Communicable Disease Surveillance Centre (Northern Ireland)

HIV and STI Surveillance in Northern Ireland: 2007

(An analysis of data for the calendar year 2006)

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This report aims to provide an overview of HIV and STI epidemiology in Northern Ireland by collating and analysing information from a number of sources of routinely collected data. Building on the template of last year's report it will reflect epidemiological trends over time, but its main focus will be on data collected in 2006.

Comments on the content and format of this report would be particularly welcome and may be addressed to cdscni@hpa.org.uk

Where the number of any category of episodes in any one year is 0-4, this is reported either within a cumulative figure over years, or as an annual figure of "<5".

Summary Points

- 57 new first-UK HIV diagnoses were made in Northern Ireland during 2006, a decrease of 10% on 2005 (63)
- 322 HIV-infected residents of Northern Ireland (as defined when last seen for statutory medical HIV-related care in 2006) received HIV-related care during 2006, an increase of 15% on 2005 (281)
- 43 new diagnoses of infectious syphilis were reported in 2006, an increase of 13% on 2005 (38) (Enhanced Syphilis Surveillance System)

In Northern Ireland GUM clinics in 2006:

- New diagnoses of uncomplicated chlamydia increased by 21%; 1,979 in 2006 compared with 1,631 in 2005
- New diagnoses of uncomplicated gonorrhoea increased by 7%; 195 in 2006 compared with 182 in 2005
- New diagnoses of genital herpes simplex (first attack) increased by 15%; 274 in 2006 compared with 238 in 2005
- New diagnoses of genital warts (first attack) decreased by 7%; 2,156 in 2006 compared with 2,306 in 2005

Surveillance arrangements and sources of data

HIV

Surveillance arrangements for diagnosed HIV/AIDS infection for England, Wales and Northern Ireland are based largely on the confidential reporting of HIV infected individuals to the Health Protection Agency's Centre for Infections in London. There are two main methods:

- Data relating to individuals whose first UK diagnosis was made in Northern Ireland
- Data relating to individuals resident in Northern Ireland who accessed UK-based statutory HIV services: the Survey of Prevalent HIV Infected cases (SOPHID)

KC60 returns

The most comprehensive source of surveillance data for sexually transmitted infections in Northern Ireland is provided by the statutory KC60 return made each quarter from GUM clinics. Using the same format as in England and Wales, this records the numbers of new diagnoses for a range of STIs. Individual patients may contribute to more than one diagnosis. For selected conditions, additional age, gender and sexual orientation information is provided. Regularly updated summary statistics are presented at www.cdscni.org.uk.

There are two important limitations to KC60 data, however. Firstly, as data reflect only those diagnoses made in GUM clinics it follows that accessibility of those services to the public as measured by service capacity and the geographic location of services may influence the diagnostic rate of STIs. Thus direct comparison of different regions, or indeed of different time periods within the same region if service access should change, must be interpreted with caution.

Secondly, unlike HIV surveillance arrangements, no residence-based data are collected. Given that the majority of new diagnoses originate from the largest and most accessible clinic at the Royal Victoria Hospital at Belfast Trust, clinic location is not a useful proxy for patient residence.

Enhanced syphilis surveillance

Enhanced surveillance arrangements for infectious syphilis in Northern Ireland have been in place since the outbreak was first recognised in September 2001. Based on anonymised, confidential reporting by GUM clinicians to CDSC (NI), a range of demographic, clinical and risk factor data are collected.

Routine laboratory reporting

Routine laboratory reporting is currently being established for selected STIs. Data for 2006 is reported for Chlamydia infections.

1: Diagnoses provided in GUM clinics in Northern Ireland in 2006

During 2006:

- 7,107 ***New STI diagnoses*** were made compared with 7,035 in 2005
- 2,486 ***Other STI diagnoses*** were made
- There were 3,108 ***Other diagnoses made at GUM clinics***

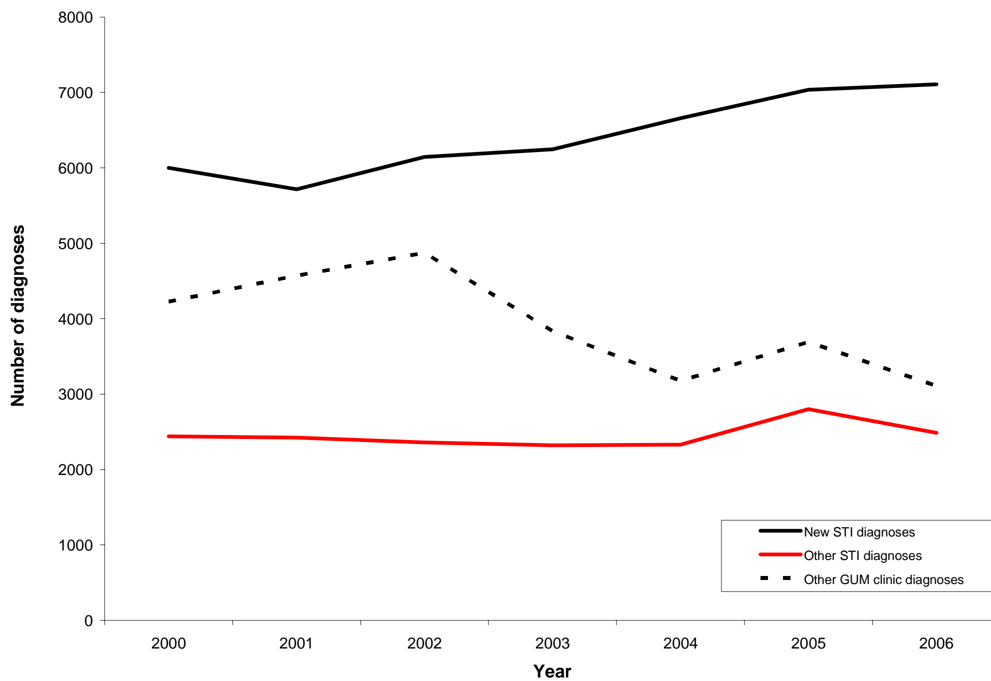
New STI diagnoses
Chlamydial infection (uncomplicated and complicated) Gonorrhoea (uncomplicated and complicated) Infectious syphilis Genital herpes simplex (first attack) Genital warts (first attack) New HIV diagnosis Non-specific genital infection (uncomplicated and complicated) Chancroid/lymphogranuloma venereum (LGV)/Donovanosis Molluscum contagiosum Trichomoniasis Scabies Pediculus pubis
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

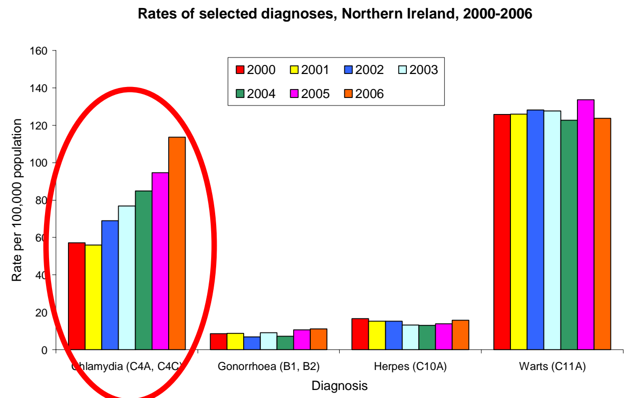
Trends: 2000-2006

The number of *new STI diagnoses* increased by 18% from 2000-2006. The total number of diagnoses (which includes recurrent and follow up presentations) increased by 8% during this time.

