



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive



HPSC

SEXUALLY TRANSMITTED INFECTIONS IN IRELAND, 2011

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Acknowledgements

The Health Protection Surveillance Centre (HPSC) would like to thank all those who provided data for this report, particularly the STI clinics, and the infectious disease surveillance staff within the departments of public health, the laboratories and GP clinics.

Key Points

- There were 13,259 notifications of STIs in 2011, an increase of 12.2% when compared with 2010 and continuing an upward trend since 1995
- The impact of poor sexual health is occurring in young adults, with more than half (59.3%) of notifications among those aged 20 to 29 years
- In line with previous years, *Chlamydia trachomatis* was the most frequently notified STI, accounting for 48.3% of notifications in 2011
- The number of notifications of gonorrhoea continued to increase (+33.4%) in 2011; the crude incidence rate now stands at 18.2 per 100,000 population, the highest rate ever recorded
- A total of 653 cases of syphilis were notified in 2011, including 171 cases of early syphilis and one case of probable congenital syphilis
- There is considerable geographic variation in the distribution of early syphilis, with rates in the HSE East area higher than elsewhere in the country. The majority of early syphilis is acquired in Ireland
- 18.7% of early syphilis cases are HIV positive, and 79.5% are men who have sex with men (MSM). The proportion of re-infections among MSM (15.4%) is higher than among heterosexuals.
- The notification rate for herpes simplex (genital) continues to rise; The increase in notifications may be due to improved detection as a result of the introduction of molecular testing which is more sensitive than viral culture
- There is a need to develop surveillance of STIs further, and introduce case based reporting of STI

Introduction

Sexually transmitted infections (STIs) are an important public health problem and can give rise to illness, infertility and death. Early detection and treatment of STIs is important in order to protect the health of the population. The Health Protection Surveillance Centre (HPSC) is responsible for the ongoing, systematic collection, collation and analysis of data relating to trends in the notification of STIs in Ireland. This report is a summary of the key findings from the 2011 STI data returns.

Methods

Information on STI was reported on a quarterly basis in aggregate format for 2011, with the exception of syphilis, for which case based reporting was introduced in May 2011. Details of the data collection methods are provided in Appendix A. Data on HIV and Hepatitis B are not reported here but further information on these diseases is available on the HPSC website (www.hpsc.ie).

General Trends

There were 13,259 notifications of STIs in 2011, an increase of 12.2% when compared with 2010 (table 1). There were large increase in some STIs between 2010 and 2011, most notably gonorrhoea (+33.4%) and herpes simplex (genital) (+39.8%).

Table 1. Number of notifications and percentage change, 2010-2011

Sexually transmitted infection	2010	2011	% change
Ano-genital warts	2556	2459	-3.8
Chancroid	0	0	-
<i>Chlamydia trachomatis</i> infection	5399	6407	+18.7
Gonorrhoea	625	834	+33.4
Granuloma inguinale	0	0	-
Herpes simplex (genital)	877	1226	+39.8
Lymphogranuloma venereum	3	2	-33.3
Non-specific urethritis	1657	1603	-3.3
Syphilis	614	653	+6.4
Trichomoniasis	84	75	-10.7
Total	11815	13259	+12.2

During 2011, the crude incidence rate (CIR) for all STI notifications was 289.0 per 100,000 population. CIR by HSE area is provided in appendix C; rates in the HSE East (472.4/100,000) and HSE Mid West (397.3/100,000) were higher than the national rate. However, this is likely to be a reflection of the areas in which STIs services are located as well as differences in reporting practices by clinics, clinicians and laboratories from one area to another.

The number of notifications was greater among men than women for syphilis (75.2%), gonorrhoea (77.9%), and ano-genital warts (55.4%). However, trichomoniasis, herpes simplex and *C. trachomatis* infection were reported more frequently among women than men (96.0%, 64.8% and 53.8% respectively).

More than half (59.3%) of all STI notifications in 2011 were among those aged 20 to 29 years, accounting for the majority of notifications for each STI, except trichomoniasis. A quarter of early syphilis cases were in people aged 25-29 years (n=42; 24.6%).

Figure 1. Number of notifications by age group and crude incidence rate per 100,000 population of all sexually transmitted infections by year, 1995-2011

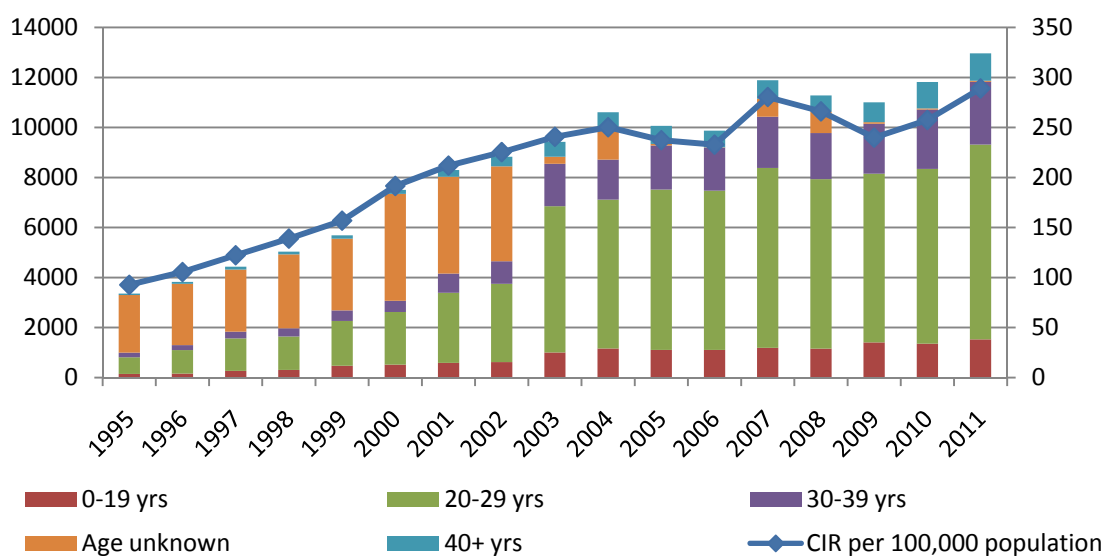


Figure 2. Crude incidence rate per 100,000 population of sexually transmitted infections (>1,000 notifications per year) by year, 1995-2011

