



Health Protection Report

weekly report

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Third annual report on healthcare associated infections

The HPA has published its third annual report on healthcare associated infections (HCAIs) [1]. The aims of this report are to identify key information on HCAI in England, demonstrating the burden of infection when possible, trends, notable events, impact of activities and gaps that need attention. The report focuses on those infections which are subject to mandatory surveillance, but placing them in the context of broader surveillance of bloodstream infections and surgical site infection. This year, the report has been expanded to include contributions on activities in the surveillance, prevention and control of HCAI from across the HPA.

The report reviews the main pathogens causing bloodstream infections, though not all such infections are healthcare-associated. The commonest cause of bloodstream infections continues to be *E. coli*, which accounts for 18% of all reported bloodstream infections. This proportion has remained stable over the past 5 years. Bloodstream infections due to *S. aureus* continue to fall; in particular, the downward trend in MRSA infections makes it likely that the national target of a 50% reduction in numbers on the 2003/4 figures will be met. However, bloodstream infections due to coagulase-negative staphylococci are rising, but it is as yet unclear how much of this reflects true infections in vulnerable groups of patients rather than contamination by skin organisms. During the period 2003 to 2007 numbers of reported bloodstream infections associated with *Candida* species have risen by 37%, whilst those associated with *Streptococcus pneumoniae* bloodstream infections have reduced by 13%.

Noroviruses are the most commonly detected cause of infectious gastroenteritis and this year's season started uncharacteristically early and peaked early in 2008 with the highest number of reports ever received in a week. Although infections are usually self-limiting and not serious, they can have a major impact in hospitals and the community. The first fall in *C. difficile* infections in regions and different types of Trusts has been seen, hopefully heralding a downward trend in these infections. The changing pattern in *C. difficile* ribotypes across the regions of the UK is also of interest, with 027 becoming the predominant type across the country.

There have been notable reductions in surgical site infection rates, particularly in hip and knee replacement surgery and hip arthroplasty. English rates of surgical site infection are comparable with those in other European countries. Two thirds of these infections are superficial.

A new chapter in the report discusses key issues for the future, highlighting areas requiring more attention and how the focus of activity can be extended to reflect the broader public health impact of HCAI.

Reference

1. HPA. *Surveillance of Healthcare Associated Infections Report 2008*. London: Health Protection Agency, 2007. Available at: http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1216193832294?p=1158945066450
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Sexually transmitted infections and young people in 2007

Incidence of STIs among young people is the subject of a new HPA report *Sexually transmitted infections and young people in the UK: 2008 report* [1], which highlights the extent to which new cases – particularly chlamydia, gonorrhoea and genital warts – occur among 16-24 year-olds.

The report summarises data on STIs diagnosed at GUM clinics and information collected by the National Chlamydia Screening Programme during the previous year (2007). Latest data show that, whereas only one in eight of the population fall into the 16-24 year-old group, this group accounts for around half of all newly diagnosed STIs in GUM clinics across the UK: 65% of all new chlamydia cases (79,557 of 121,986), 55% of all new genital warts cases (49,250 of 89,838) and 50% of new gonorrhoea diagnoses (9,410 of 18,710).

The report also makes recommendations regarding improvements in services for young people as well as key messages to be imparted to young people so that they can protect themselves from acquiring an STI.

Further information regarding annual data on STI diagnoses at GUM clinics during 2007 was published on the HPA website this week. These data are summarised in the Infection Reports section of this issue [2].

Reference

1. *Sexually transmitted infections and young people in the UK: 2008 report*. London: HPA, 2008. Available at http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1216022460726?p=1158945066450
2. HPA. Data from UK GUM clinics up to 2007 indicates continued increase in most sexually transmitted infection reports. *Health Protection Report*, Vol. 2 No. 29, Infection Reports.

Outbreak of cryptosporidiosis associated with a water contamination incident in the East Midlands

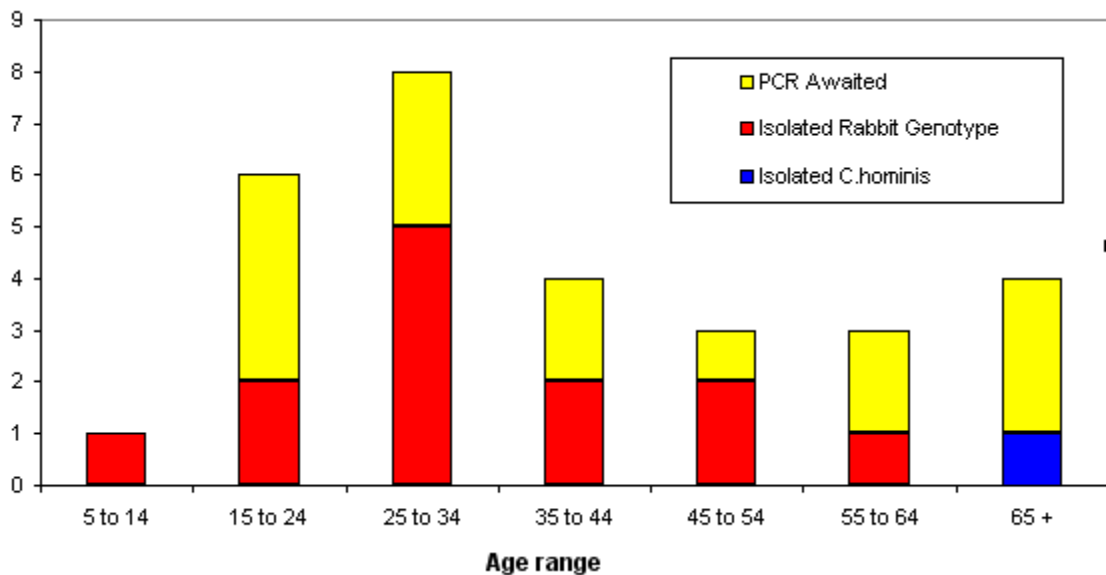
An estimated 250,000 individuals were put at risk by the exceedance in cryptosporidial oocysts found in the water supply leaving Pitsford Reservoir during the period 19 to 24 June 2008 [1]. This affected Northampton Town, Daventry, South Northamptonshire and areas in Wellingborough. The exceedance in cryptosporidial oocysts was identified through routine sampling carried out by Anglian Water at this site and a Boiled Water Notice was issued at 6.00 am on the 25 June 2008 after discussions with the East Midlands South Health Protection Unit (HPU). Subsequently, a succession of Incident Control Team meetings took place involving the local HPU, senior Health Protection Agency experts, the Cryptosporidium Reference Laboratory and various local partners. The HPU put out advice to local GPs, A&E Departments and Walk-In Centres and encouraged these colleagues to test people with diarrhoea.

An extensive cleaning and monitoring programme was undertaken throughout the distribution system by Anglian Water and the water leaving Pitsford Reservoir was found to be free of oocysts by 26 June 2008. Considering all the evidence available, the local Incident Control Team – which included representatives from the HPA, Anglian Water, the local Primary Care Trust, local authorities, microbiologists and HPA national experts – decided to lift the Boil Water Notice on Friday 4 July.