Specific disease trends will be examined in subsequent chapters.

Figure1.1: Trends in diagnoses made in GUM clinics in Northern Ireland, 2000-2006





2: Chlamydia

Genital chlamydia is a bacterial infection caused by *Chlamydia trachomatis*. The infection is asymptomatic in at least 50% of men and 70% of women. In women, untreated infection can cause chronic pelvic pain and lead to pelvic inflammatory disease (PID), ectopic pregnancy and infertility. An infected pregnant woman may also pass the infection to her baby during delivery. Complications in men include urethritis, epididymitis and Reiter's Syndrome.

As elsewhere in the UK, chlamydia is the most common bacterial STI diagnosed in GUM in Northern Ireland. While diagnostic rates are lower than other parts of the UK there has been a similar rate of increase here from 2000 to 2006.

During 2006:

Chlamydial infection accounted for 29% (2,053/7,107) of all *new STI diagnoses* made in Northern Ireland GUM clinics.

Uncomplicated chlamydial infection:

- There were 1,979 new episodes of uncomplicated chlamydial infection diagnosed at GUM clinics in Northern Ireland, compared to 1,631 in 2005
- 993 (50%) of these were diagnosed in males
- The highest rates of infection in both males and females were diagnosed in the 20-24 years age group, accounting for 45% of male diagnoses and 46% of female diagnoses
- The rate of diagnoses in the 16-19 years age group is 2.7 times higher in females than males
- 6% (63/993) of the total male diagnoses occurred in men who have sex with men (MSM)

Complicated chlamydial infection:

- There were 74 new episodes of complicated chlamydial infection diagnosed at GUM clinics in Northern Ireland
- 60 (81%) of these were diagnosed in females

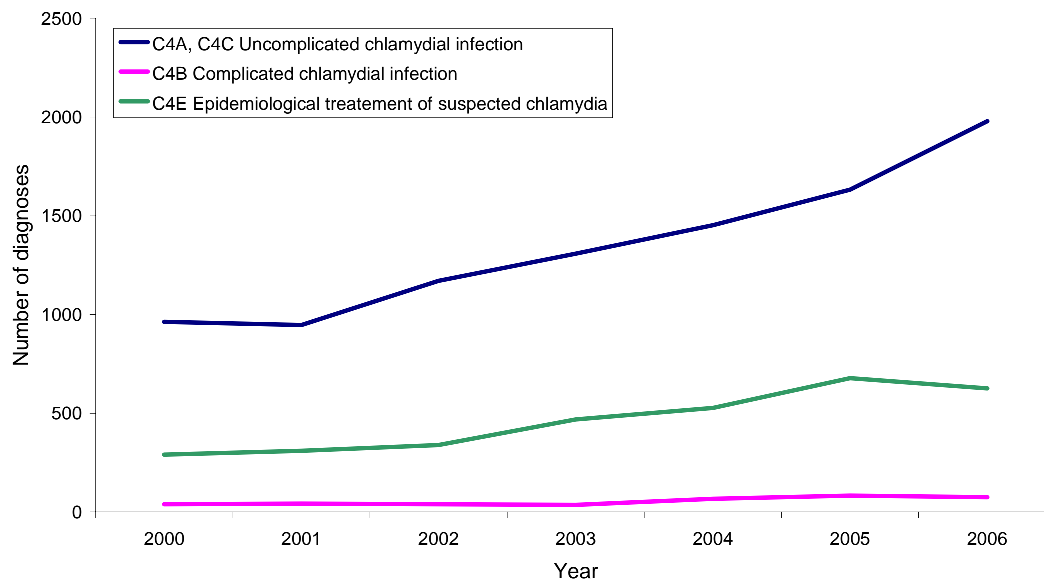
Laboratory diagnoses:

2,776 chlamydia diagnoses, 42% in males, were identified from laboratory reports. Where referring source and gender were known, 46% of reports for females came from General Practice compared with 10% for males.

Trends: 2000-2006

Between 2000 and 2006, diagnoses of uncomplicated chlamydial infection have increased by 106%, from 963 diagnoses in 2000 to 1,979 in 2006. Diagnoses in males have increased by 107% while in females there has been a 104% increase. Diagnoses of complicated chlamydial infection have remained relatively low (Figure 2.1).

Figure 2.1: Diagnoses of chlamydia, Northern Ireland, 2000-2006



Age/Gender/UK country of diagnosis trends: uncomplicated chlamydia

From 2000-2006 diagnostic rates in females have been consistently highest in the 16-24 years age groups, peaking between 20 and 24 years. In males, the highest rates are in the 20-34 years age groups, again peaking between 20 and 24 years. Diagnostic rates in those under 25 years of age have been consistently higher in females, with rates in those 25 years or older consistently higher in males (Figure 2.2). Diagnostic rates among females fall after 24 years due to changes in sexual behaviour as well as decreased susceptibility.

Diagnoses in those <16 years of age accounted for 0.7% (69/9,451) of all diagnoses of uncomplicated chlamydia made during 2000-2006.

Diagnoses in the 45+ age group accounted for 1.5% (143/9,451) of the total diagnoses made during 2000-2006.

The proportion of total male diagnoses attributed to MSM has increased from 2% in 2000 to 6% in 2006.

