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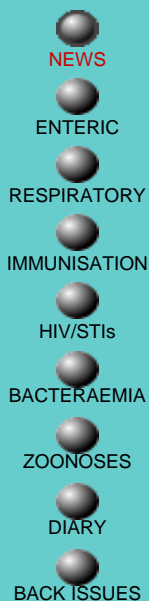
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## Schools BCG immunisation programme to re-start

The Public Health Minister has announced that the routine schools BCG immunisation programme is to restart throughout England and Wales. Immunisation staff are now prioritising programmes, starting with students who missed out on their vaccinations and are due to leave school this summer. A catch-up programme for the two year-groups who missed BCG immunisation will start next academic year (2001/02) with a view to being back on track with the routine school immunisation programme from the 2002/03 academic year.

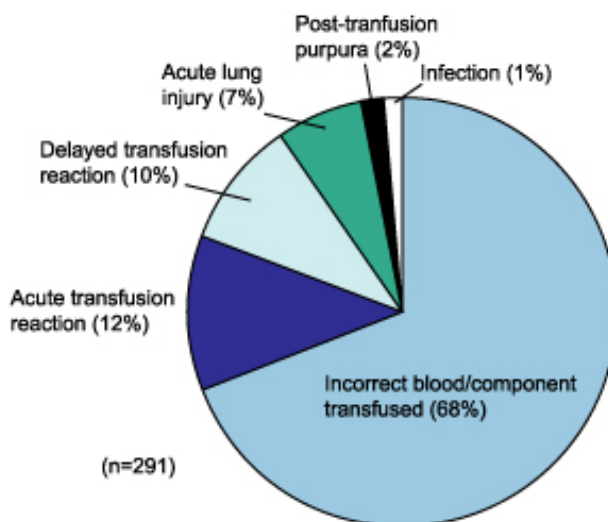
The schools BCG programme in England and Wales was suspended in September 1999 following a shortage of vaccine due to manufacturing problems experienced by the suppliers. During this period, vaccine remained available for all those at a higher risk of tuberculosis. The Department of Health has sought alternative sources of vaccine from around the world. As sufficient supplies became available, the schools programme was restarted in London in autumn 2000 as tuberculosis rates in London are considerably higher than the national average.

Further information can be obtained from Jeff Porter at the Department of Health (email: [jeff.porter@doh.gsi.gov.uk](mailto:jeff.porter@doh.gsi.gov.uk))

## Serious hazards of transfusion (SHOT): report for 1999-2000

The surveillance system for all major complications of blood transfusion, Serious Hazards of Transfusion, (SHOT) (1), has published its fourth annual report (2). This documents reports of the rare incidents of serious complications associated with blood transfusion in the United Kingdom during 1999-2000, and cumulatively for the four years since October 1996 (figure). Reporting years run from 1 October to 30 September.

**Figure Cases of serious complications associated with blood transfusion in the United Kingdom: 1 October 1996 to 30 September 2000**



Seventy-two per cent (305/426) of hospitals eligible to participate either reported a case or confirmed that they had no cases to report. Just over 3.4 million blood components (red cells, platelets, fresh frozen plasma, and cryoprecipitate) were issued by transfusion services in the UK during this year.

The fourth annual report describes a similar profile of complications as the previous annual reports. Of 26 initial reports of post-transfusion infections during 1999-2000, four (15%) were classified, after

investigations, as transfusion transmitted infections, contributing only 1.4% of the all complications of transfusion reported this year. All four cases reported this year were bacterial contaminations: one *Enterobacter aerogenes* (fatal), two *Staphylococcus epidermidis*, and one coagulase negative staphylococci. Full details of these cases, and of the non-infectious complications are included in the annual report (2).

There have been twenty-six reports of transfusion transmitted infections in the UK (excluding Scotland) since October 1995 (table). Fifteen of these were bacterial contamination, including four of five reported deaths. Twelve of these 15 cases involved transfusion of platelets. Investigations of some additional reports of suspected bacterial contamination investigations were inconclusive. A National Blood Service guidance document *Bacteriological investigation of adverse reactions associated with transfusion* has been prepared in consultation with the PHLS and the Association of Medical Microbiologists and should be used by hospitals investigating such cases. It is included as an appendix in the annual report. The report also recommends strategies that will further reduce the risk of bacterial infections.