The source of the contamination was subsequently identified as a small rabbit that had gained access to the treatment process. Further testing of the water samples taken from the distribution system, and also from the rabbit, carried out by the Cryptosporidium Reference Laboratory in Swansea, confirming that they were of the same strain, identified as a rabbit genotype.

The local HPU has so far been notified of 29 cases of cryptosporidiosis from people in the affected area. Early epidemiological data suggest that most of this disease was a result of exposure to

Figure 2. Age range of all cryptosporidiosis cases by typing results



Reference

1. HPA. Large summer and autumn peak of cryptosporidiosis in England and Wales 2003, *Health Protection Report* [serial online] 2008, **2**(26): news. Available at <http://www.hpa.org.uk/hpr/archives/2008/hpr2608.pdf>

Imported case of Marburg haemorrhagic fever in the Netherlands

On 10 July 2008, the World Health Organization was notified of a case of Marburg haemorrhagic fever in a Dutch traveller who had recently returned from a holiday in Uganda [1].

The case was a 40 year-old woman who had travelled to south west Uganda between 5 and 28 June and as part of a tour group, had visited two caves near the Queen Elisabeth National Park (NP). The first cave was visited on 16 June at Fort Portal . No bats were seen in this cave. The second cave (called Python Cave), in the Maramagambo Forest between Queen Elisabeth NP and Kabale, was visited on 19 June where she sustained direct contact with a bat. Only the case, her partner and the guide from the tour party entered the cave. A map showing the location of the cave is available on the European Centre for Disease Prevention and Control website [2]. The case started to show symptoms of fever and chills on 2 July after return to the Netherlands; she was not symptomatic on the flight home. She rapidly deteriorated on 7 July with severe haemorrhaging and died from her illness on 11 July 2008. All those who had close contact with the woman, since she was symptomatic, have been notified and are being monitored. No other members of the tour party have shown similar symptoms.

Python cave is known to harbour species of bat that have been found to carry filoviruses in other parts of sub-Saharan Africa. The Python Cave is being implicated as the likely site of exposure but further epidemiological investigations are ongoing to exclude other possible exposure sites. The WHO has informed the Ministry of Health (MoH) in Uganda who are taking steps to investigate these events; WHO has also recommended that the MoH warn residents and travellers to Uganda against entering caves with bat populations. A small outbreak of Marburg haemorrhagic fever was reported in a mining town in eastern Uganda in late June 2007; bats inside the mine were suspected to be the source of infection [3].

In the UK, the Federation of Tour Operators has been informed and the National Travel Health Network and Centre have advised that travellers to Uganda should be aware of the apparent risk of contracting Marburg when visiting caves in the Maramagambo forest. Travellers are also advised to avoid other caves in Uganda where bats are present [4].

Marburg virus is highly transmissible by direct contact with blood, secretions, organs, or other bodily fluids of dead or living infected persons. Transmission can also occur by contact with infected animals

(certain species of monkeys and bats). Marburg and Ebola viruses are the causes of the most severe forms of viral haemorrhagic fever (VHF). No cases of Marburg haemorrhagic fever have been reported in the UK to date.

Travellers who have been potentially exposed to Marburg virus should seek medical attention immediately if they experience any of the following symptoms: fever, headache, fatigue, dizziness, muscle aches and weakness within 21 days of the exposure.

Further information

More information about VHF (including the Management and Control of Viral Haemorrhagic Fevers Guidance from the Advisory Committee on Dangerous Pathogens, 1996) is available on the HPA website under Marburg Haemorrhagic Fever; Background information.

<http://www.hpa.org.uk/webw/HPAweb&Page&HPAwebAutoListName/Page/1216193825381?p=1216193825381>

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1. World Health Organization. Case of Marburg Haemorrhagic Fever imported into the Netherlands from Uganda. *Disease Outbreak News*, 10 July 2008. [Accessed 16 July 2008.] Available at http://www.who.int/csr/don/2008_07_10/en/index.html.
 2. European Centre for Disease Prevention and Control. *Imported Marburg case reported in The Netherlands, updated 11 July 2008*. [Accessed 16 July 2008.] Available at <http://ecdc.europa.eu/>.
 3. World Health Organization. *Managing Marburg fever in Uganda*. 10 September 2007. [Accessed 16 July 2008]. Available at http://www.who.int/features/2007/marburg_fever/en/index.html.
 4. National Travel Health Network and Centre. Marburg haemorrhagic fever in a traveller to Uganda. *Clinical update*. 11 July 2008. [Accessed 16 July 2008.] Available at http://www.nathnac.org/pro/clinical_updates/marburg_110708.htm.
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Infection reports

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Bacteraemia

▶ **MRSA bacteraemia, *Clostridium difficile* and GRE bacteraemia mandatory reports, 2007**

MRSA bacteraemia, *Clostridium difficile* and GRE bacteraemia mandatory reports, 2007

MRSA and GRE bacteraemia and *Clostridium difficile* infection data have been published as part of the Department of Health's mandatory surveillance programme for healthcare-associated infection. This programme provides for quarterly publication of the MRSA bacteraemia and *C. difficile* infection data and annual publication of GRE bacteraemia data. For the first time, the *C. difficile* infection data are published by financial year as well as calendar year, as a result of enhancements to the surveillance (in order to allow monitoring of the new PSA target for *C. difficile*) which came into effect on 1 April 2007.

The highlights are: a continuing fall in MRSA bacteraemias and, whilst there has been a 6% increase in *C. difficile* infections in patients aged 65 years and over compared to the previous quarter, this marks a 32% fall on the same period in the previous year. The annual numbers and rate of *C. difficile* infection appear to be falling. GRE bacteraemia levels are similar to the previous year, but the number of Trusts with 10 or more of these infections is rising. Most of these are acute teaching Trusts.

MRSA bacteraemia (all ages)

- **Quarterly data for MRSA bacteraemia**

Data for January to March 2008 show that there were 966 reports of MRSA bacteraemia between January and March 2008, which is an 11% decrease on the 1,088 cases recorded for the last quarter (October to December 2007).

- **Six monthly data for MRSA bacteraemia**

In the six months between October 2007 and March 2008 there were 2,054 reports of MRSA bacteraemia. This represents a 14% decrease from the 2,384 reports in the previous six month period.

- **Financial year data for MRSA bacteraemia**

During financial year April 2007 to March 2008, 4,438 cases of MRSA bloodstream infection were reported. This is a decrease of 30% from financial year 2006/07, when there were 6,383 reports. The rate of MRSA bacteraemia in 2007/08 was 1.16 cases per 10,000 bed-days. This compares to a rate of 1.67 cases per 10,000 bed-days reported for 2006/07.