Figure 2.2: Rates of uncomplicated chlamydial infection by gender and age group, Northern Ireland, 2000-2006

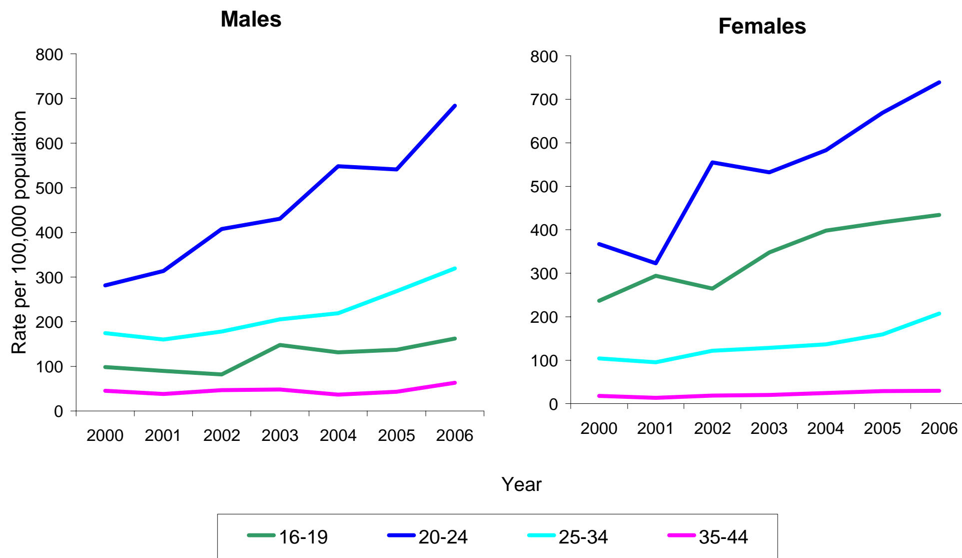
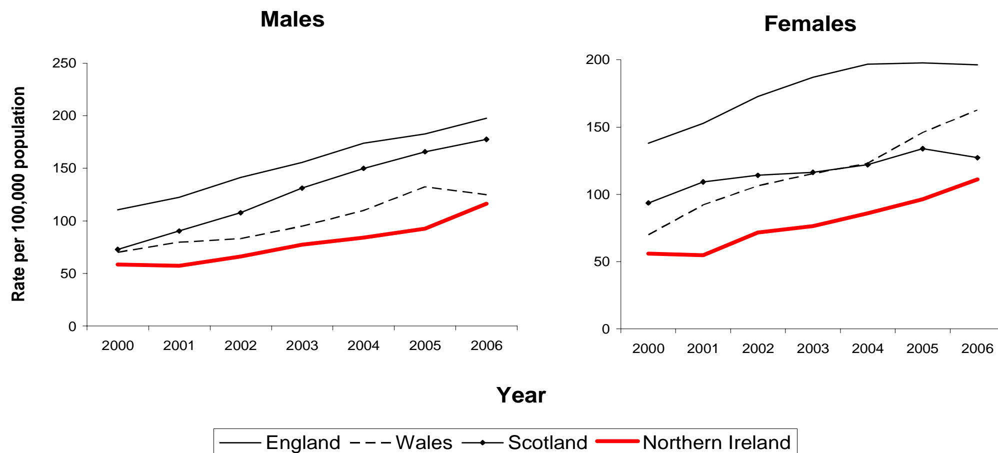
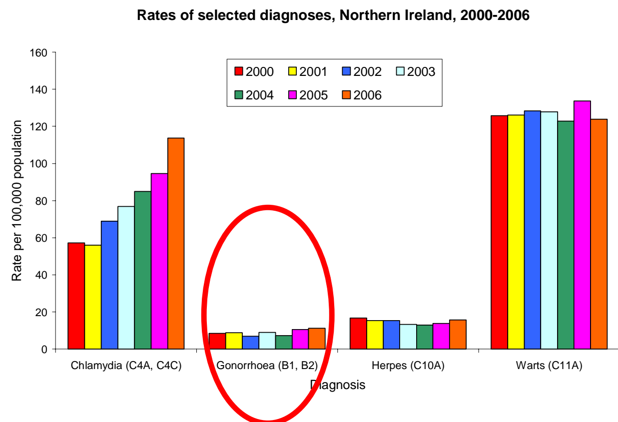


Figure 2.3: Rates of uncomplicated chlamydial infection by gender and country, 2000-2006



Diagnostic rates of uncomplicated chlamydial infection are increasing throughout the United Kingdom. This may be partly due to increasing public and professional awareness and the use of more sensitive testing. While rates in Northern Ireland are lower than elsewhere in the UK they are increasing at a similar rate (Figure 2.3).



3: Gonorrhoea

Gonorrhoea is a bacterial STI caused by *Neisseria gonorrhoeae.* Untreated, gonorrhoea can enter the blood stream or spread to the joints, and in women can cause pelvic inflammatory disease, ectopic pregnancy and infertility. An infected pregnant woman may pass the infection to her baby during delivery.

Diagnostic rates in Northern Ireland remain the lowest in the UK.

During 2006:

Gonorrhoea accounted for 3% (198/7,107) of all *new STI diagnoses* made in Northern Ireland GUM clinics.

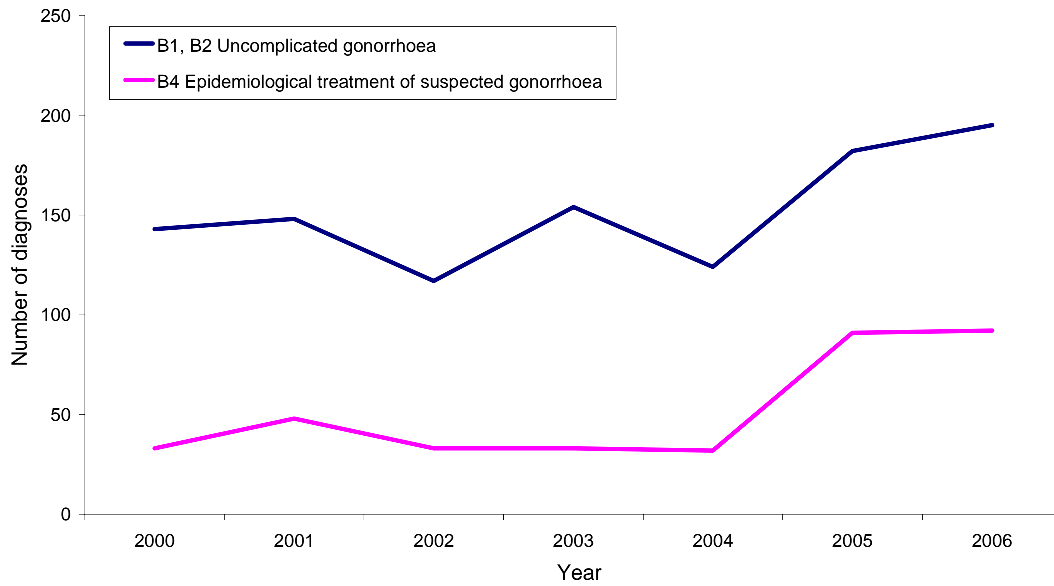
Uncomplicated gonococcal infection:

- There were 195 new episodes of uncomplicated gonorrhoea diagnosed at GUM clinics in Northern Ireland compared with 182 in 2005, an increase of 7%
- 163 (84%) of these were diagnosed in males
- The highest rates of infection in both males and females were diagnosed in the 20-24 years age group
- However, the rate of infection in 20-24 year old males is over 3 times higher than in 20-24 year old females
- 53% of female diagnoses were in the 20-24 years age group
- In males, the proportion of diagnoses was more evenly distributed throughout the age groups – 42% were 16-24 years, 34% were 25-34 years and 18% were 35-44 years
- 24% (39/163) of the total male diagnoses were attributed to MSM

Trends: 2000-2006

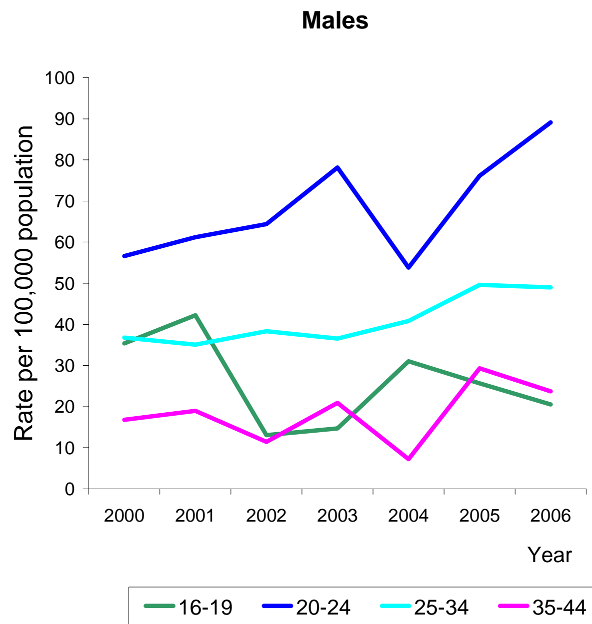
Although numbers have been variable, diagnoses of uncomplicated gonorrhoea have shown a generally increased trend since 2000 (Figure 3.1). During this time the proportion of the total male diagnoses attributed to MSM has ranged from 9% in 2000 to 40% in 2005. There are less than five diagnoses of complicated gonorrhoea annually.

Figure 3.1: Diagnoses of gonorrhoea, Northern Ireland, 2000-2006



Age/Gender/UK country of diagnosis trends: uncomplicated gonorrhoea

Figure 3.2: Rates of diagnosis of uncomplicated gonorrhoea by gender and age group, Northern Ireland, for 2000-2006



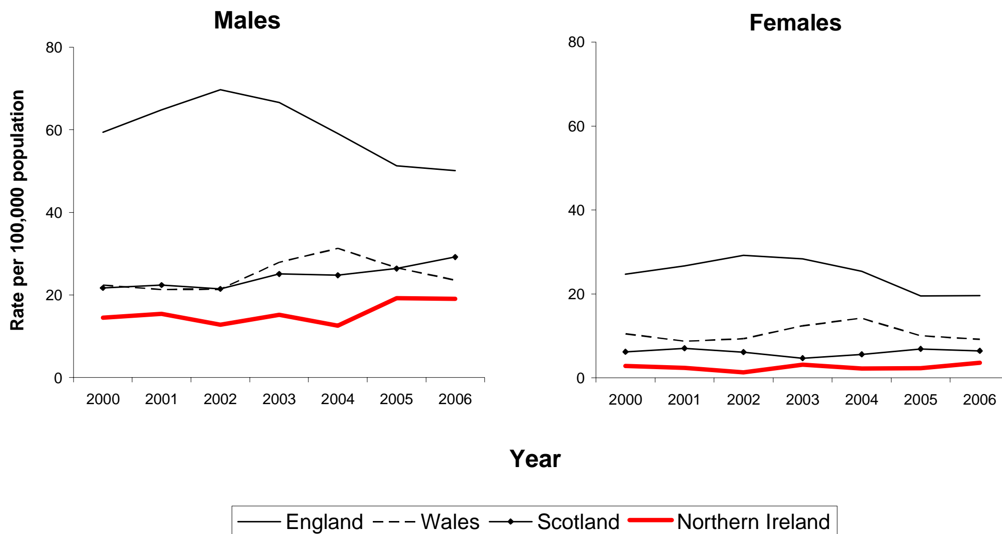
In males, the highest diagnostic rates are in the 20-34 years age groups, peaking between 20 and 24 years. (Figure 3.2).

<5 diagnoses were made in males <16 years old during 2000-2006.

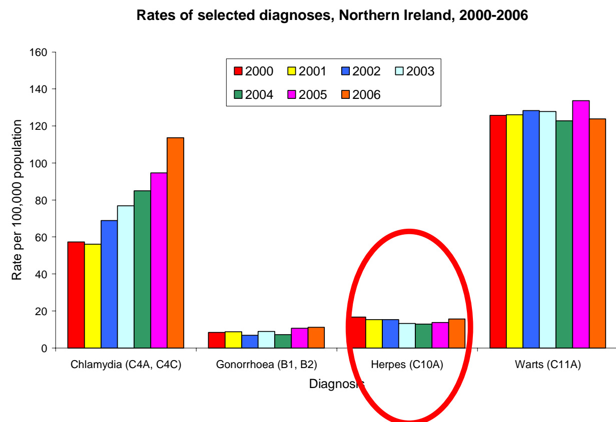
Diagnoses in males aged 45+ accounted for 4.2% (38/909) of all male diagnoses during this time.

There is no clear trend in females due to the small numbers involved.

Figure 3.3: Rates of uncomplicated gonococcal infection by gender and country, 2000-2006



Between 2000 and 2006 diagnostic rates of gonorrhoea in Northern Ireland have consistently been the lowest of all UK countries for both males and females (Figure 3.3).



4: Genital Herpes

Genital herpes is caused by the herpes simplex virus (HSV) of which there are two distinct subtypes. Type 2 is almost exclusively associated with genital infection. While historically, HSV1 was mainly associated with oral infection the proportion of genital HSV attributed to HSV1 in the UK is increasing. Genital HSV infection may facilitate HIV transmission, can cause severe systemic disease in those with impaired immunity, and can be potentially fatal to neonates.

Diagnostic rates of genital herpes in Northern Ireland are the lowest of all the UK countries.