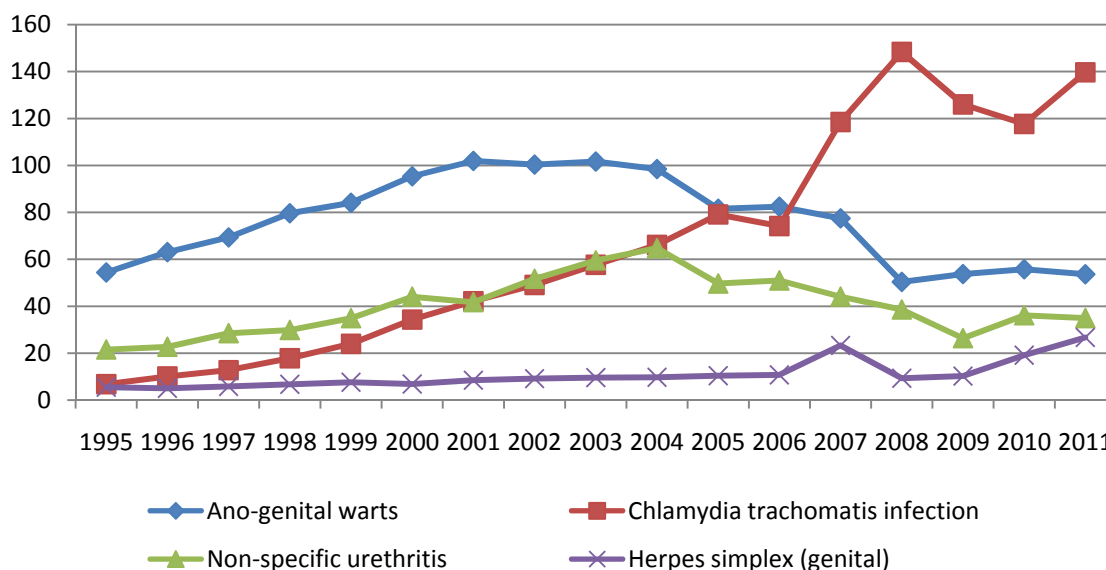
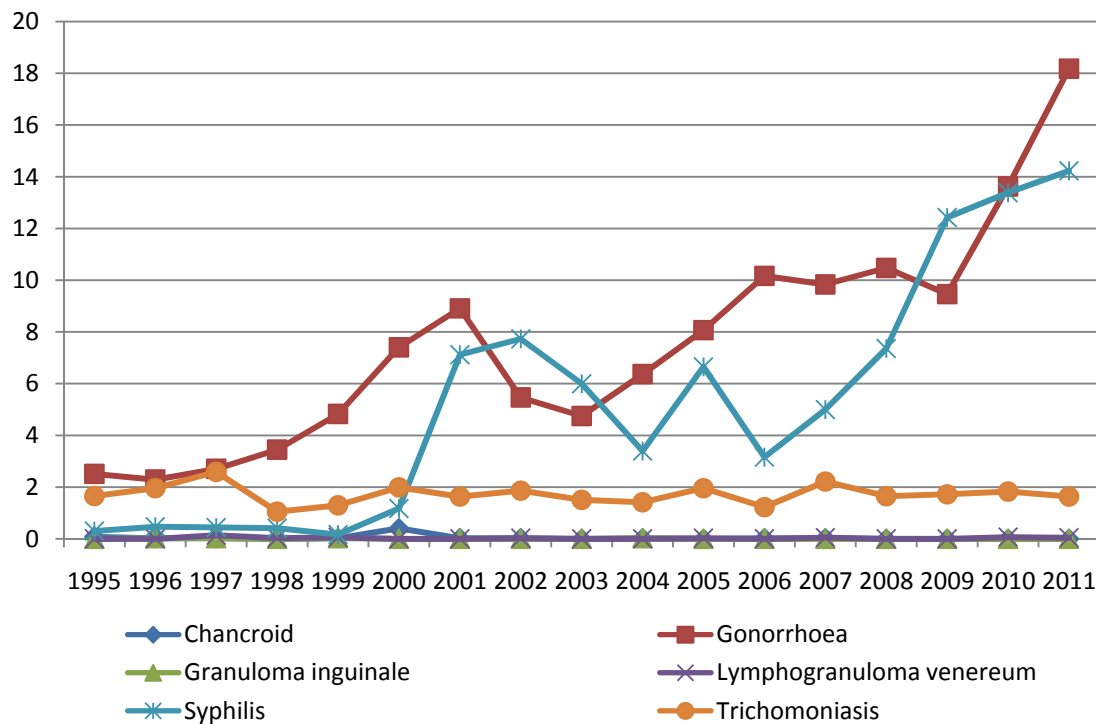


Figure 3. Crude incidence rate per 100,000 population of sexually transmitted infections (<1,000 notifications per year) by year, 1995-2011



Note: Throughout this report crude incidence rate has been calculated using data from Census 1996 (1995-1999), Census 2002 (2000-2003), Census 2006 (2004-2008) and Census 2011 (2009-2011)

Chlamydia trachomatis infection

In line with previous years, *Chlamydia trachomatis* was the most frequently notified STI, accounting for 48.3% of notifications in 2011. Following decreases in the CIR for Chlamydia in 2009 and 2010, the CIR increased in 2011 to 139.6 per 100,000 population; this rate is still lower than the peak CIR of 148.4/100,000 recorded in 2008 (figure 4).

Chlamydia was more frequently reported among women (53.8%) than men (43.1%), continuing the trend seen in previous years.

Chlamydia is most frequently reported in those aged 20-29 years (65.1%); there has been a slight increase in notifications in those aged 30 years and older since 2009.

Figure 4. Percentage of *Chlamydia trachomatis* notifications by gender and crude incidence rate per 100,000 population, 1995-2011