C. difficile

- **Quarterly data for C. difficile infection (2-64 years of age and 65 years and over)**

Data show that there were 2,353 cases recorded between January and March 2008 in patients aged between 2 and 64 years of age. This marks a 5% increase on the previous quarter (October to December 2007), when 2,237 cases were reported.

Data show that there were 10,586 cases recorded in patients aged 65 years and over during January to March 2008. This figure represents a 32% decrease when compared to the same period last year (January to March 2007), when 15,644 cases were reported.

It should be noted that numbers of *C. difficile* infections have historically been higher in the January to March quarter relative to previous quarters. The strong seasonality effect in previous years may in part be linked to the treatment of respiratory conditions (particularly pneumonia) by broad-spectrum antibiotics. There are two possible explanations for the observed decrease in *C. difficile* this year; less respiratory disease this winter than in previous years, and a possible reduction in the prescribing of these antibiotics. At this stage we are uncertain as to which was the predominant factor. However, it is part of the general trend of reduced *C. difficile* infections.

• **Calendar year data for *C. difficile* infection (65 years and over only)**

50,392 cases were reported between January and December 2007. This represents a 9% decrease in cases compared to January to December 2006, when 55,635 cases were reported. The national rate of *C. difficile* infection in patients aged 65 years and over decreased from 2.45 cases per 1,000 bed days in 2006 to 2.25 cases per 1,000 bed days in 2007.

• **Financial year data for *C. difficile* infection (2 - 64 years of age and 65 years and over):**

A total of 45,334 cases of *C. difficile* infection were reported in patients aged 65 years and over between April 2007 and March 2008. In patients aged 65 years and over a rate of 1.56 cases per 1,000 bed days was reported for the period April 2007-March 2008 (rates are based on specimens taken in an acute Trust hospital only).

A total of 10,059 cases of *C. difficile* infection in patients aged 2-64 years were reported for the 2007/8 financial year.

The rate of *C. difficile* infection in patients aged 2-64 years is 0.59 per 1,000 bed days for the period April 2007 to March 2008 (rates are based on specimens taken in an acute Trust hospital only).

Reported specimens from patients aged 2-64 years represent 18% of all reports under the mandatory scheme for *C. difficile* infection in patients aged 2 years and over.

GRE bacteraemia (all ages)

The latest annual (October 2006 to September 2007) reporting of glycopeptide-resistant enterococcal (GRE) bacteraemia shows that there were 910 reports during this period. This represents a marginal increase of 0.8% from the 903 cases reported between October 2005 and September 2006.

Figures for MRSA bacteraemia and *C. difficile* will continue to be published on a quarterly basis as part of the commitment to open reporting. GRE bacteraemia data will continue to be reported on an annual basis.

Further details of this publication can be found on the HPA website.

Reference

1. Quarterly reporting results for *Clostridium difficile* infections, MRSA Bacteraemia and GRE bacteraemia. July 2008. Health Protection Agency website [online]. London: Health Protection Agency, 17 July 2008 [accessed 18 July 2008]. Available at, http://www.hpa.org.uk/infections/topics_az/hai/Mandatory_Results.htm

HIV/Sexually Transmitted Infections (STIs)

- ▶ Data from UK GUM clinics up to 2007 indicates continued increase in diagnoses of sexually transmitted infection reports
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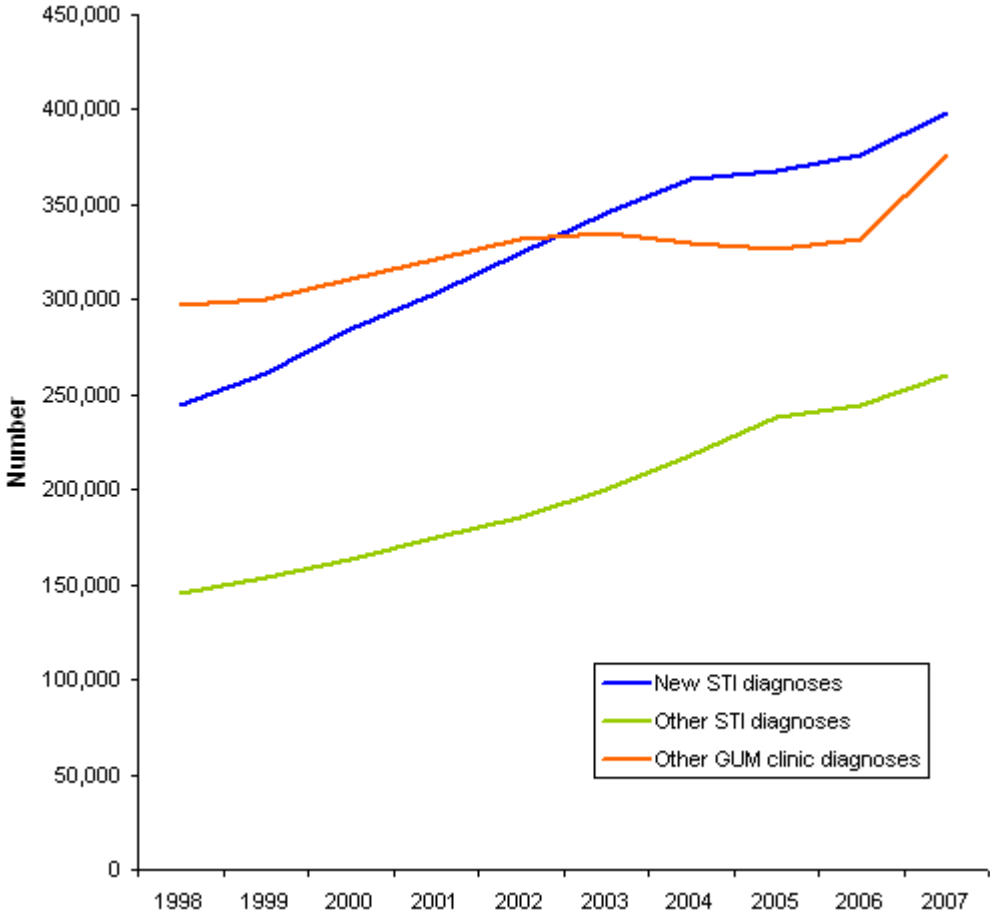
Data from UK GUM clinics up to 2007 indicates continued increase in diagnoses of sexually transmitted infections

Numbers of diagnoses of sexually transmitted infections (STIs) made at genitourinary medicine (GUM) clinics in the UK rose in 2007, continuing the upward trend of the last 10 years. Between 2006 and 2007, numbers of new STI diagnoses rose by 6% (from 375,843 to 397,990*) while recurrent and other STI presentations rose by 7% (from 244,442 to 260,544) (see box and figure 1).

* Note: This is not the number of people with a new diagnosis as multiple diagnoses can be made in individual patients.