**Table Incidence of transfusion transmitted infections (number of infected recipients) by date of transfusion: 1 October 1995 to 30 September 2000**

Year of transfusion	pre-1995	1995	1996	1997	1998	1999	2000 (to end Sept)	Total	Deaths
<b>Infection</b>									
HAV	–	–	1 (1)	–	–	–	–	1 (1)	–
HBV	1 (1)*	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	–	6 (6)	–
HCV	–	–	1 (1)	1 (1)	–	–	–	2 (2)	–
HIV#	–	–	1 (3)	–	–	–	–	1 (3)	–
Bacteria	–	1 (1)	1 (1)	3 (3)	3 (3)	4 (4)!	3 (3)!	15 (15)	4
Malaria	–	–	–	1 (1)!	–	–	–	1 (1)	1
<b>Total§</b>	<b>1 (1)</b>	<b>2 (2)</b>	<b>5 (7)</b>	<b>6 (6)</b>	<b>4 (4)</b>	<b>5 (5)</b>	<b>3 (3)</b>	<b>26 (28)</b>	<b>5</b>

\* one household member who was caring for the recipient has been diagnosed with acute HBV; # one additional investigation, initially reported during 1997-1998 and concluded during 1998-1999, failed to confirm or refute transfusion transmission of HIV infection during the early 1990s. As the patient had received multiple transfusions, and had no other risk factors for infection, transfusion with HIV infectious blood was concluded to be the probable, although unproven, source of infection; ! infection was implicated in the death of two recipients; † infection was implicated in the death of one recipient; § additionally, reports in Scotland found one probable transfusion transmitted bacteraemia (not fatal), transfused during 1998, and one donation shown to have transmitted HBV infection to two recipients, transfused during 1999.

1. CDSC. Surveillance of the complications of blood transfusion. *Commun Dis Rep CDR Wkly* 1996; **6**: 409

2. Serious Hazards of Transfusion steering group. *Annual Report 1999-2000*. Manchester: SHOT, 2000. (Copies can be obtained from the SHOT office (tel 0161 251 4208), price £25 to non-NHS)

## Reporting of small round structured viruses (Norwalk-like viruses)

The small round structured viruses (SRSVs) also known as Norwalk-like viruses (NLVs) are recognised as the major cause of outbreaks of non-bacterial gastroenteritis in England and Wales as well as in other countries (1,2). Historically, the naming of this group of viruses has been complicated due to incomplete characterisation of members of the family and misidentification by electron microscopy (EM).

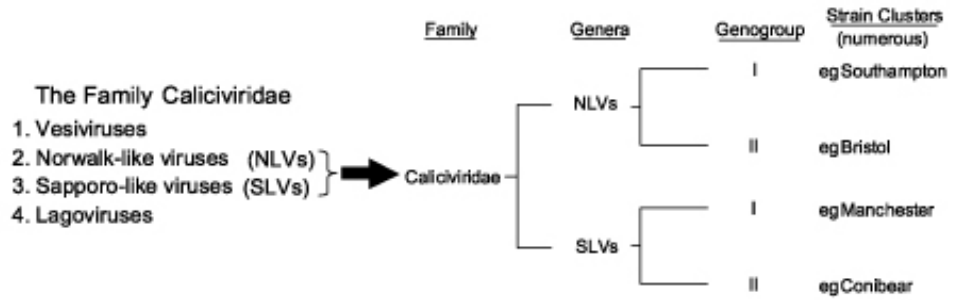
In 1982 an interim classification scheme based on EM was devised to enable accurate recognition of Norwalk-like viruses which had a distinct morphology different from all other small round gastroenteritis viruses (3). This scheme was introduced in the United Kingdom (UK) to enable accurate epidemiological data to be collected. This distinct group of viruses was collectively called small round structured viruses (SRSVs).

Subsequently, the first report of a complete genome sequence (Southampton strain) for this group of viruses enabled their classification as members of the Caliciviridae family (4). This was supported by further reports of complete genome structure for other strains, Norwalk (5) and Lordsdale (6) strains. The completion of the entire genome sequence of a classical human calicivirus, Manchester strain (7), confirmed the view that the SRSVs and classical human caliciviruses are distinct members of the Caliciviridae family, in support of earlier observations identifying crucial differences in the epidemiology, immunobiology, and sero-epidemiology of these viruses.

In 1998, the International Committee on Virus Nomenclature reported on the classification of members of the Caliciviridae (8). There are four genera with the SRSVs (NLVs) and classical Caliciviruses being grouped separately (figure). Formal nomenclature has not yet been assigned but in the interim SRSVs are now grouped within the genus Norwalk-like viruses (NLV) and the classical human caliciviruses within the genus Sapporo-like viruses (SLV). It should be stressed that the above scheme is temporary and is likely to change again in the future. Rather than change from the familiar SRSV terminology used at present only to change again at a later date, outbreaks of SRSV

gastroenteritis should be reported as SRSV (NLV) positive. Similarly, cases of classical human calicivirus gastroenteritis should be reported SLV (classical human calicivirus) positive. It is recommended that the term SRSV continue to be used in the UK until a final recommendation is made on the naming of this genus.