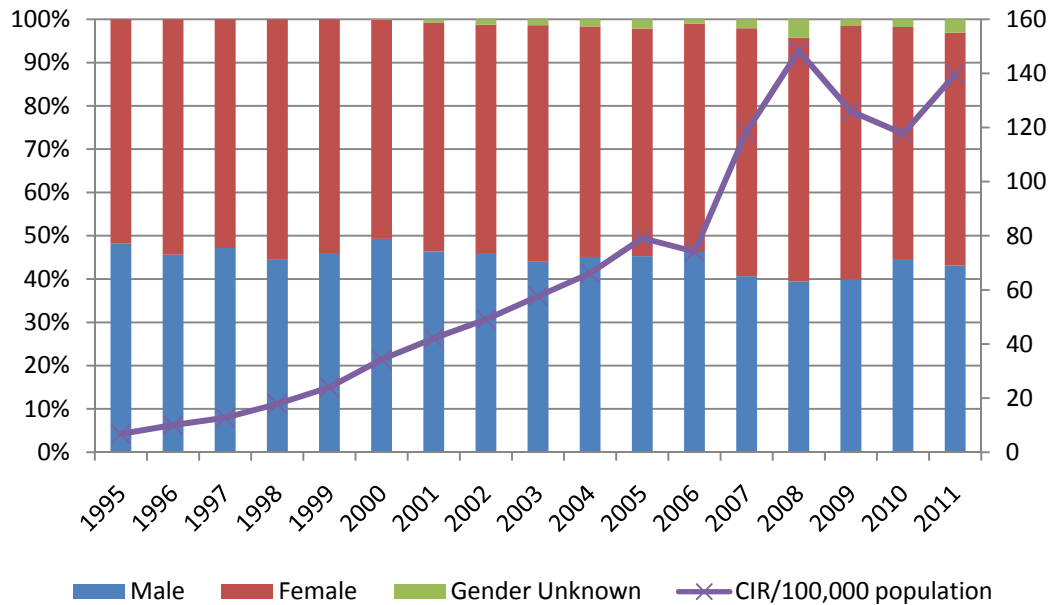
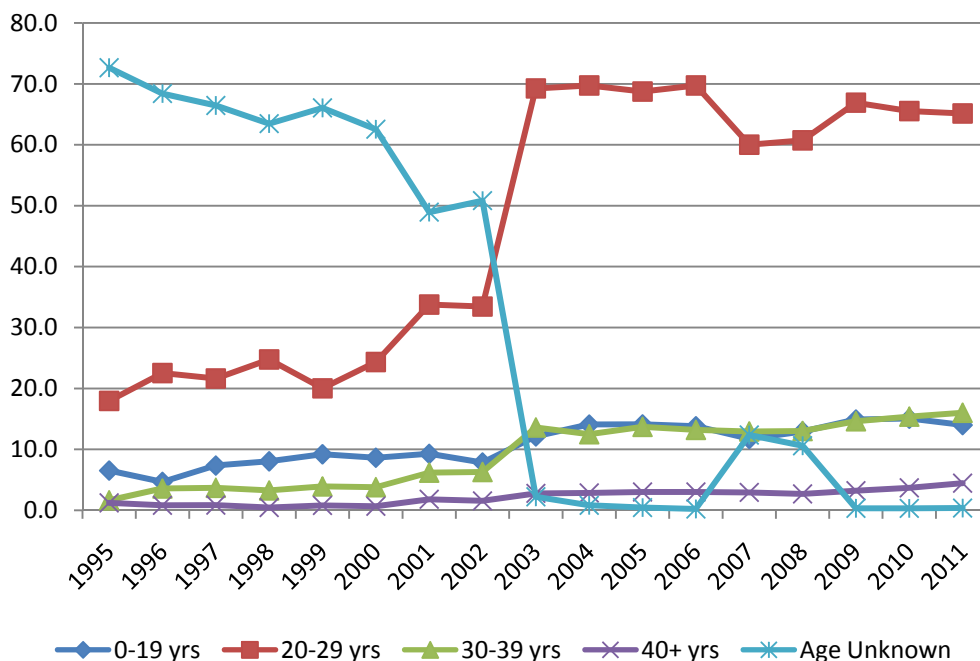


Figure 5. Percentage of *Chlamydia trachomatis* notifications by age group, 1995-2011



Lymphogranuloma venereum (LGV)

Two cases of LGV were reported in 2011 both in men aged 20 years or older. Although LGV rarely occurs in Western Europe, outbreaks among MSM have occurred in the United Kingdom and the Netherlands in the past few years.

Gonorrhoea

The number of gonorrhoea notifications continued to increase (+33.4%) in 2011. The CIR now stands at 18.2 per 100,000 population, the highest rate ever recorded for gonorrhoea (figure 6). This rate is also much higher than the latest data available from Europe; the crude incidence rate for 28 EU/EEA Member States in 2010 was 10.4 per 100,000 population¹. However, there was large variation in the rates across the 28 countries; the CIR reported for the United Kingdom was 27.7/100,000, while four countries (Bulgaria, Portugal, Poland and Luxembourg) reported rates less than 1.5/100,000.

The majority of gonorrhoea notifications continue to be reported in men (n=650; 77.9%). Between 2006 and 2010, there was an increase in notifications in women. This increase was reversed somewhat in 2011 with the male-to-female increasing to 4:1 from 3:1 in 2010.

In line with previous years, the majority of gonorrhoea notifications in 2011 were reported in those aged 20-29 years (55.6%; figure 7). Notifications among the 0-19 years age group (n=96; 11.5%) have decreased slightly again in 2011. This follows a peak in 2009 when 16.1% of gonorrhoea notifications were among those aged 19 years or younger.

Figure 6. Percentage of gonorrhoea notifications by gender and crude incidence rate per 100,000 population, 1995-2011

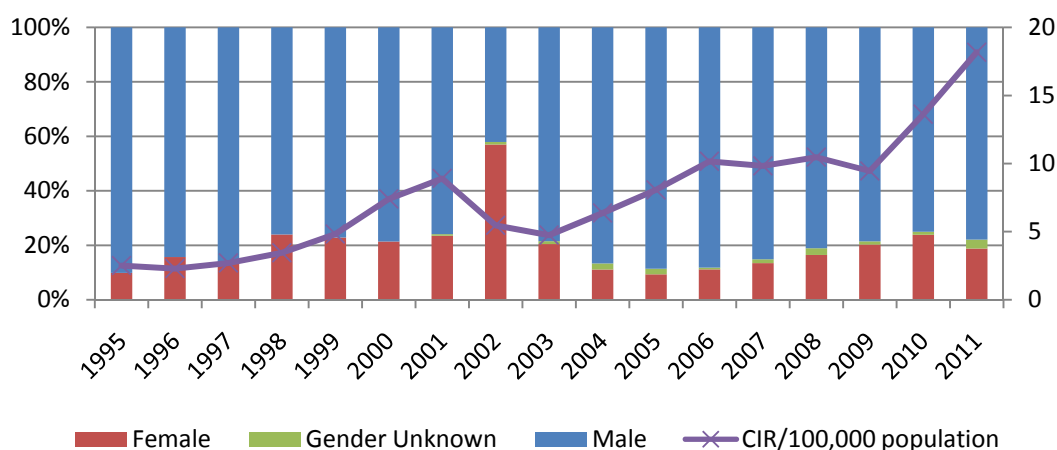
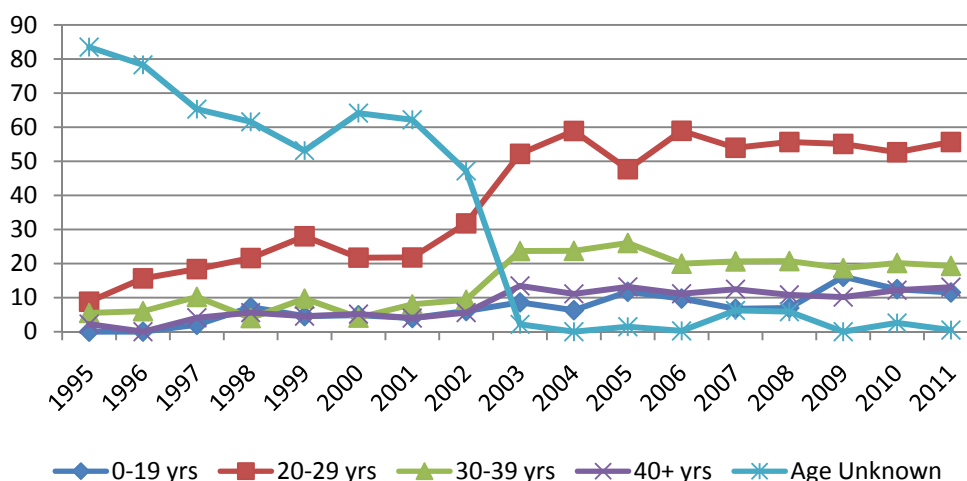


Figure 7. Percentage of gonorrhoea notifications by age group, 1995-2011



Syphilis

A total of 653 cases of syphilis were notified in 2011. Of these 653 cases, case-based data are available for 466 cases (71.4%). Stage of infection was reported for less than 40% of all cases notified in 2011 (table 2). There were 171 cases of early syphilis, 22 cases of late syphilis and 59 cases were classified as latent of undetermined duration. One case of probable congenital syphilis was also reported.