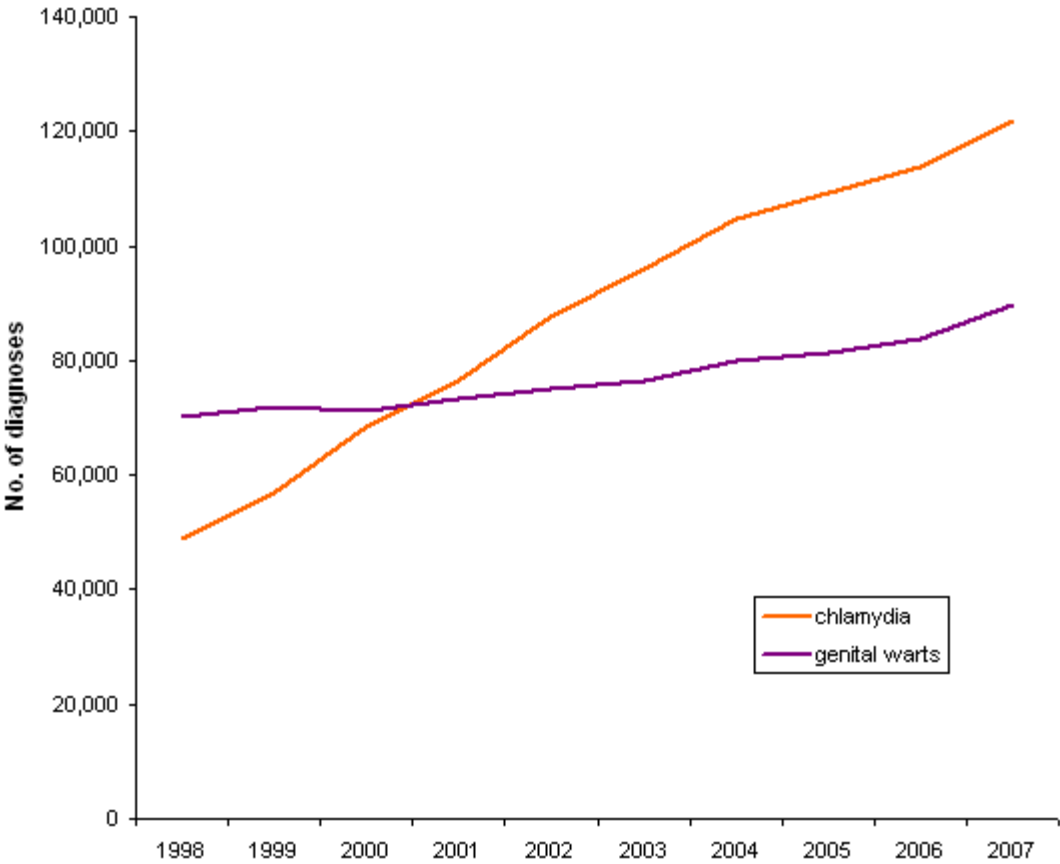
Diagnoses made and services offered at GUM clinics
New STI Diagnoses
Chlamydial infection (uncomplicated and complicated)
Gonorrhoea (uncomplicated and complicated)
Infectious syphilis
Genital herpes simplex (first attack)
Genital warts (first attack)
New HIV diagnosis
Non-specific genital infection (uncomplicated and complicated)
Chancroid/lymphogranuloma venerum (LGV)/Donovanosis
<i>Molluscum contagiosum</i>
Trichomoniasis
Scabies
<i>Pediculus pubis</i>
Other STI Diagnoses
Early latent, congenital and other acquired syphilis
Recurrent genital herpes simplex
Recurrent and re-registered genital warts
Subsequent HIV presentations (including AIDS)
Ophthalmia neonatorum (chlamydial or gonococcal)
Epidemiological treatment of suspected STIs (syphilis, chlamydia, gonorrhoea, non-specific genital infection)
Other diagnoses made at GUM clinics
Viral hepatitis B and C
Vaginosis and balanitis (including epidemiological treatment)
Anogenital candidiasis (including epidemiological treatment)
Urinary tract infection
Cervical abnormalities
Other conditions requiring treatment at a GUM clinic
Services provided
HIV antibody test
Sexual health screen
Hepatitis B vaccination
Contraception (excluding condom provision)
Other episode not requiring treatment

Figure 1. Trends in diagnoses made in GUM clinics in the UK



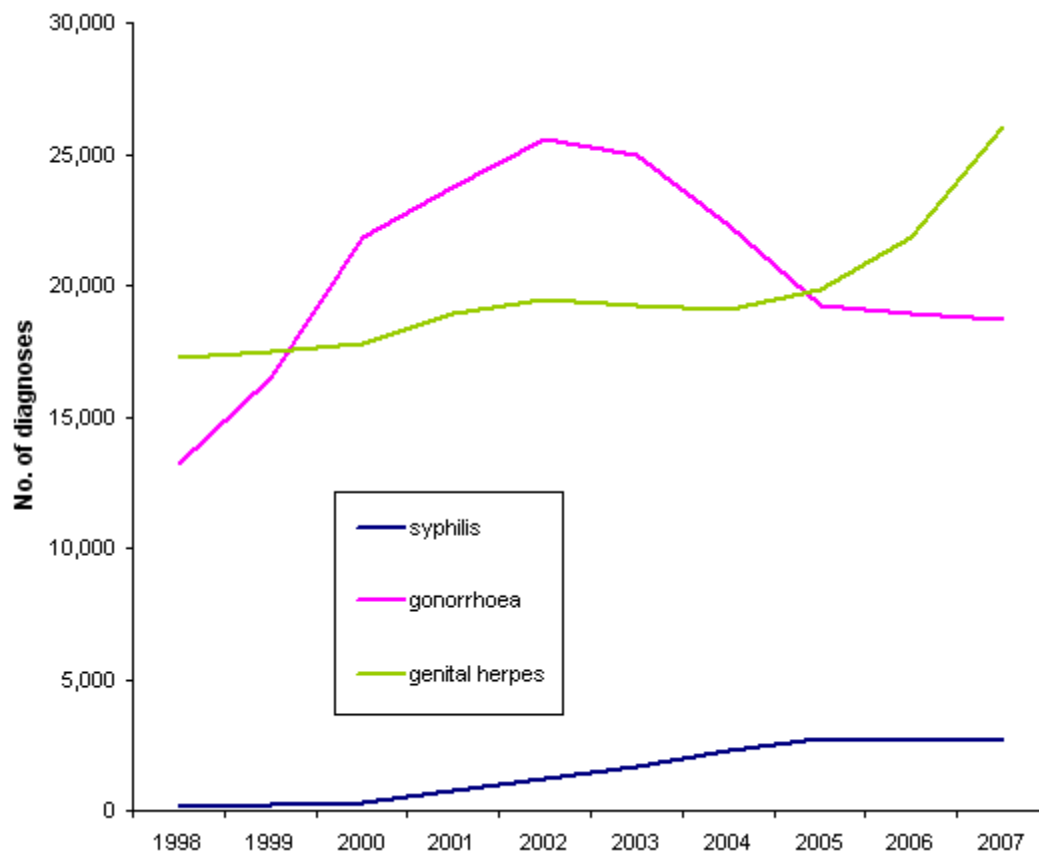
Genital chlamydial infection remained the most commonly diagnosed STI in GUM clinics with 121,986 diagnoses in 2007, a rise of 7% on 2006 (figure 2a). First attack genital warts diagnoses also increased by 7% over this period, from 83,624 to 89,838 (figure 2a). Together these two infections accounted for over a half (211,824/397,990) of all new STI diagnoses at GUM clinics in 2007.