**Figure Schematic genetic relationship of human calicivirus**



1. Caul EO. Viral gastroenteritis: small round structured viruses, caliciviruses and astroviruses. Part I. The clinical and diagnostic perspective. *J Clin Pathol* 1996; **49**(11): 874-80.
2. Caul EO. Viral gastroenteritis: small round structured viruses, caliciviruses and astroviruses. Part II. The epidemiological perspective. *J Clin Pathol* 1996; **49**(12): 959-64.
3. Caul EO, Appleton H. The electron microscopical and physical characteristics of small round human fecal viruses: an interim scheme for classification. *J Med Virol* 1982; **9**(4): 257-65.
4. Lambden PR, Caul EO, Ashley CR, Clarke IN. Sequence and genome organization of a human small round-structured (Norwalk-like) virus. *Science* 1993; **259**(5094): 516-9.
5. Jiang X, Wang M, Wang K, Estes MK. Sequence and genomic organization of Norwalk virus. *Virology* 1993; **195**(1): 51-61.
6. Dingle KE, Lambden PR, Caul EO, Clarke IN. Human enteric Caliciviridae: the complete genome sequence and expression of virus-like particles from a genetic group II small round structured virus. *J Gen Virol* 1995; **76**(Pt 9): 2349-55.
7. Liu BL, Clarke IN, Caul EO, Lambden PR. Human enteric caliciviruses have a unique genome structure and are distinct from the Norwalk-like viruses. *Arch Virol* 1995; **140**(8): 1345-56.
8. Pringle CR. Virus taxonomy-San Diego 1998. *Arch Virol* 1998; **143**(7): 1449-59.

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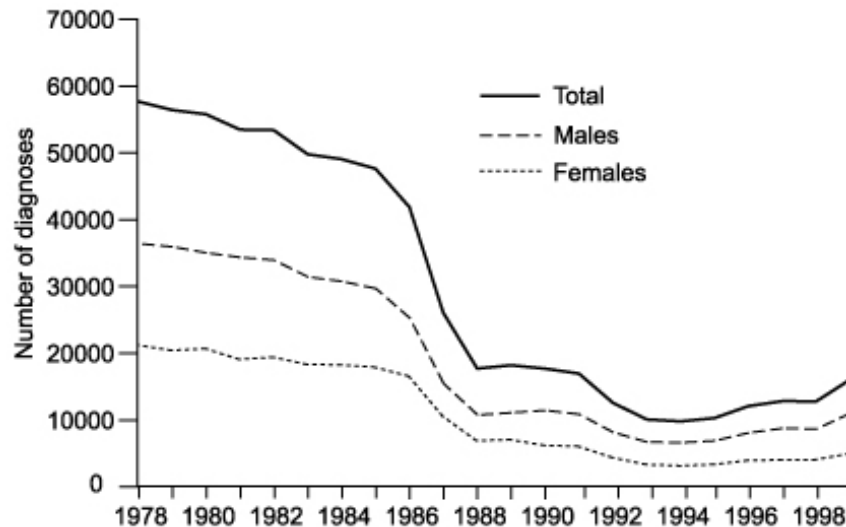
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## Sexually transmitted infections quarterly report: gonorrhoea in England and Wales

This report is based on statistical returns (KC60) from genitourinary medicine (GUM) clinics to the PHLs Communicable Disease Surveillance Centre (CDSC) and CDSC Wales. The methods used to collect data and calculate rates have been described elsewhere (1,2). Laboratory reports of antibiotic resistant isolates of *Neisseria gonorrhoeae* were supplied by the Genitourinary Infections Reference Laboratory at Bristol PHL.

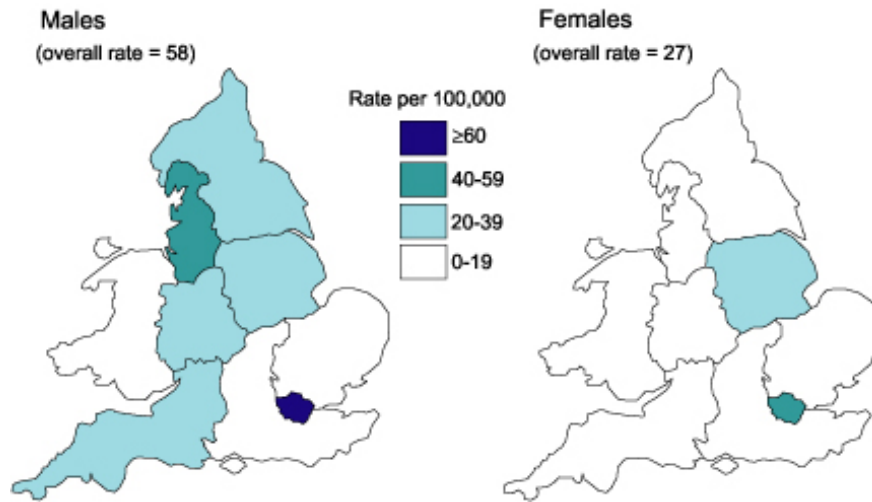
After declining steeply during the mid-1980s and early 1990s, diagnoses of gonorrhoea rose sharply each year between 1995 and 1999 (figure 1). Between 1998 and 1999, diagnoses rose by 25% (12,734 to 15,879): 27% in males (8562 to 10,855) and 20% in females (4172 to 5024). Diagnoses in males outnumbered those in females by a ratio of 2:1. Over the same period, epidemiological treatment of suspected gonorrhoea (the treatment of sexual partners of individuals who have been diagnosed with gonococcal infection) rose for both male and female sexual contacts, by 9% (1459 to 1595) and 21% (1544 to 1875) respectively.