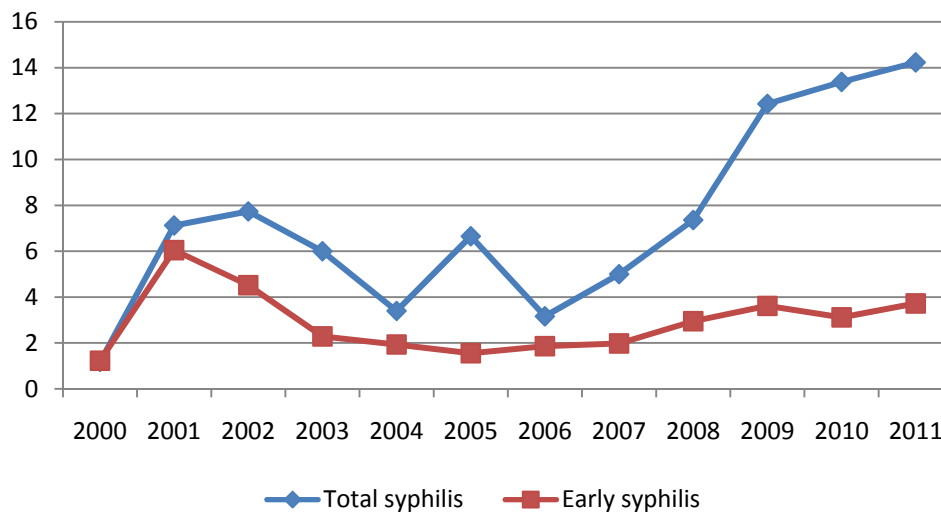
Table 2. Number of syphilis cases by HSE area and stage of infection, 2011

Stage of infection	HSE E	HSE M	HSE MW	HSE NE	HSE NW	HSE S	HSE SE	HSE W	Total
Congenital	1	0	0	0	0	0	0	0	1
Primary	69	2	8	5	0	1	2	2	89
Secondary	39	1	2	2	0	0	3	7	54
Early latent	21	1	1	1	0	0	2	2	28
Early syphilis	129	4	11	8	0	1	7	11	171
Late Latent	5	1	1	0	0	0	8	5	20
Tertiary	0	0	0	0	0	0	2	0	2
Late syphilis	5	1	1	0	0	0	10	5	22
Latent of undetermined duration	36	3	10	2	1	2	3	2	59
Unknown	299	10	40	17	4	15	3	12	400
Total	470	18	62	27	5	18	23	30	653

The CIR for all stages of syphilis reported (both case-based and aggregate) in 2011 was 14.2 per 100,000 population, continuing the upward trend which began in 2006 (figure 8). The CIR for early syphilis was 3.7/100,000 in 2011, a slight increase from 2010 (3.0/100,000) but similar to the rate for 2009 (3.6/100,000; figure 8).

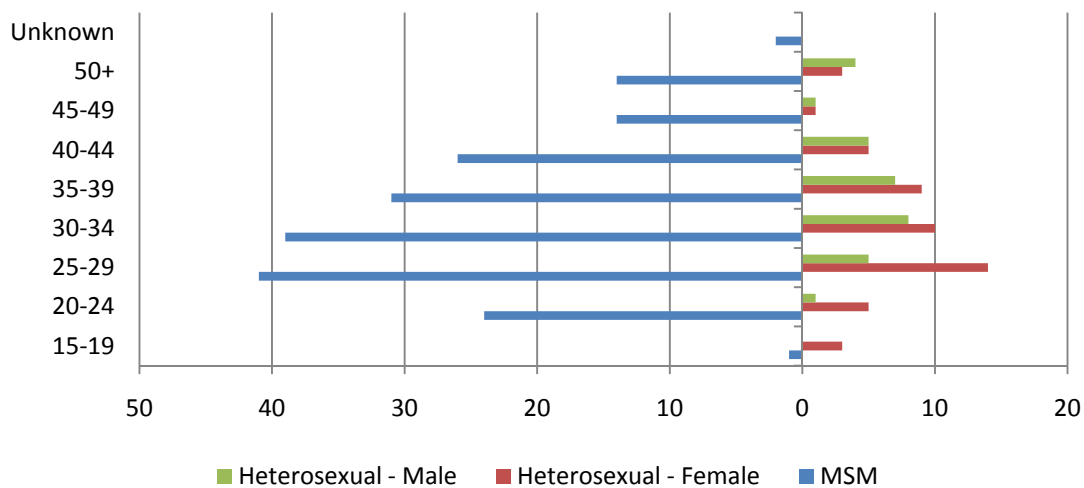
The CIR for all stages of syphilis in the East (29.0/100,000) and Mid-West (16.3/100,000) were above the national rate while the CIR in all other areas were lower than the national rate. While the introduction of the CIDR system allows analysis by patient's area of residence, not all syphilis cases were reported through CIDR in 2011 and patient's area of residence was not provided for all cases that were reported through CIDR. As a result, the rates and numbers of cases by HSE area may reflect the location of STI services as well as differences in reporting practices by clinics, clinicians and laboratories from one area to another.

Figure 8. Crude incidence rate per 100,000 population of early syphilis and total syphilis by year, 2000-2011



Three-quarters of all cases were reported in men (n=491) and the largest number were reported in the 30-39 years age group (n=249). The male-to-female ratio for all stages of syphilis was 3:1. For cases where age, rather than age group, was reported (n=463), the median age was 34 years (range 3 months to 89 years).

Figure 9. Number* of syphilis cases by gender, sexual orientation and gender, 2011



*Source: case-based database and CIDR; includes only cases where gender and sexual orientation are known (n=273)

Where country of birth was reported (n=240), the majority (53.3%) of cases continue to occur in people born in Ireland. Country of infection was recorded for 205 cases; 69.8% were reported to have been acquired in Ireland, while more than five cases were reported to have been acquired in Spain (n=8) and Brazil (n=6). The service at which cases were first identified was available for 70.4% of cases reported in 2011. A breakdown of the services is given in table 3.

Table 3. Number and per cent of syphilis cases by service at which cases were first identified*, 2011

Service at which case was first identified	N	%
STI clinic	255	55.4
General practice	87	18.9
Hospital	51	11.1
Antenatal	35	7.6
Other	23	5.0
Other primary care	9	2.0

*These data were available for 460 cases

While 35 cases among women were first identified in an antenatal setting only 25 were reported as pregnant. Of those cases that were reported as pregnant, 9 were diagnosed as early syphilis, 3 as late syphilis and 12 were classified as latent of undetermined duration. Stage of infection was unknown for one other case.

