997; 73: 365-7.
 15. Watson PG, Pattmen RS, Sankar KN, Wardropper AG. The value of an additional diagnostic test for first attack of genital herpes. *Int J STD AIDS* 1995; 6: 453.

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