**Figure 1 New diagnoses of gonorrhoea seen in GUM clinics (KC60) by sex: 1978 to 1999**



In 1999, London clinics contributed disproportionately high numbers of diagnoses for both males (44% of the total: 5008/10,855) and females (38%: 1986/5024). Rates of diagnoses were therefore highest in London, at 141/100,000 population for males and 55/100,000 for females (figure 2). Outside London, rates in males were highest in the North West (42/100,000) and West Midlands (38/100,000), and lowest in Wales (14/100,000). Rates in females outside London were highest in Trent (21/100,000), West Midlands (19/100,000) and North West (18/100,000) but were lower than 10/100,000 in the South West and South East regions. Between 1995 and 1999 there were significant annual increases in the number of diagnoses in Wales and every English region (except for males in Trent and females in the West Midlands) (1). The largest increases were in the North West, where there was an average increase of 20% per year in both males and females.

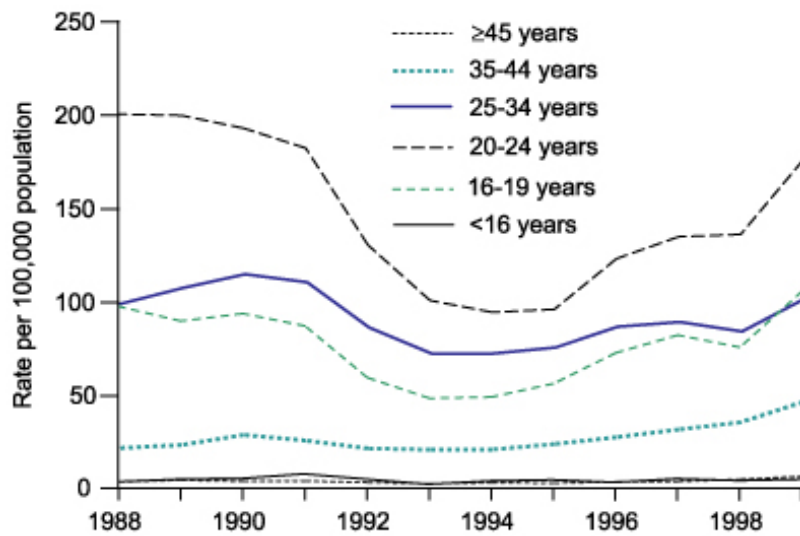
**Figure 2 New diagnoses of gonorrhoea seen in GUM clinics (KC60) by sex and region: 1999**



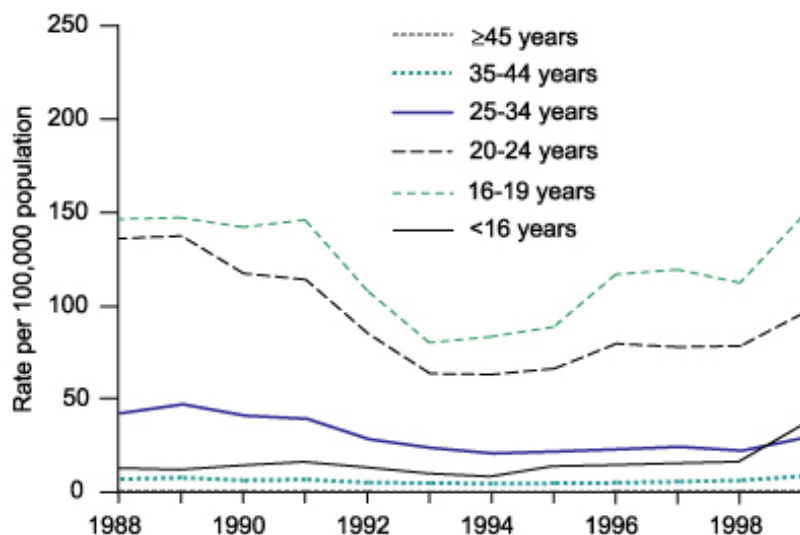
In 1999, diagnostic rates were highest in 20 to 24 year old males (175/100,000) and 16 to 19 year old females (148/100,000) (figure 3). Between 1995 and 1999 there were significant increases in the number of diagnoses in all age groups, except in males aged under 16 years (1).