For all stages for syphilis, thirty-two cases were reported as re-infections, with the majority being diagnosed as early syphilis (n=23). HIV status was reported for 297 cases; 49 cases were reported as HIV positive.

Early syphilis

A total of 171 cases of early syphilis were reported in 2011; 89 (52.0%) were classified as primary syphilis, 54 (31.6%) secondary syphilis and 28 (16.4%) as early latent syphilis. Cases of early syphilis were reported from all HSE areas except the North West. The CIR of early syphilis in the HSE East (8.0/100,000) was much higher than the national rate (3.7/100,000), confirming that this region remains a centre of transmission within Ireland.

Table 4. Summary of early syphilis cases, 2011

Early syphilis cases	n	%
Number of early cases	171	-
Re-infections	23	13.5
Number of early cases who are MSM	136	79.5
Number who are HIV positive	32	18.7
Number who are pregnant	9	5.3
Number acquired in Ireland	118	69.0
Number born in Ireland	97	56.7

There were 154 cases among men and 17 cases among women, giving a male-to-female ratio of 9:1. The majority of cases (79.5%) continue to be among men who have sex with men (MSM). The most frequently reported age groups were 25-29 years (n=42; 24.6%). The age range was 17 years to 68 years (median 31 years).

Table 5. Number and per cent of early syphilis cases by age group, 2011

Age group	n	%
15-19 yrs	4	2.3
20-24 yrs	25	14.6
25-29 yrs	42	24.6
30-34 yrs	32	18.7
35-39 yrs	24	14.0
40-44 yrs	25	14.6
45-49 yrs	8	4.7
50+ yrs	9	5.3
Unknown	2	1.2
Total	171	-

Table 6. Number and per cent of syphilis re-infections by mode of transmission in early syphilis cases, 2011

Re-infection	MSM	Non-MSM	Unknown	Total
Yes	21(15.4%)	2 (7.1%)	0 (0.0%)	23
No	91 (66.9%)	16 (57.1%)	5 (71.4%)	112
Unknown	24 (17.6%)	10 (35.7%)	2 (28.6%)	36
Total	136	28	7	171

Table 7. Number and per cent of early cases by country of infection and mode of transmission, 2011

Country of infection	MSM		Non-MSM		Unknown		Total
	n	%	n	%	n	%	
Ireland	101	74.3	13	46.4	4	57.1	118
Unknown	25	18.4	5	17.9	3	42.9	33
Spain	3	2.2	3	10.7	0	0.0	6
Brazil	2	1.5	2	7.1	0	0.0	4
Russian Federation	0	0.0	2	7.1	0	0.0	2
United Kingdom	2	1.5	0	0.0	0	0.0	2
Indonesia	1	0.7	0	0.0	0	0.0	1
France	0	0.0	1	3.6	0	0.0	1
Thailand	0	0.0	1	3.6	0	0.0	1
Australia	1	0.7	0	0.0	0	0.0	1
Italy	0	0.0	1	3.6	0	0.0	1
Lithuania	1	0.7	0	0.0	0	0.0	1
Total	136		28		7		171

For cases of early syphilis, the proportion of re-infection amongst MSM (15.4%) was more than double the proportion among heterosexuals (7.1%) in 2011 (table 6).

While country of infection is reported as Ireland for the majority of early syphilis cases (69.0%), the figure varies between MSM and heterosexuals. Three-quarters of early cases in MSM were acquired

in Ireland compared to less than half (46.4%) of cases in heterosexuals. Spain, Brazil or Russian Federation was reported as the country of infection for 24.9% of cases in heterosexuals.

Three-quarters of early cases are first identified through dedicated STI services and a further 13.5% were identified in General Practice. MSM were more likely to attend for routine STI screening (57.4%) than heterosexuals (10.0%; table 8). A quarter of early cases in heterosexuals reported GP referral as reason for attending compared with 8.8% of early cases in MSM.

Contact referral was reported as the reason for attending for 10.5% of early syphilis cases, highlighting the importance of partner notification in the identification and treatment of early syphilis cases to minimise onward transmission. A minority of cases reported symptoms as the reason for attending underlining the value of routine testing among those attending STI clinics.

Table 8. Number and per cent of early cases by reason for attending and mode of transmission, 2011

Reason for attending	MSM		Non-MSM		Unknown		Total
	n	%	n	%	n	%	
Routine STI screen	78	57.4	3	10.7	3	42.9	84
GP referral	12	8.8	7	25.0	1	14.3	20
Contact referral	14	10.3	4	14.3	0	0.0	18
Symptomatic	12	8.8	0	0.0	1	14.3	13
Hospital referral	5	3.7	2	7.1	1	14.3	8
Self referral	8	5.9	0	0.0	0	0.0	8
Antenatal referral/screening	0	0.0	9	32.1	0	0.0	9
Other	3	2.2	3	10.7	1	14.3	7
Unknown	4	2.9	0	0.0	0	0.0	4
Total	136		28		7		171

HIV status was reported for 91.8% of early cases (n=157); 32 cases of early syphilis were reported as HIV positive. Of these 32 cases, 12 (37.5%) were diagnosed with HIV in 2011. HIV status was reported as positive for 22.1% of early cases among MSM, compared to 7.1% of cases among heterosexuals.

Table 9. HIV status (number and per cent) among early syphilis cases by mode of transmission, 2011

HIV Status	MSM	Non-MSM	Unknown	Total
Positive	30 (22.1%)	2 (7.1%)	0 (0.0%)	32
Negative	98 (72.1%)	23 (82.2%)	4 (57.1%)	125
Unknown	8 (5.9%)	3 (10.7%)	3 (42.9%)	14
Total	136	28	7	171

Congenital syphilis

Three cases of syphilis were reported in children less than 14 years of age. One of these was diagnosed at birth as probable congenital syphilis. No further information is available on the two other cases.