Figure 2a. New diagnoses of selected STIs in GUM clinics in the UK, 1998-2007: Uncomplicated genital chlamydial infection and first attack genital warts



However, the most significant percentage increase in numbers of diagnoses was seen for first attack genital herpes infections, which rose by 20% from 21,797 to 26,062 (figure 2b). All these rises were observed in both men and women.

Figure 2b. New diagnoses of selected STIs in GUM clinics in the UK, 1998-2007: First attack genital herpes, uncomplicated gonorrhoea and primary and secondary syphilis



Syphilis remains a relatively rare infection in the UK overall, and the pronounced increase in total primary and secondary syphilis diagnoses observed since the late 1990s stabilised in 2007, at 2,680 cases (figure 2b). However, diagnoses of syphilis among men who have sex with men (MSM) have continued to rise, and between 2006 and 2007 primary and secondary syphilis diagnoses rose from 1,428 to 1,463 and those of early latent syphilis from 466 to 542 (figures 3a and b). Although there has been a modest rise in diagnoses among women over the last decade, most of the increase occurred among men, and has been strongly associated with high risk sexual behaviours among MSM [1]. Numbers of diagnoses of infectious and early latent syphilis among women declined in 2007, from 295 to 285 and 196 to 163, respectively (figures 3a and b). Total numbers of diagnoses of late complications of syphilis rose by 5% (1,923 to 2,025) between 2006 and 2007.

Figure 3a. New diagnoses of syphilis at GUM clinics in the UK, by gender and sexual orientation, 1998-2007: Primary and secondary syphilis

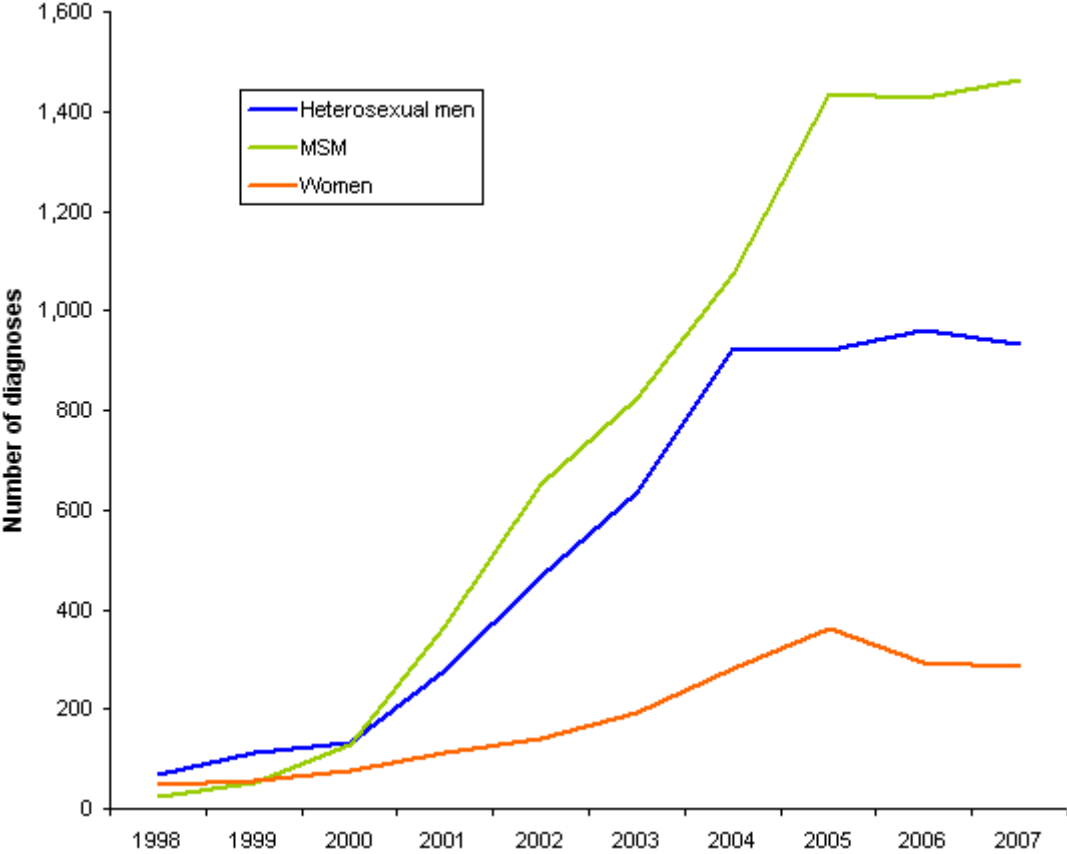
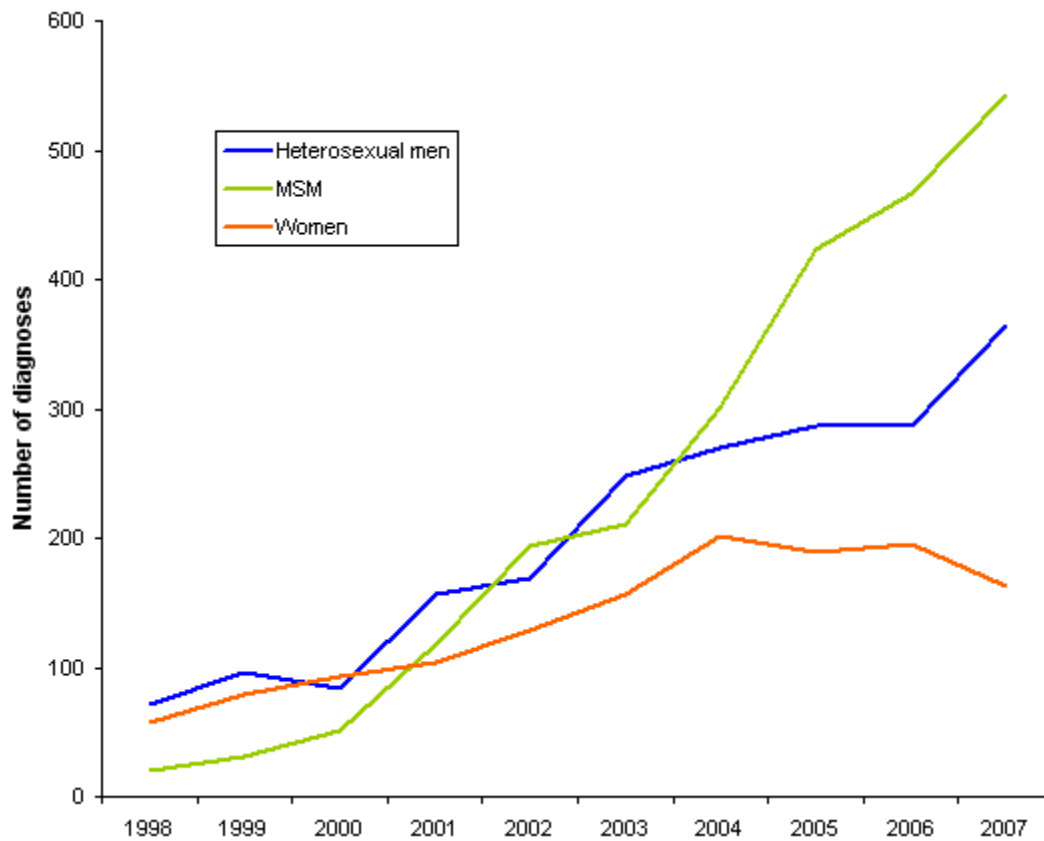