**Figure 3 New diagnoses of gonorrhoea seen in GUM clinics (KC60) by sex and age group: 1988 to 1999**

**a) males**

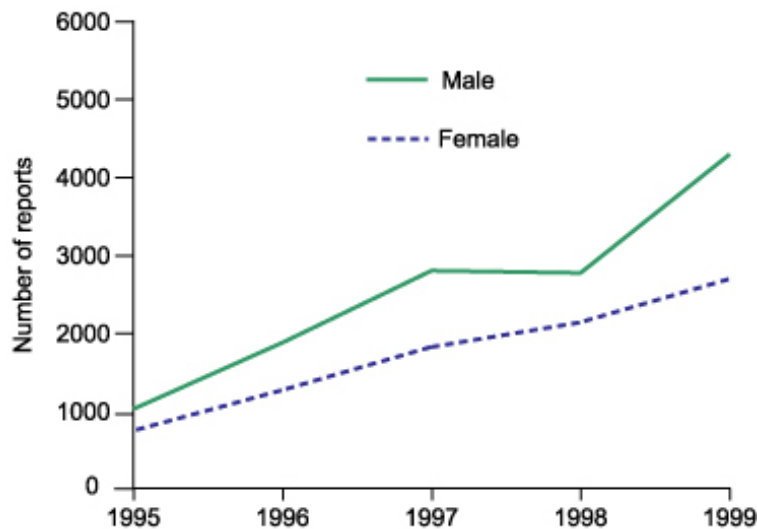


**b) females**

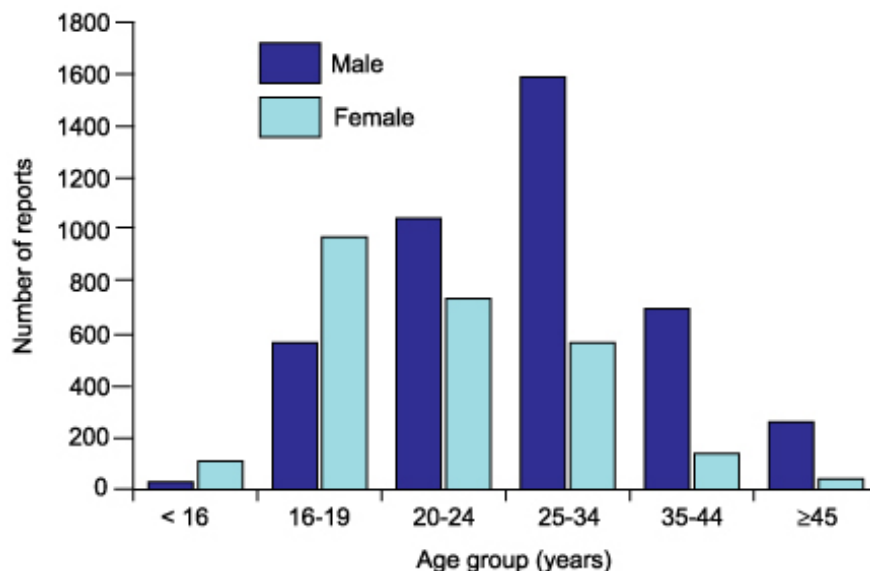


Reporting of all *N. gonorrhoeae* isolates started in 1995. Between 1995 and 1999, laboratory reports of *N. gonorrhoeae* increased by 313% in males and 272% in females (figure 4). Part of this rise may be attributable to the change in reporting practice although the corresponding increase in diagnoses recorded in the KC60 dataset suggests that this may also reflect changes in the actual incidence of gonorrhoea and behavioural changes (1). In 1999, 6974 reports were received, 4312 in males and 2662 in females. The highest numbers of reports for males were seen in the 25 to 34 year age group and for females in the 16 to 19 year age group (figure 5). Laboratory reporting data only records 44% of the gonorrhoea cases seen in the KC60 dataset. Laboratory report data comes from settings other than GUM and this may account for the differences in age distribution seen between the two datasets.