Syphilis among MSM

- Sexual orientation was reported for 274 cases and 192 cases were reported as MSM. The majority of cases among MSM were early syphilis (n=136), 8 were reported as late latent and 19 as latent of undetermined duration. Stage of infection was missing or recorded as unknown for 29 cases.
- While the most frequently reported age group for cases among MSM was 25-29 years (21.4%), 7.3% of cases were aged 50 years or older; the age range was 19-77 years.
- Three-quarters of cases among MSM were resident in the HSE East; 7.3% were resident in HSE Mid West; 6.8% were resident in HSE West; 4.2% were resident in HSE North East; 3.1% were resident in HSE South East; 2.6% were resident in HSE Midlands; and 0.5% were resident in each of HSE South and HSE North West.
- Country of infection was reported as Ireland for 60.9% of cases among MSM and a further 5.3% of cases were acquired in Spain, Brazil or the United Kingdom.
- Just over half of cases (54.2%) among MSM were born in Ireland; Brazil, Italy and Poland were the next most frequently reported countries of birth (5.2%, 2.6% and 2.6% respectively).
- The majority of cases among MSM (81.3%) were first identified at a dedicated STI service, a much higher proportion than heterosexuals (31.3%). Routine STI screen (50.0%) was the most frequently reported reason for attending followed by GP referral (9.9%) and contact referral (9.4%).
- The proportion of re-infection for all stages of syphilis and for early syphilis amongst MSM (13.5% and 15.4%, respectively) was more than double the proportion among heterosexuals (6.0% and 7.1%, respectively) in 2011. Information was available on year of previous infection for 57.7% of cases amongst MSM; 30.8% of cases amongst MSM reported as re-infections were last diagnosed with syphilis in 2009 or 2010.
- HIV status was reported as positive for 21.4% (n=41) of cases among MSM, compared to 8.4% of cases among heterosexuals. A third of syphilis cases among MSM who were reported as HIV positive were diagnosed with HIV in 2011.

Other STIs

Ano-genital warts

After Chlamydia, ano-genital warts was the second most frequently reported STI in 2011, accounting for 18.5% of all STI notifications. The number of notifications (n=2,459) is largely unchanged from 2010 when there were 2,556 notifications (table 1). Full annual data returns from one large STI clinic are outstanding and quarter 4 data are missing from another so the true incidence of ano-genital warts in the population is likely to be higher. There were slightly more notifications among men (55.4%) and 63.4% of cases were aged 20-29 years.

Herpes simplex (genital)

Notifications of herpes simplex (genital) increased by 39.8% between 2010 and 2011 (table 1). The CIR was 26.7 per 100,000, the highest rate recorded for herpes simplex (genital) since it was added to the list of notifiable diseases in 1985 (figure 2). The increase in notifications may be due to improved detection as a result of the introduction of molecular testing which is more sensitive than viral culture. Herpes simplex (genital) was reported among more women (64.8%) than men (31.6%) and was most frequently reported among 20-29 year old (47.4%).

Non-specific urethritis

There was little change in the number of notifications of non-specific urethritis (NSU) in 2011 (n=1,603) compared with 2010 (n=1,657) (table 1). Full annual data returns from one large STI clinic are outstanding and quarter 4 data are missing from another so the true incidence of NSU in the population is likely to be higher. While the case definition for NSU notifications in 2011 specifies “any male meeting the clinical criteria”, NSU continues to be reported among women (n=99, 6.2%).

Trichomoniasis

Notifications of trichomoniasis decreased from 84 in 2010 to 75 in 2011. Notifications were almost exclusively among women (96.0%). Trichomoniasis continues to be reported more commonly among older age groups, with just 28.0% of case reported in those aged 20-29 years. Sixty-one per cent of cases were aged 30 years or older.

Comment

This report summarises the epidemiology of STI in Ireland, based on data reported in 2011. For Chlamydia, gonorrhoea and all STIs apart from syphilis, the lack of case-based information prevents detailed epidemiological analysis.

Work is underway to move to national case based reporting of STIs in the national secure electronic information system, CIDR. Use of this system will provide timely case-based data and improve data quality. Collating notifications from different sources, and assigning events based on place of residence, will give a more accurate assessment of the burden of Chlamydia, gonorrhoea and other STIs nationally and regionally.

The switch to CIDR for the reporting of syphilis notifications in May, 2011, has provided valuable epidemiological data on syphilis cases. There is a need to build on this, and improve efforts to identify stage of infection, which was not available for the majority (61.3%) of syphilis cases notified in 2011.

Suggestions for improving the quality or content of the report are welcomed.

References

1. European Centre for Disease Prevention and Control. Sexually transmitted infections in Europe, 1990-2010. Stockholm: ECDC; 2012.
<http://ecdc.europa.eu/en/publications/Publications/201206-Sexually-Transmitted-Infections-Europe-2010.pdf>

Appendix A: Data collection methods, 2011

STIs other than syphilis

The surveillance of STIs in Ireland is based on the aggregation of notifications received from three sources: STI clinics; laboratories (since 2004); and primary care and other clinicians. Notifications are collated by Departments of Public Health and are then reported to HPSC on a quarterly basis in aggregate form i.e. not as case-based reports. A summary of the sources of notification data in 2011 is given in table A1.

Note: data included in this report are not fully complete as data from a number of sources are outstanding for 2011.

Table A1. Summary of aggregate STI data notification sources, 2011

HSE Area	Q1, 2011			Q2, 2011			Q3, 2011			Q4, 2011		
	Lab	Clinic	PH	Lab	Clinic	PH	Lab	Clinic	PH	Lab	Clinic	PH
East	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	**	✓
Midlands	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mid West	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
North East [#]	✓	n/a	✓	✓	n/a	✓	✓	n/a	✓	✓	-	✓
North West [~]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
South East	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
South	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
West [*]	✓	-	✓	✓	-	✓	✓	-	✓	✓	-	✓

✓ = notifications received; Lab = laboratory notifications; Clinic = notifications from STI clinics; PH = notifications received by public health from primary care and other clinicians.

[#] The first STI clinic in the North East opened in Monaghan in December, 2012

[~] Does not include notifications from Altnagelvin Hospital, Derry, for patients with an address in Donegal

^{*} Includes a small number of STI clinic cases notified to Public Health but full annual returns outstanding

^{**} Data from one clinic are outstanding for quarter 4, 2011

Syphilis

Up to the end of April, 2011, syphilis cases were reported in the same way as that described above for all other STIs. In addition to the reporting of aggregate numbers of cases, enhanced forms were completed by Departments of Public Health in conjunction with clinicians and were then forwarded to HPSC. However, the data collected by each system is not comparable and cannot be linked.

Since 1st May, 2011, the Computerised Infectious Disease Reporting (CIDR) system has been used to record notifications of syphilis thereby allowing the replacement of the case-based and aggregate syphilis databases previously in use in Departments of Public Health and at HPSC. Collating syphilis notifications from all sources in a standard database has enabled timely weekly reporting of syphilis as well as providing a more accurate assessment of the burden of syphilis nationally based on area of residence. To coincide with the switch to CIDR, the enhanced surveillance form was updated in January, 2011 (appendix B).

Data from all three sources (CIDR, national case-based and aggregate syphilis databases) were used in the preparation of this report.