Figure 3b. New diagnoses of syphilis at GUM clinics in the UK, by gender and sexual orientation, 1998-2007: Early latent syphilis



In contrast to most other STIs, numbers of gonorrhoea diagnoses have been declining since 2002 and fell again slightly in 2007, to 18,710 diagnoses (figure 2b). However, trends in diagnoses among men and women differed: numbers fell by 5% in men and rose by 8% in women. Like syphilis, gonorrhoea tends to be geographically localised and concentrated in specific population 'core' groups, predominantly black ethnic minorities and MSM [1]. Effective local interventions may therefore have a significant influence on transmission and frequency of this infection.

Although young people aged 16 to 24 years represent only 12% of the population, they account for nearly half of STIs diagnosed in GUM clinics. Young people experience higher rates of infection because they are more sexually active and more susceptible to infection [2]. In 2007, rates of chlamydia, genital warts and gonorrhoea were highest in women aged 16 to 19 (1423, 830 and 137 per 100,000 population, respectively) and men aged 20 to 24 (1183, 815 and 174/100,000), while rates of genital herpes were highest in women and men aged 20 to 24 (242 and 122/100,000) (figures 4a, b, c and d). Rates of diagnoses have also been increasing steadily among young adults, and in 2007, rates of gonorrhoea diagnoses rose by 10% (from 125 to 137/100,000) in young women despite overall numbers of gonorrhoea stabilising (figure 4d).

Figure 4a. Rates of diagnoses of selected STIs in those aged under 25 years, UK, 2003-2007: chlamydia (uncomplicated)

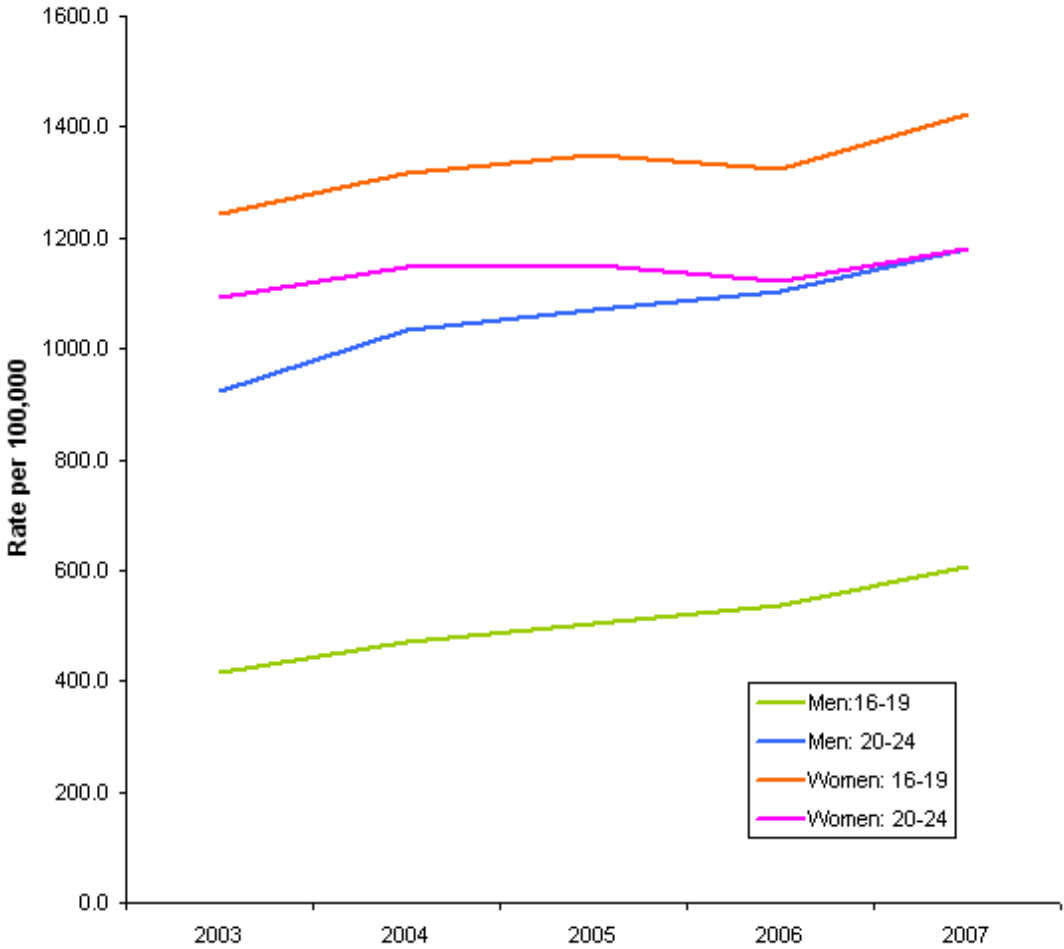


Figure 4b. Rates of diagnoses of selected STIs in those aged under 25 years, UK, 2003-2007: genital warts (first attack)