**Figure 4 Laboratory reports of *Neisseria gonorrhoeae* by sex: 1995 to 1999**



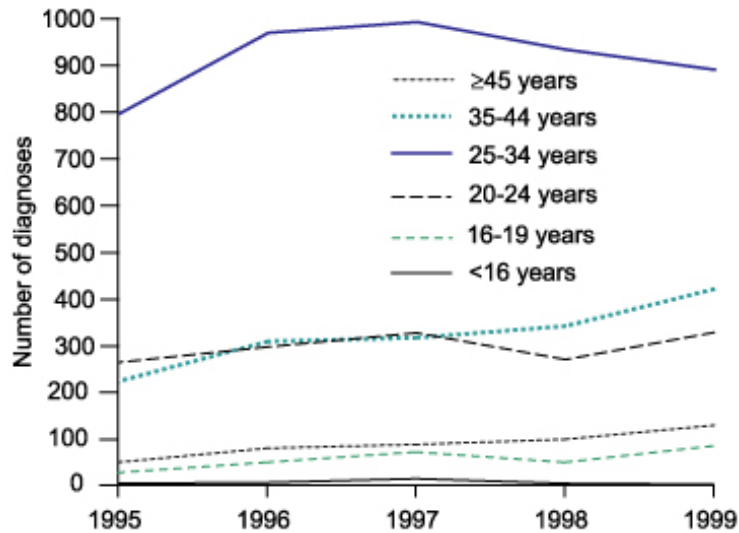
**Figure 5 Laboratory reports of *Neisseria gonorrhoeae* by sex and age group: 1999**



### Gonorrhoea acquired through sex between men

Cases of gonorrhoea acquired through sex between men have been reported on form KC60 since 1988, but age group data has only been available since 1995. In 1999, 17% (1831/10,855) of all diagnoses of gonorrhoea in males were homosexually acquired and 61% (1111 of 1831) of these infections were diagnosed in London. Between 1995 and 1999, almost 50% of all diagnoses in men who have sex with men (MSM) were consistently seen in the 25 to 34 year age group (figure 6). Increases in unsafe sexual behaviour may account for the recent rises in gonorrhoea amongst MSM (3).

**Figure 6 New diagnoses of gonorrhoea in men who have sex with men by age group: 1995 to 1999**



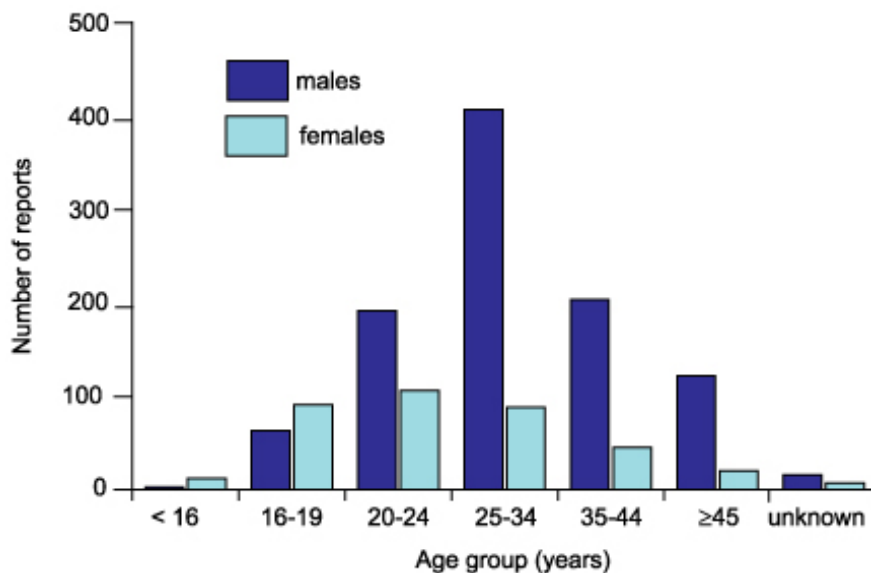
### Recent outbreaks of gonorrhoea in England and Wales

The increases in diagnoses of sexually transmitted infections (STIs) seen since 1995 have been accompanied by local outbreaks of syphilis, gonorrhoea, and HIV. Since 1996, two outbreaks of gonorrhoea have been documented together with four outbreaks of syphilis and one of HIV (1). These outbreaks provide a valuable insight into factors underlying the increase in STI diagnoses. The gonorrhoea outbreaks in Grimsby and Rochdale were among heterosexuals, the latter caused by a ciprofloxacin resistant strain (4,5). The KC60 dataset indicates that the group at highest risk of STI acquisition is young people but this group was not implicated in either outbreak. This illustrates the complexities of the epidemiology of STIs and the need for the routine collection of detailed behavioural, demographic, and microbiological data. The Department of Health is funding a surveillance initiative to investigate the feasibility and acceptability of collecting detailed disaggregated data from GUM clinics. This surveillance system is being piloted in London and the former Thames regions over the next two years by unifying existing systems that have been operating in parts of London and the South East.

### Laboratory reports of antimicrobial resistant isolates of *Neisseria gonorrhoeae*

The Genitourinary Infections Reference Laboratory (GUJRL) provides a reference service for antimicrobial resistant isolates and maintains a large culture collection of *N. gonorrhoeae* strains. In 2000, the GUJRL received 1427 antibiotic resistant isolates of *N. gonorrhoeae* (1004 from men, 369 from women and 54 from patients whose sex was not stated), a 66% increase on 1999 and the largest rise since 1988. For males, the highest numbers of isolates were from the 25 to 34 year age group, and for females, the 20 to 24 year age group (figure 7). The site of infection was recorded for 1311 isolates: 956 from men and 355 from women. For heterosexual men, 95% of isolates were from the urethra, whereas for MSM, 67%, 20%, and 13% of isolates were from the urethra, rectum, and throat respectively. For female patients, 96% of isolates were from the cervix, vagina, or urethra.