During 2006:

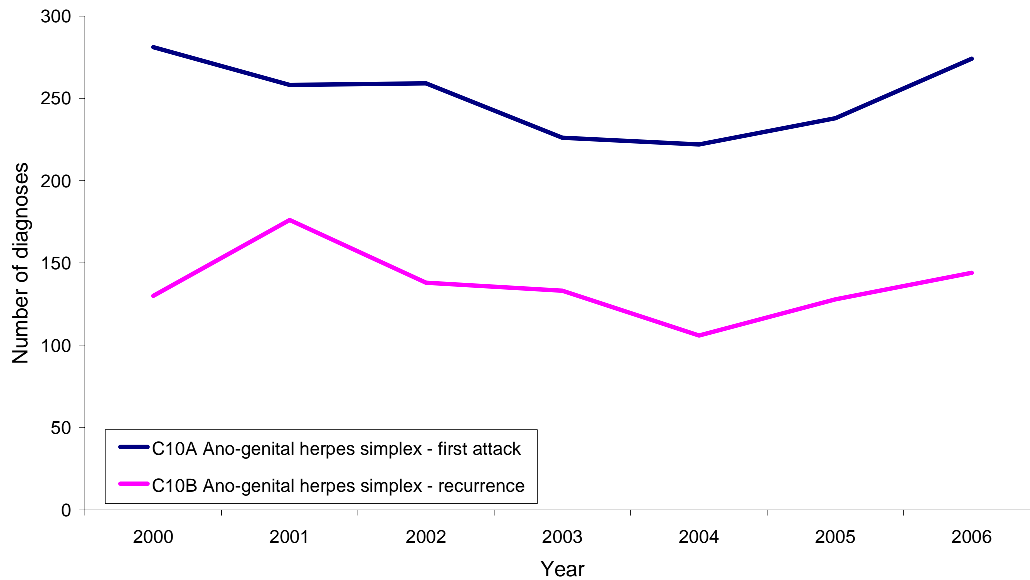
Genital herpes (first episodes) accounted for 4% (274/7,107) of all *new STI diagnoses* made in Northern Ireland GUM clinics.

- There were 418 episodes (first infections and recurrent infections) of genital herpes diagnosed at GUM clinics in Northern Ireland in 2006 compared with 366 in 2005, an increase of 14%
- 268 (64%) of these were diagnosed in females
- 274 (66%) of the total attendances for herpes in 2006 were for treatment of first infections and 144 (34%) were for treatment of recurrent infection
- 39% of the male diagnoses (59/150) were recurrent infections compared with 32% (85/268) of the female diagnoses
- The highest rates of first infections in females were diagnosed in the 20-24 years age group (97/100,000 population) and in males were in the 25-34 age group (34/100,000 population)
- Diagnostic rates of first infections in all age groups were higher in females, and in particular the rate in 16-19 year old females was five times higher than in males in the same age group, and more than three times higher in females in the 20-24 years age group than males aged 20-24 years
- <5 diagnoses were made in MSM

Trends: 2000-2006

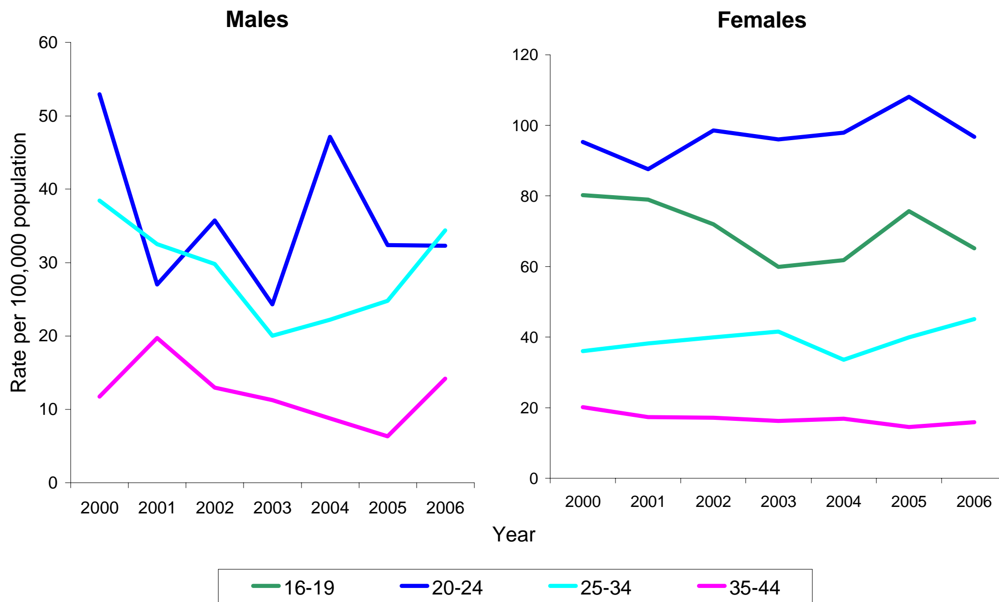
First diagnoses of genital herpes between 2000 and 2006 show no clear trend with numbers ranging from 222 in 2004 to 281 in 2000. Although 2006 shows an increase for the second successive year, numbers remain below the 2000 figure (Figure 4.1).

Figure 4.1: Diagnoses of genital herpes, Northern Ireland, 2000-2006



Age/Gender/UK country of diagnosis trends: genital herpes (first attack)

Figure 4.2: Diagnoses of genital herpes (1st attack) by age and gender, Northern Ireland, 2000-2006

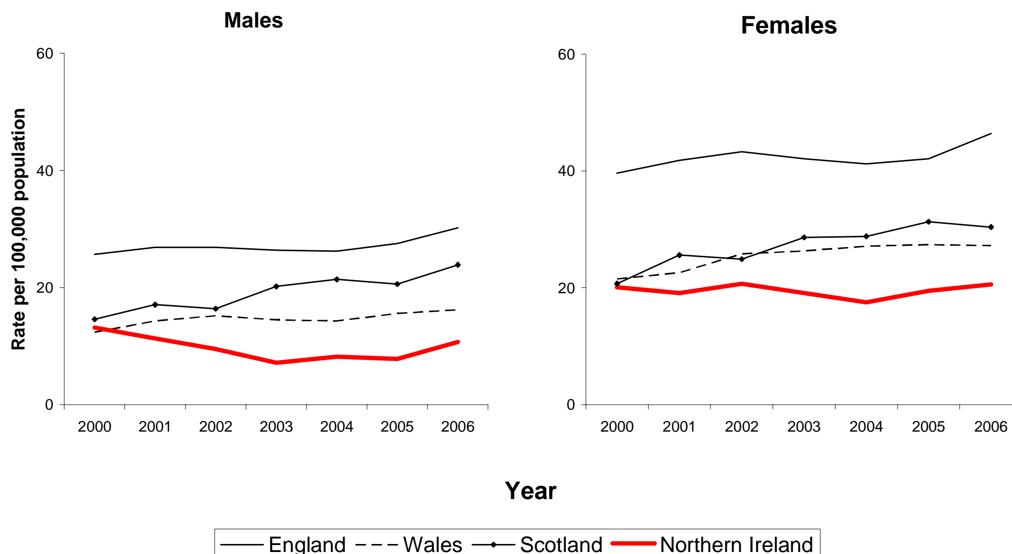


Diagnostic rates in females have been highest in the 16-24 years age groups, peaking between 20 and 24 years. In males, the highest rates are in the 20-34 years age groups (Figure 4.2).