Appendix B: Syphilis enhanced surveillance form, January, 2011

Section A: Patient Information

1. Patient's Clinic No.:

2. Clinic/Practice Name:

3. Surname Initials: 4. Forename Initials:

5. County of residence: 6. HSE Area: 7. LHO:

8. Sex: F M NK 9. Date of Birth: 10. Age:
If date of birth unknown.

11. Country of birth:

12. Ethnicity: *White:* Irish Irish Traveller White other
Black: African Black other
Asian: Chinese Asian other Unknown Other / Mixed ethnicity

13. If other ethnicity, please specify:

14. Sexual Orientation: Heterosexual Homosexual Bisexual Unknown

Section B: Referral Pathway

15. Reason for attending: Routine STI screen Contact tracing Responding to syphilis campaign Referral from elsewhere Antenatal screening

16. If referred from elsewhere: Antenatal clinic General Practice Family planning clinic Student/Youth health services Gynaecology / Fertility treatment

If other, please specify:

Section C: Clinical Details

	Yes	No	Unknown	
17. Is the patient symptomatic?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18. If yes, date of onset: <input type="text"/>
19. Is the patient pregnant?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20. If yes, period of gestation: <input type="text"/> /40
21. Syphilis re-infection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22. If yes, year of last infection: <input type="text"/>
23. Is the patient a contact of another syphilis case?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
24. Date of diagnosis: <input type="text"/>				
25. Stage of infection: <i>See case definition overleaf</i>	<input type="checkbox"/> Primary	<input type="checkbox"/> Early latent	<input type="checkbox"/> Latent of undetermined duration	<input type="checkbox"/> Unknown
	<input type="checkbox"/> Secondary	<input type="checkbox"/> Late latent	<input type="checkbox"/> Tertiary	
26. HIV Status: Positive <input type="checkbox"/> Negative <input type="checkbox"/> Unknown <input type="checkbox"/>				27. If positive, year of diagnosis: <input type="text"/>

Section D: Acquisition

	Yes	No	Unknown
28. Is the patient a commercial sex worker?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. Did the patient have contact with a commercial sex worker?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Country of infection: <input type="text"/>			
31. Probable place/city of acquisition: <input type="text"/>			

Section E: Contacts

32. Number of sexual contacts in the last 3 months (prior to diagnosis):

Total:

Traceable:

Untraceable:

Unknown:

33. Any social/sexual network implicated? E.g. sauna, bar, internet

Section F: Case Classification

34. Based on the case definitions below, please enter case classification: Probable Confirmed

35. Laboratory name:

Section G: Comments

Section H: Completed by

36. Name:

37. Date

38. Position: Health advisor Doctor Nurse Public health

Please return this completed form to your local Department of Public Health

Section I: Case Definition

	Clinical Description	Laboratory criteria for diagnosis	Case Classification
P r i m a r y	A stage of infection with <i>T. pallidum</i> characterised by one or more chancres (ulcers). Chancres might differ considerably in clinical appearance.	One of the following: - Detection of specific IgM by EIA - Demonstration of <i>T. pallidum</i> in clinical specimens by darkfield microscopy, direct fluorescent antibody (DFA-TP), or equivalent methods. <i>For a probable case:</i> A reactive serological test (nontreponemal: Venereal Disease Research Laboratory [VDRL] or rapid plasma reagin [RPR]; treponemal: fluorescent treponemal antibody absorbed [FTA-ABS] or microhaemagglutination assay for antibody to <i>T. pallidum</i> [MHA-TP]) or <i>Treponema pallidum</i> Phytohaemagglutination assay (TPPA).	Probable: A clinically compatible case with one or more ulcers (chancres) consistent with primary syphilis and any reactive serologic test. Confirmed: A clinically compatible case that is laboratory confirmed.
S e c o n d a r y	A stage of infection caused by <i>T. pallidum</i> and characterised by localised or diffuse mucocutaneous lesions, often with generalised lymphadenopathy. The primary chancre may still be present.	Demonstration of <i>T. pallidum</i> in clinical specimens by darkfield microscopy, (DFA-TP), or equivalent methods. <i>For probable case, one of the following:</i> - A reactive serologic test (nontreponemal: Venereal Disease Research Laboratory [VDRL]) - Rapid plasma reagin [RPR]; treponemal: fluorescent treponemal antibody absorbed [FTA-ABS] - Microhaemagglutination assay for antibody to <i>T. pallidum</i> [MHA-TP] - <i>Treponema pallidum</i> phytohaemmagglutination assay (TPPA).	Probable: A clinically compatible case with any reactive serologic test. Confirmed: A clinically compatible case that is laboratory confirmed.
L a t e n t	A stage of infection caused by <i>T. pallidum</i> in which organisms persist in the body of the infected person without causing symptoms or signs.	Demonstration of a positive reaction with a specific EIA but negative for laboratory test for infectious syphilis (see primary or secondary syphilis).	Probable: No clinical signs or symptoms of syphilis and a positive laboratory test. Confirmed: N/A.
	<i>Early:</i> Initial infection occurred less than 2 years prior to diagnosis; <i>Late:</i> No evidence of having acquired the disease within the 2 years prior to diagnosis.		
T e r t i a r y	A stage of infection caused by <i>T. pallidum</i> in which there are manifestations of cardiovascular syphilis, gummatous disease or late neurosyphilis.		

Appendix C: Data Tables

Table C1. Number of notifications of sexually transmitted infections by HSE public health area, 2011

Sexually transmitted infection	HSE-E	HSE-M	HSE-MW	HSE-NE	HSE-NW	HSE-SE	HSE-S	HSE-W	Ireland
Ano-genital warts	856	27	472	2	153	411	527	11	2459
Chancroid	0	0	0	0	0	0	0	0	0
<i>Chlamydia trachomatis</i> infection	3838	168	580	305	238	715	288	275	6407
Gonorrhoea	613	9	76	20	22	46	27	21	834
Granuloma inguinale	0	0	0	0	0	0	0	0	0
Herpes simplex (genital)	896	11	70	20	14	62	73	80	1226
Lymphogranuloma venereum	2	0	0	0	0	0	0	0	2
Non-specific urethritis	944	0	236	0	25	25	373	0	1603
Syphilis	470	18	62	27	5	23	18	30	653
Trichomoniasis	34	2	11	5	4	9	5	5	75
Total	7653	235	1507	379	461	1291	1311	422	13259

Table C2. Crude incidence rate* per 100,000 population of sexually transmitted infections by HSE Area, 2011

Sexually transmitted infection	HSE-E	HSE-M	HSE-MW	HSE-NE	HSE-NW	HSE-SE	HSE-S	HSE-W	Ireland
Ano-genital warts	52.8	9.6	124.4	0.5	59.2	82.6	79.3	2.5	53.6
Chancroid	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Chlamydia trachomatis</i> infection	236.9	59.5	152.9	69.2	92.1	143.7	43.3	61.7	139.6
Gonorrhoea	37.8	3.2	20.0	4.5	8.5	9.2	4.1	4.7	18.2
Granuloma inguinale	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Herpes simplex (genital)	55.3	3.9	18.5	4.5	5.4	12.5	11.0	18.0	26.7
Lymphogranuloma venereum	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-specific urethritis	58.3	0.0	62.2	0.0	9.7	5.0	56.1	0.0	34.9
Syphilis	29.0	6.4	16.3	6.1	1.9	4.6	2.7	6.7	14.2
Trichomoniasis	2.1	0.7	2.9	1.1	1.5	1.8	0.8	1.1	1.6
All STIs	472.4	83.2	397.3	86.0	178.5	259.5	197.3	94.8	289.0

*Rates calculated using Census 1996 (1995-1999), Census 2002 (2000-2003), Census 2006 (2004-2008) and Census 2011 (2009-2011).