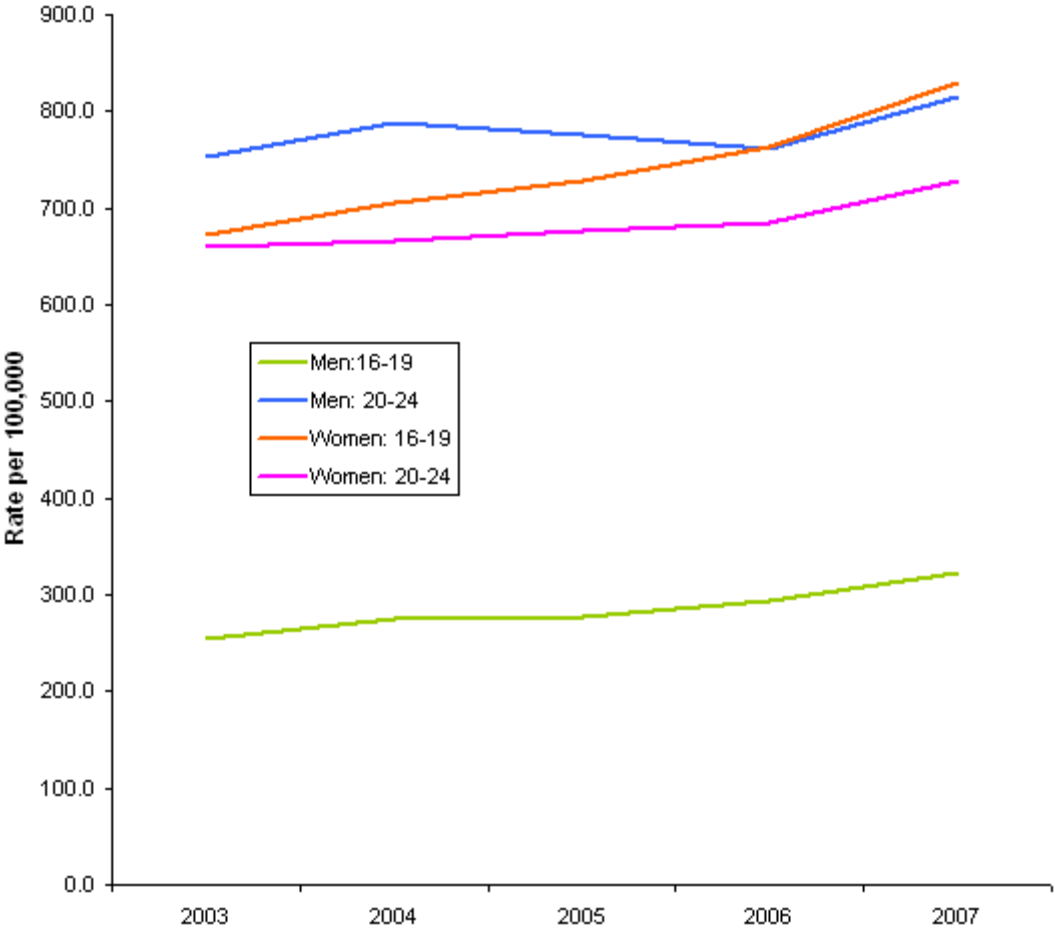


Figure 4c. Rates of diagnoses of selected STIs in those aged under 25 years, UK, 2003-2007: genital herpes (first attack)

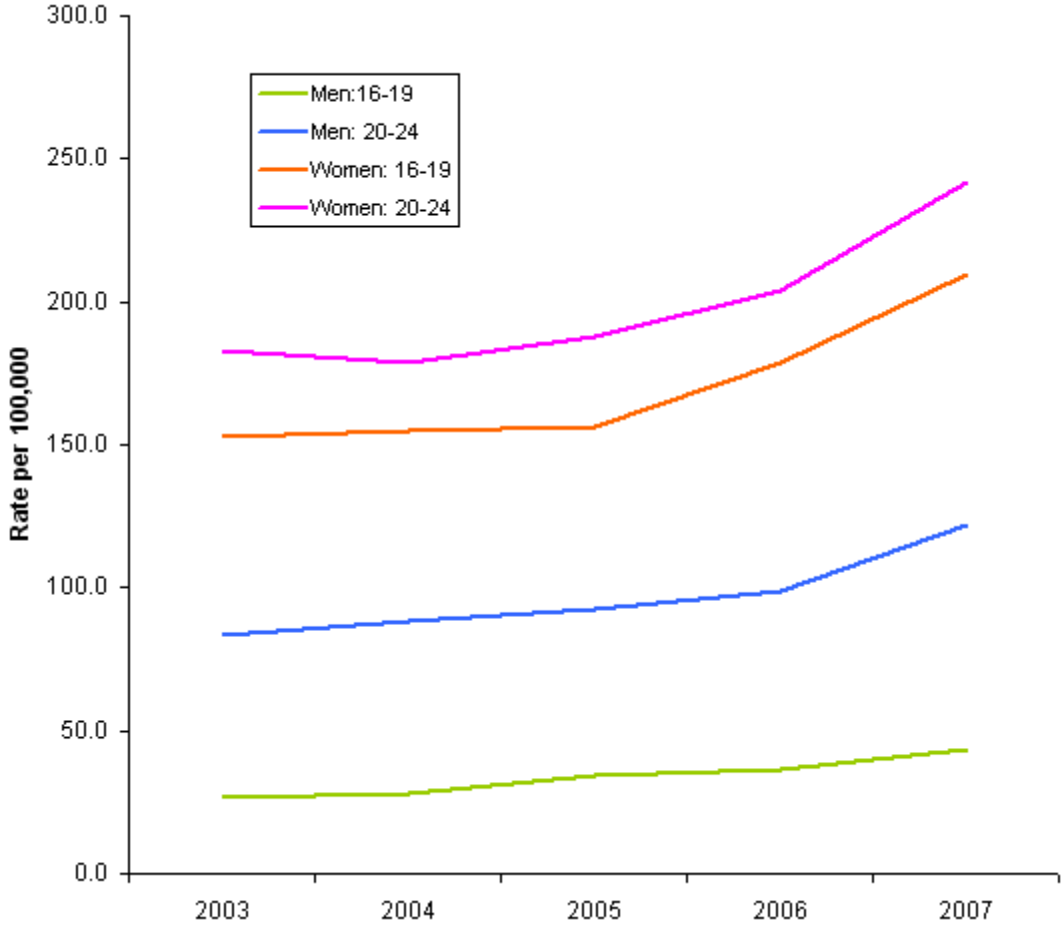
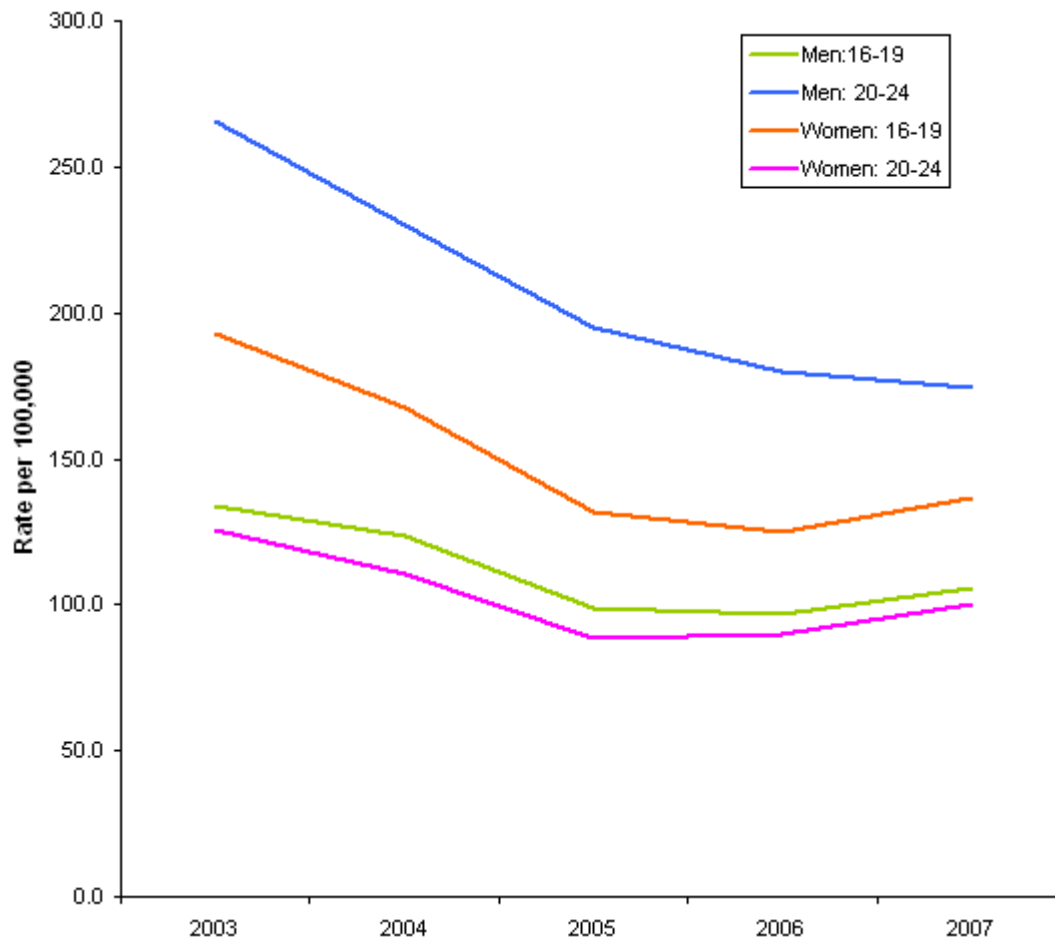