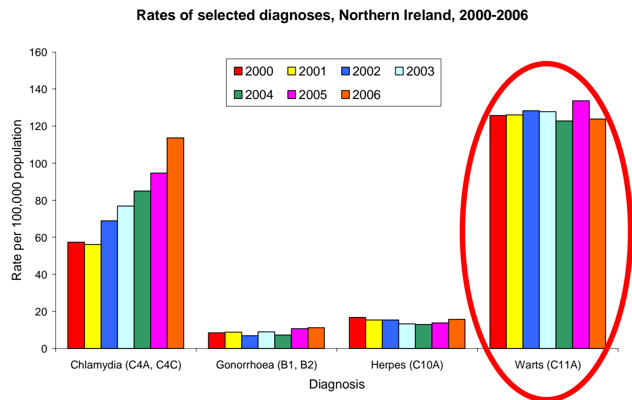
Diagnoses in males <20 years account for 6.5% (37/566) of all male diagnoses of genital herpes (first attack) made during 2000-2006, with diagnoses in the 45+ age group accounting for 7.2% (41/566).

Diagnoses in females aged <16 years account for 1.3% (15/1,192) of female diagnoses made during 2000-2006, with diagnoses in the 45+ age group accounting for 5% (60/1,192).

Figure 4.3: Rates of genital herpes (1st attack) by gender and country, 2000-2006



Diagnostic rates of infection are lower for both males and females in Northern Ireland compared with those of the other UK countries (Figure 4.3).



5: Genital warts

Genital warts are caused by human papillomavirus (HPV). More than 90 HPV types have been identified of which approximately one third are sexually acquired. Although around 20 different types of HPV have been linked to cervical cancer, these particular types are less frequently linked to genital warts.

Diagnostic rates for first episodes of genital warts in Northern Ireland are more similar to those in the rest of the UK than for the other selected STIs reviewed in this report.

During 2006:

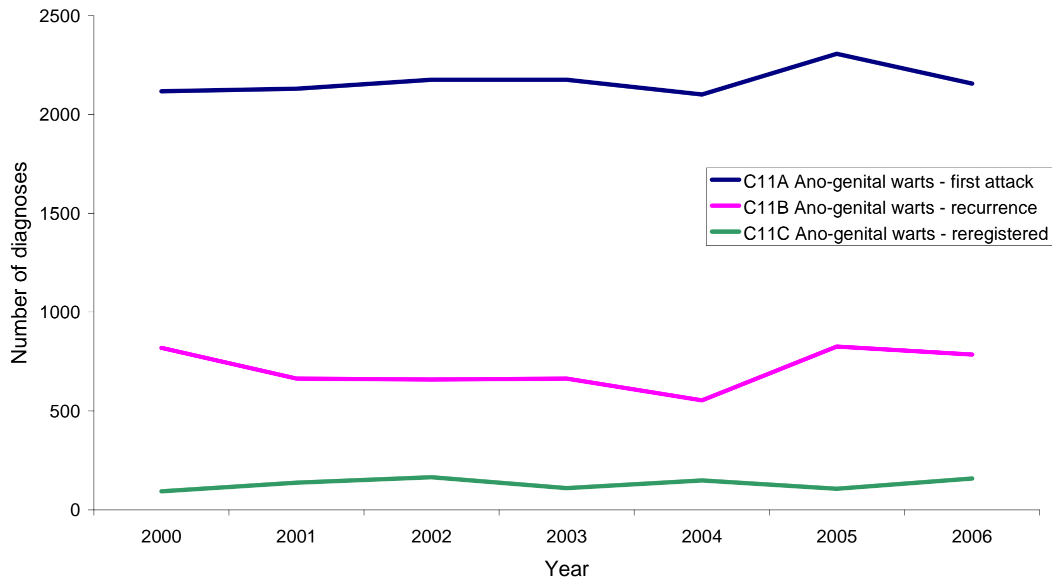
Genital warts (first episodes) accounted for 30% (2,156/7,107) of all *new STI diagnoses* made in Northern Ireland GUM clinics.

- There were 2,941 episodes (first infections and recurrent infections) of genital warts diagnosed at GUM clinics in Northern Ireland in 2006 compared with 3,131 in 2005, a decrease of 6%
- 1,585 (54%) of these were diagnosed in males
- 2,156 (73%) of the total attendances for genital warts in 2006 were for treatment of first infections and 785 (27%) were for treatment of recurrent infection
- 28% of the male diagnoses (443/1,585) were recurrent infections compared with 25% (342/1,356) of the female diagnoses
- The highest diagnostic rates of first infections in both men and women were diagnosed in the 20-24 years age group
- 39% of male diagnoses and 35% of female diagnoses for first infections were in the 20-24 years age group
- The diagnostic rate in females aged 16–19 years (533/100,000) was more than twice that of males of the same age. However, rates in those aged over 19 years were higher in males
- 2% (29/1,585) of the total male diagnoses occurred in MSM

Trends: 2000-2006

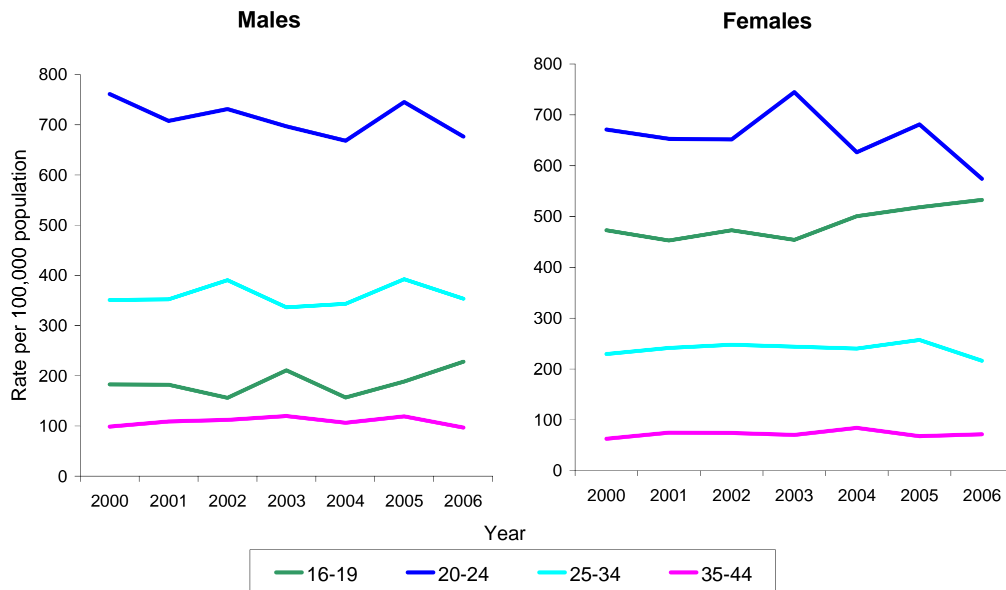
Diagnoses of initial infections of genital warts have shown little variation since 2000, increasing by just 2% since 2,117 episodes were recorded in 2000 (Figure 5.1). Diagnostic rates tend to be higher overall in males.