**Figure 7 Laboratory reports of antimicrobial resistant isolates of *Neisseria gonorrhoeae* by sex and age group: 2000**



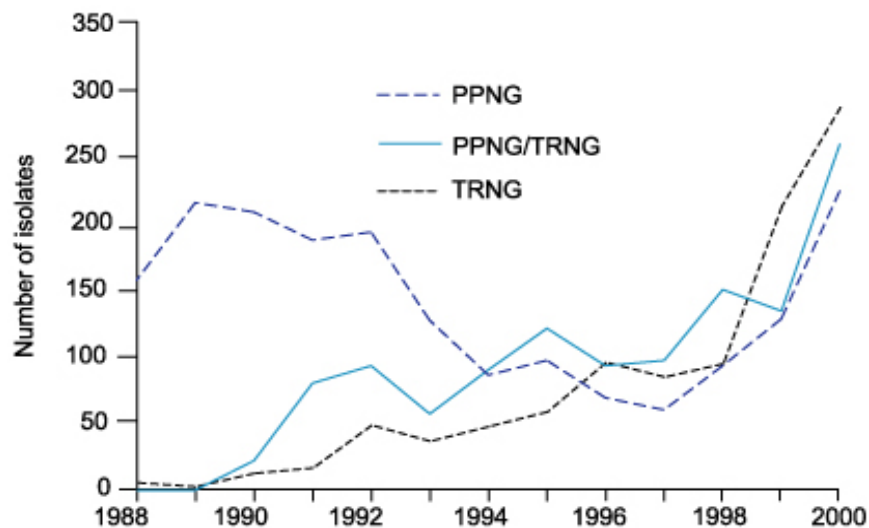
Ethnic origin and geographical region where infection was acquired were recorded for 981 cases (69%) of which 71% were White, 12% Black Caribbean, 3% Black African and 8% Asian. Sixty-seven percent (657) reported that the infection had been acquired in the UK and 17% in the Far East. The proportions are very similar to those seen in previous years.

**Table Antibiotic resistance in *Neisseria gonorrhoeae*: glossary of terms**

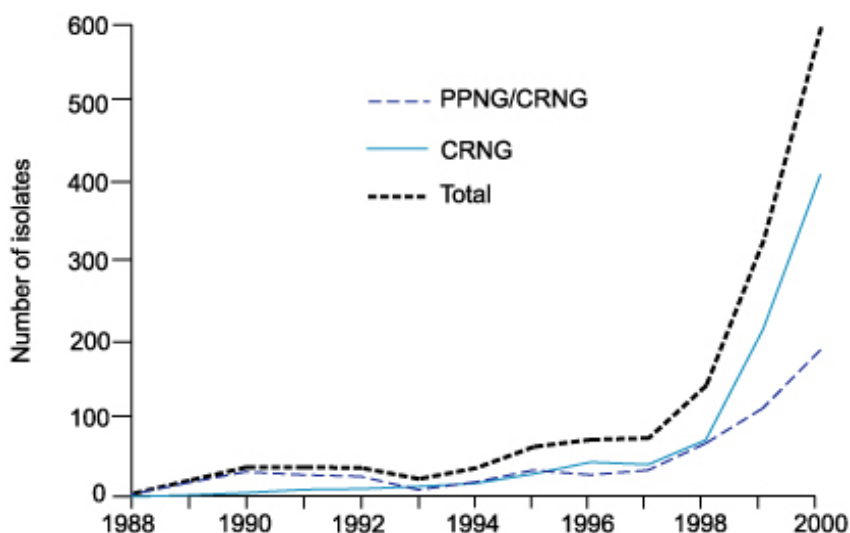
Abbreviation	Description (site of resistance gene)
PPNG	Penicillinase-producing <i>N. gonorrhoeae</i> (plasmid)
TRNG	High-level tetracycline resistant <i>N. gonorrhoeae</i> : minimum inhibitory concentration (MIC) $\geq 16$ mg/l (plasmid)
CRNG	Decreased susceptibility to ciprofloxacin: MIC $\geq 0.05$ mg/l (chromosome)
PPNG/TRNG	Penicillinase-producing and high-level tetracycline resistant <i>N. gonorrhoeae</i> (both plasmid)
PPNG/CRNG	Penicillinase-producing <i>N. gonorrhoeae</i> (plasmid) with decreased susceptibility to ciprofloxacin (chromosome)
CMRNG	Chromosomally-mediated resistant <i>N. gonorrhoeae</i> : resistant to penicillin (MIC $> 1$ mg/l) and tetracycline (MIC $> 1$ and $< 16$ mg/l) (chromosome)