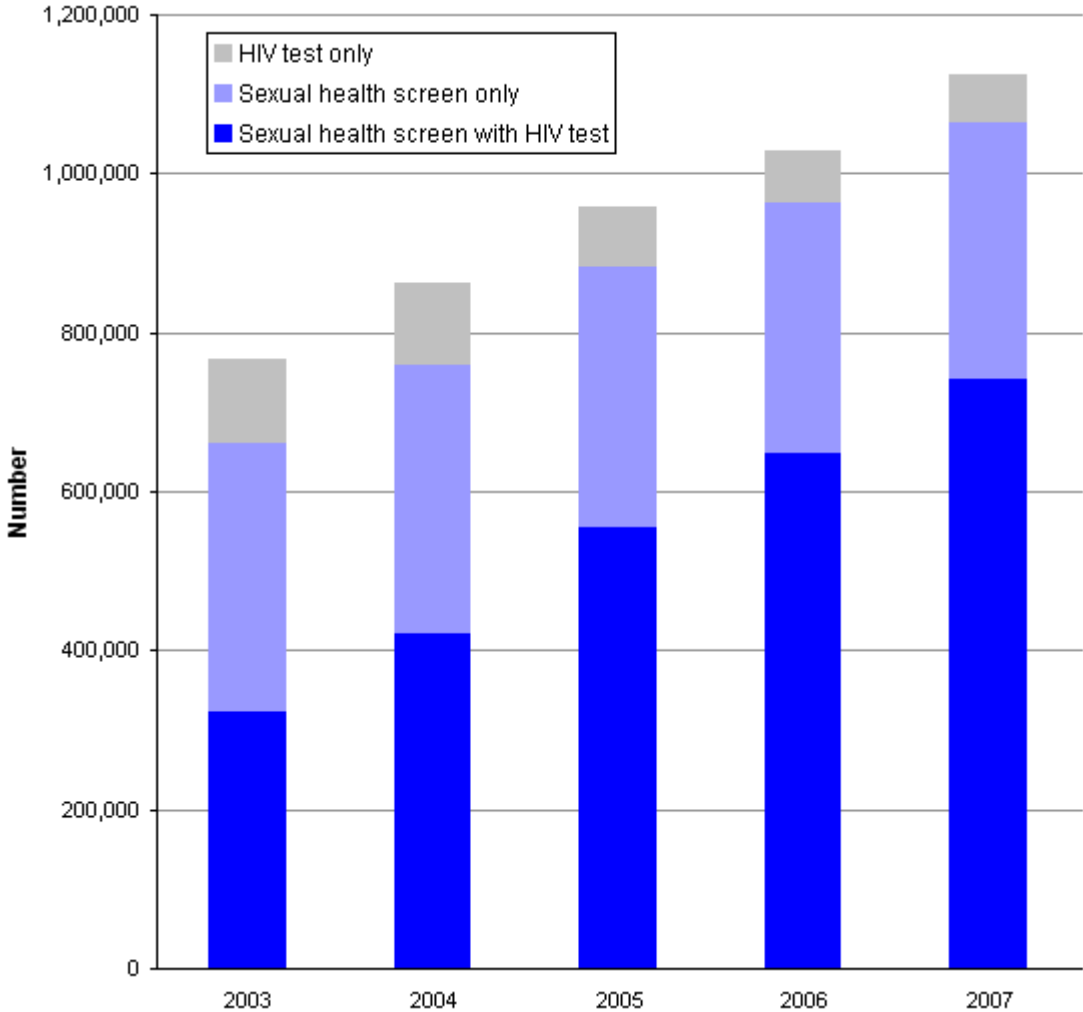
Figure 4d. Rates of diagnoses of selected STIs in those aged under 25 years, UK, 2003-2007: gonorrhoea (uncomplicated)



Although diagnosis rates in young adults are increasing, because infections like chlamydia and genital herpes are often asymptomatic, substantial numbers of young people may remain undiagnosed and untreated. The National Chlamydia Screening Programme in England aims to control chlamydial infection and its associated complications by offering regular chlamydia tests to asymptomatic young adults at a broad range of health care and community settings outside the GUM clinic setting [3]. All programme areas are now screening and efforts are underway to improve coverage of the target population.

To a certain extent, rising numbers of STI diagnoses reflect increased testing and improved diagnostic methods, especially the increasing use of molecular testing technologies, but this will vary with the different STIs. Changes in sexual behaviour also contribute. The number of sexual health screens done in GUM clinics (which includes a test for chlamydia and gonorrhoea at minimum) has risen considerably over the last 5 years, and by 10% (from 962,791 to 1,062,850) between 2006 and 2007 alone (figure 5). Seventy per cent of sexual health screens in 2007 included an HIV test. Improved uptake of testing and screening, together with decreased waiting times, ensures prompt treatment of those infected, thereby reducing the risk of transmission and the development of complications. If sustained, this could have a significant impact on the control of STIs.

Figure 5. Numbers of sexual health screens and HIV tests at GUM clinics, UK, 2003-2007



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1. HPA, Centre for Infection. *Testing Times - HIV and other Sexually Transmitted Infection in the United Kingdom 2007*. The UK Collaborative Group for HIV and STI Surveillance. London. November 2007.
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