Figure 5.1: Diagnoses of genital warts, Northern Ireland, 2000-2006



Age/Gender/UK country of diagnosis trends: genital warts (first attack)

Figure 5.2: Diagnoses of genital warts (1st attack) by age and gender, Northern Ireland, 2000-2006



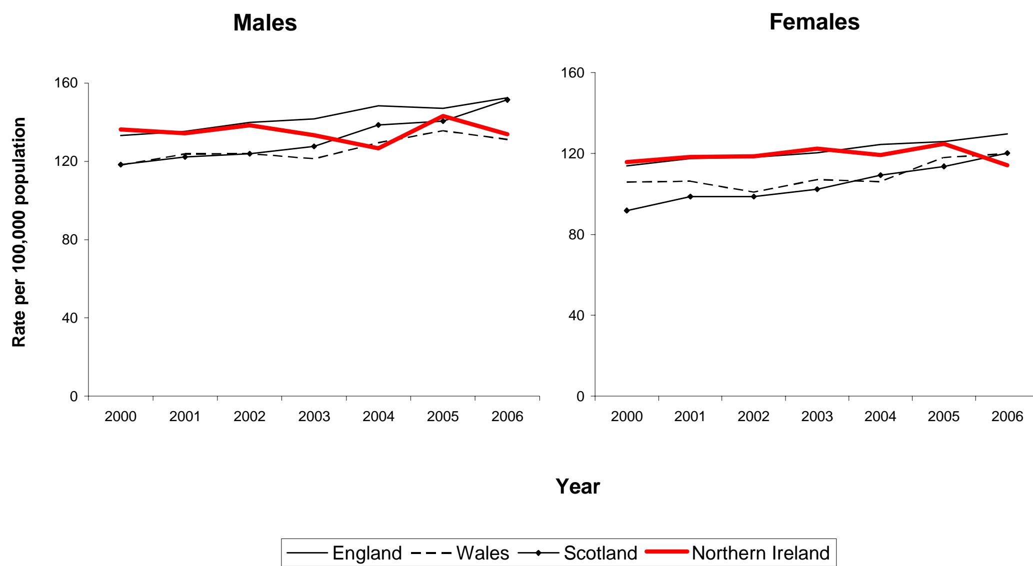
Diagnostic rates in females have been highest in the 16-24 years age groups, peaking between 20 and 24 years. In males, the highest rates are in the 20-34 years age groups, also peaking between 20 and 24 years. Rates in those under 20 years have been consistently higher in females than males whereas rates in age groups greater than 20 years have been higher in males (Figure 5.2).

Diagnoses in those <16 years of age accounted for 0.4% (62/15,162) of all diagnoses of genital warts (first attack) made during 2000-2006.

Diagnoses in the 45+ age group accounted for 4.1% (623/15,162) of the total diagnoses made during 2000-2006.

The proportion of total male diagnoses attributed to MSM has remained stable at 2-3% since 2000.

Figure 5.3: Rates of genital warts (1st attack) by gender and country, 2000-2006



Diagnostic rates in both males and females in Northern Ireland are similar to those in the rest of the UK (Figure 5.3).

6: Syphilis

Syphilis is a bacterial infection caused by the spirochete *Treponema pallidum*. Its importance lies in its ability to promote both the acquisition and transmission of HIV, and in the potential for serious or even fatal consequences of syphilis itself for the infected individual if left untreated. Late syphilis can cause complications of the cardiovascular, central nervous and mucocutaneous systems. Infectious syphilis in pregnant women can cause miscarriage, stillbirth or congenital infection.

Northern Ireland has, in common with elsewhere in UK and Europe, experienced a marked increase in infectious syphilis since 2000. In the preceding decade, on average only one case of infectious syphilis per year was reported.

During 2006:

- 43 new episodes representing 43 individuals were diagnosed
- 8 presented as primary syphilis, 6 as secondary and 18 as early latent syphilis. For 11 episodes the stage of illness was not known
- 58% (25/43) episodes were diagnosed in MSM
- 42 episodes occurred in residents of Northern Ireland and in 21 episodes syphilis was likely to have been acquired through exposure within Northern Ireland
- Diagnosed co-infections included chlamydia, non-specific urethritis, hepatitis B, hepatitis C and warts.
- 53% (23/43) reported one sexual partner in the three months preceding diagnosis. The highest number of sexual partners reported in this time was 30.

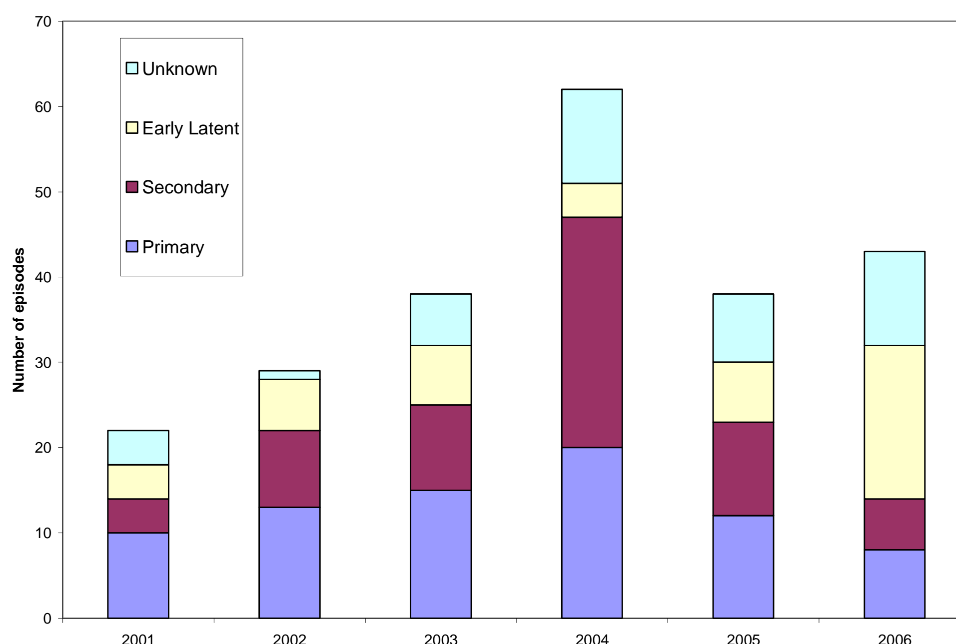
Trend information

During 2006, 43 episodes were diagnosed representing a 13% increase on the 2005 figure (38). The outbreak continues to involve predominantly MSM accounting for 71% (164/232) of diagnoses to end 2006. Episodes in heterosexual males and females have accounted for between 14% and 42% of annual totals. 57% of heterosexually acquired episodes have been in males.