Between 1997 and 2000 there was a threefold increase in the numbers of penicillinase-producing (PPNG) isolates without any other plasmid mediated resistance to antibiotics (figure 8). The number of PPNG isolates with additional high-level plasmid-mediated resistance to tetracycline (PPNG/TRNG) was higher than the number of PPNG, as has been the case in every year since 1994. Plasmid analysis revealed that, in addition to the 25.2MDa conjugative plasmid which carries the tetracycline resistance gene found in all TRNG, 70% of PPNG/TRNG isolates contained the *African* (3.2MDa) penicillinase plasmid, 26% contained the *Asian* (4.4MDa) penicillinase plasmid, and 4% contained the *Toronto/Rio* (3.0MDa) penicillinase plasmid. In contrast, PPNG isolates comprised, 55%, 4%, and 41% of *African*, *Asian*, and *Toronto/Rio* penicillinase plasmids respectively. In 2000, decreased susceptibility to ciprofloxacin was detected in 595 isolates, a sevenfold increase since 1997. One hundred and eighty-five (31%) were also PPNG (figure 9). Resistance to ciprofloxacin was found in 344 (58%) of the 595 isolates, a 10.5 fold increase on reports since 1997. Of the 344 resistant strains, 134 (39%) were also PPNG and a further 74 (22%) were CMRNG. Of the ciprofloxacin resistant strains, 46% were acquired in the UK, 41% in the Far East, and 7% in the Indian subcontinent. This contrasts with 1997 when 7%, 47%, and 27% were acquired in the UK, Far East, and the Indian subcontinent respectively.

**Figure 8 Trends in plasmid-mediated antimicrobial resistant *Neisseria gonorrhoeae*: 1988 to 2000**



**Figure 9 Trends in *Neisseria gonorrhoeae* strains with reduced susceptibility to ciprofloxacin: 1988 to 2000**



In June 2000, CDSC, GUIRL, and Imperial College (London) launched the Gonococcal Resistance to Antimicrobials Surveillance Programme (GRASP), a sentinel surveillance programme which monitors gonococcal antimicrobial resistance in England and Wales. The initiative is funded by the Department of Health and undertaken in collaboration with the Medical Society for the Study of Venereal Diseases and the Scottish *N. gonorrhoeae* Reference Laboratory. The GRASP dataset is patient-based and data are collected for all gonococcal isolates from selected laboratories within regional health authorities. This provides an estimate of the prevalence of antimicrobial resistance in England and Wales. The dataset will also be used to identify relevant clinical and epidemiological associations with gonococcal resistance and inform rational and cost-effective antimicrobial prescribing policies for *N. gonorrhoeae*.

Data from the first GRASP study will be published by shortly the PHLS next month and will present demographic, clinical, and behavioural characteristics of patients diagnosed with gonorrhoea together with antimicrobial susceptibility. Preliminary findings indicate that gonococcal infection remains highly concentrated within groups such as men who have sex with men, and black and ethnic minorities. High levels of gonococcal infection within these groups have also been identified by other surveillance and research projects (7,8). High levels of re-infection and asymptomatic infection were seen amongst patients diagnosed with gonorrhoea in GUM clinics. In addition, there was significant geographic variation in the expected prevalences of penicillin and ciprofloxacin resistance in England and Wales.

1. PHLS, DHSS&PS and the Scottish ISD(D)5 Collaborative Group. *Trends in sexually transmitted infections in the United Kingdom, 1990-1999*. London: Public Health Laboratory Service, 2000.

2. CDSC. Sexually transmitted diseases quarterly report: gonorrhoea in England and Wales. *Commun Dis Rep CDR Wkly* 1999; **9**: 270-2.

3. Fenton K, Rogers P, Simms I, Maguire H, Catchpole M. Increasing gonorrhoea reports - not only in London. *Lancet* 2000; **355**: 1907.

4. CDSC. Increase in gonorrhoea cases in Grimsby. *Commun Dis Rep CDR Weekly* 1998; **8**: 297.

5. *Sexually transmitted diseases in Oldham (Press release)*. Oldham: Oldham NHS Trust, 29 February 2000.

6. Bignell C. National guidelines for the management of gonorrhoea in adults. *Sex Trans Infect* 1999; **75**: S13-5.

7. Lacey C, Merrick DW, Bensley DC, Fairley I. Analysis of the sociodemography of gonorrhoea in Leeds, 1989-93. *BMJ* 1997; **314**: 1715-8.

8. Hughes G, Andrews N, Catchpole M, Goldman M, Forsyth-Benson D, Bond M, et al. Investigation of the increased incidence of gonorrhoea diagnosed in genitourinary medicine clinics in England, 1994-6. *Sex Trans Infect* 2000; **76**: 18-24.