Cumulative data show the highest number of episodes in heterosexual females in the 25-34 year age group (62%:18/29); and in MSM the 25-44 years age group (67%:108/162). Diagnoses were more evenly spread across age bands in heterosexual males with those aged 25+ accounting for 86% (32/37) of diagnoses in this category.

From 2001-2005 there was little variation in the stage of disease at which diagnosis was made, with primary and secondary stages accounting for 76% (145/91) of episodes for which this information is available. During 2006, however, this fell to 44%. While interpretation is difficult given the increase in the number of episodes for which stage of illness could not be assigned, this may suggest a decline in the awareness of the signs or symptoms of primary and secondary syphilis (Figure 6.1).

Figure 6.1: Stage of disease by year of diagnosis



While initial episodes were linked to an outbreak among MSM in Dublin, the majority of episodes in both MSM and heterosexuals have been acquired in Northern Ireland (Table 6.1).

Table 6.1: Location of acquisition of syphilis infection diagnosed in Northern Ireland 2001-2006

Year	Dublin	Northern Ireland	Elsewhere in the UK	Outside UK/ROI	ROI (excluding Dublin)
2001	9	<5	<5	<5	<5
2002	<5	18	<5	<5	<5
2003	<5	23	<5	<5	<5
2004	<5	43	7	<5	<5
2005	<5	24	<5	5	<5
2006	<5	21	5	11	<5

Mathematical modelling of the transmission of sexually transmitted infections has shown how those individuals with high rates of partner change play a disproportionately large role in the spread of infection. Cumulative data from 2001-2006 show that the majority of cases reported between none to two partners (70%:160/229) in the three months prior to diagnosis. It is noteworthy, however, that 4% (9/229) reported 20 or more partners during this period.

7: HIV

HIV/AIDS is a viral infection caused by type 1 and type 2 HIV retroviruses. Modes of transmission include sexual contact, the sharing of HIV contaminated needles and syringes, and transmission from mother to child before, during or shortly after birth. Although the risk of HIV transmission through sexual contact is lower than for most other sexually transmitted agents, this is increased in the presence of another sexually transmitted illness, particularly where ulcerative. Early treatment of the disease with highly active antiretroviral therapy (HAART) has made major advances in survival rates.

While prevalence in Northern Ireland remains lower than the other UK countries, annual new diagnoses have increased year on year since 2001, almost doubling between 2003 and 2004. 2006 sees a slight decrease from the 2005 level. The key routes of transmission remain sexual contact between men who have sex with men (MSM) and sexual contact between men and women.

During 2006:

- 57 new first – UK cases of HIV were diagnosed in Northern Ireland
- 53% of diagnoses were acquired through sex between men and women
- 322 HIV-infected residents of Northern Ireland (as defined when last seen for statutory medical HIV-related care in 2006) received care
- Of those receiving care, 49% (157/322) acquired their infection through sexual contact between MSM and 47% (151/322) through heterosexual contact

Trend Information

The annual number of new first-UK diagnoses made in Northern Ireland fell by 10% from 63 in 2005 to 57 in 2006. This is the first annual decline since figures began to increase after 2001 (Table 7.1). The annual numbers of new AIDS diagnoses and deaths continue to remain low, due largely to the influence of HAART.

Table 7.1: HIV and AIDS cases by year of diagnosis and deaths in HIV-infected individuals by year of death, Northern Ireland

Year	HIV diagnoses	AIDS diagnoses	Deaths
1991 or earlier	96	31	27
1992	12	8	5
1993	12	9	<5
1994	15	12	7
1995	12	13	8
1996	17	<5	9
1997	9	<5	<5
1998	9	<5	<5
1999	15	7	<5
2000	19	6	<5
2001	19	8	<5
2002	27	7	5
2003	32	<5	<5
2004	62	<5	<5
2005	63	7	<5
2006	57	<5	<5
Total	476	120	75

Analysis of trends of the probable route of exposure is complicated by the small number of cases in each category and the potential for year to year variation. Sex between men and sex between men and women remain the most significant categories of probable route of infection, accounting for 91% (434/476) of new diagnoses to date (Table 7.2). Heterosexual transmission has assumed increasing importance since 2002 and now accounts for 41% (195/476) of new diagnoses made to date. Forty seven per cent (92/195) in this category are in men. Cumulative data show that for cases acquired through heterosexual exposure, and where location of exposure is known, the majority have been infected through exposure outside the UK (72%:136/188). The numbers in the other exposure categories remain low.

Table 7.2: HIV infected individuals by year of diagnosis and probable route of infection, Northern Ireland

Year of diagnosis	Sex between men	Sex between men and women
1991 or earlier	54	17
1992	8	<5
1993	6	5
1994	12	<5
1995	7	<5
1996	13	<5
1997	6	<5
1998	6	<5
1999	7	7
2000	6	9
2001	11	7
2002	15	11
2003	7	24
2004	33	27
2005	22	39
2006	26	30
Total	239	195

Cumulative data to 2006 show:

- 10 cases acquired due to injecting drug use
- 5 cases acquired due to mother to infant transmission
- 27 cases acquired due to other/undetermined causes

The numbers of HIV-infected residents of Northern Ireland (as defined when last seen for care in 2006) receiving care have increased to 322 in 2006, compared with 143 in 2002. This reflects both the continued increase in new diagnoses being made, and the role of HAART in increasing survival of those infected with HIV.

8: Summary and Conclusions

Analysis of the data in this report shows that while the diagnostic rates of the majority of STIs remain lower than elsewhere in the UK, 2006 has seen an increase in diagnoses of chlamydia, gonorrhoea, infectious syphilis and genital herpes. Rates are generally highest in the 20-24 year old age groups, with MSM being particularly vulnerable to gonorrhoea and infectious syphilis.

While the number of diagnoses of HIV has fallen slightly during 2006, this still represents a near doubling of the 2003 level. Once again, the most common likely routes of infection have been through sex between men, and sex between men and women. The number of Northern Ireland residents receiving HIV-related care continues to increase.

This report is intended to help inform activities in the control of STIs in Northern Ireland. As such, policy makers and service commissioners will need to consider actions in the areas of promoting positive sexual health and ensuring appropriate and adequate access to a range of sexual health services, including specialised GUM services.

Further interpretation of the data in this report would be greatly facilitated by a survey of sexual attitudes and lifestyles of the Northern Ireland population.