Table C3. Number of notifications of sexually transmitted infections by gender and age group, 2011

Sexually transmitted infection	Gender			Age Group					Total
	Male	Female	Unknown	0-19 yrs	20-29 yrs	30-39 yrs	40+ yrs	Unknown	
Ano-genital warts	1363	1071	25	264	1560	436	190	9	2459
Chancroid	0	0	0	0	0	0	0	0	0
<i>Chlamydia trachomatis</i> infection	2761	3446	200	897	4174	1026	286	24	6407
Gonorrhoea	650	157	27	96	464	161	109	4	834
Granuloma inguinale	0	0	0	0	0	0	0	0	0
Herpes simplex (genital)	388	794	44	149	581	312	183	1	1226
Lymphogranuloma venereum	2	0	0	0	1	1	0	0	2
Non-specific urethritis	1504	99	0	112	900	410	177	4	1603
Syphilis	491	156	6	10	156	249	236	2	653
Trichomoniasis	2	72	1	8	21	23	23	0	75
Total	7161	5795	303	1536	7857	2618	1204	44	13259
% of all STIs	54.0	43.7	2.3	11.6	59.3	19.7	9.1	0.3	

Table C4. Number of notifications of sexually transmitted infections by year, 1995-2011

Sexually transmitted infection	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Ano-genital warts	1972	2286	2514	2886	3049	3735	3993	3932	3981	4174	3456	3494	3283	2134	2464	2556	2459
Chancroid	3	1	1	0	1	16	1	1	0	1	0	1	1	0	0	0	0
<i>Chlamydia trachomatis</i> infection	245	364	462	646	869	1343	1649	1922	2258	2803	3353	3144	5023	6290	5781	5399	6407
Gonorrhoea	91	83	98	125	175	290	349	214	186	270	342	431	417	444	434	625	834
Granuloma inguinale	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0
Herpes simplex (genital)	198	181	211	243	275	269	331	358	375	411	441	455	988	394	469	877	1226
Lymphogranuloma venereum	0	0	5	1	2	0	0	1	0	0	1	0	2	0	0	3	2
Non-specific urethritis	781	823	1034	1083	1265	1726	1634	2025	2332	2746	2106	2161	1870	1636	1209	1657	1603
Syphilis	11	17	16	15	6	46	279	303	235	144	282	134	212	312	570	614	653
Trichomoniasis	60	71	94	38	47	78	64	73	59	60	83	52	94	70	79	84	75
Total	3361	3827	4436	5037	5690	7503	8300	8829	9426	10610	10064	9872	11890	11280	11006	11815	13259

Table C5. Crude incidence rates* of sexually transmitted infections per 100,000 population by year, 1995-2011

Sexually transmitted infection	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Ano-genital warts	54.4	63.0	69.3	79.6	84.1	95.3	101.9	100.4	101.6	98.4	81.5	82.4	77.4	50.3	53.7	55.7	53.6
Chancroid	0.1	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Chlamydia trachomatis</i> infection	6.8	10.0	12.7	17.8	24.0	34.3	42.1	49.1	57.6	66.1	79.1	74.2	118.5	148.4	126.0	117.7	139.6
Gonorrhoea	2.5	2.3	2.7	3.4	4.8	7.4	8.9	5.5	4.7	6.4	8.1	10.2	9.8	10.5	9.5	13.6	18.2
Granuloma inguinale	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Herpes simplex (genital)	5.5	5.0	5.8	6.7	7.6	6.9	8.4	9.1	9.6	9.7	10.4	10.7	23.3	9.3	10.2	19.1	26.7
Lymphogranuloma venereum	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Non-specific urethritis	21.5	22.7	28.5	29.9	34.9	44.1	41.7	51.7	59.5	64.8	49.7	51.0	44.1	38.6	26.3	36.1	34.9
Syphilis	0.3	0.5	0.4	0.4	0.2	1.2	7.1	7.7	6.0	3.4	6.7	3.2	5.0	7.4	12.4	13.4	14.2
Trichomoniasis	1.7	2.0	2.6	1.0	1.3	2.0	1.6	1.9	1.5	1.4	2.0	1.2	2.2	1.7	1.7	1.8	1.6
Total	92.7	105.5	122.3	138.9	156.9	191.5	211.9	225.4	240.6	250.2	237.4	232.8	280.4	266.0	239.9	257.5	289.0

*Rates calculated using Census 1996 (1995-1999), Census 2002 (2000-2003), Census 2006 (2004-2008) and Census 2011 (2009-2011).

Table C6. Crude incidence rate* per 100,000 population of early syphilis by HSE public health area, 2011

Stage of infection	HSE E	HSE M	HSE MW	HSE NE	HSE NW	HSE S	HSE SE	HSE W	National
All stages	29.0	6.4	16.3	6.1	1.9	2.7	4.6	6.7	14.2
Early syphilis	8.0	1.1	2.9	1.8	0.0	0.2	1.4	2.5	3.7

*CIR calculated using data from Census 2011

Table C7. Number and percentage of *C. trachomatis* infection notifications by age group and HSE public health area, 2011

HSE Area	0-19 yrs		20-29 yrs		30-39 yrs		40+ yrs		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	
East	529	13.8	2408	62.7	668	17.4	214	5.6	19	0.5	3838
Midlands	18	10.7	110	65.5	33	19.6	7	4.2	0	0.0	168
Mid West	87	15.0	398	68.6	77	13.3	18	3.1	0	0.0	580
North East	47	15.4	209	68.5	41	13.4	8	2.6	0	0.0	305
North West	29	12.2	160	67.2	44	18.5	5	2.1	0	0.0	238
South East	121	16.9	487	68.1	90	12.6	17	2.4	0	0.0	715
South	19	6.6	212	73.6	44	15.3	8	2.8	5	1.7	288
West	47	17.1	190	69.1	29	10.5	9	3.3	0	0.0	275
Total	897	14.0	4174	65.1	1026	16.0	286	4.5	24	0.4	6407

Table C8. Number and percentage of *C. trachomatis* infection notifications by gender and HSE public health area, 2011

HSE Area	Male		Female		Unknown		Total
	N	%	N	%	N	%	
East	1750	45.6	1919	50.0	169	4.4	3838
Midlands	48	28.6	119	70.8	1	0.6	168
Mid West	231	39.8	348	60.0	1	0.2	580
North East	105	34.4	183	60.0	17	5.6	305
North West	104	43.7	132	55.5	2	0.8	238
South East	253	35.4	459	64.2	3	0.4	715
South	131	45.5	157	54.5	0	0.0	288
West	139	50.5	129	46.9	7	2.5	275
Total	2761	43.1	3446	53.8	200	3.1	6407

Table C9. Number and percentage of gonorrhoea notifications by age group and HSE public health area, 2011

HSE Area	0-19 yrs		20-29 yrs		30-39 yrs		40+ yrs		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	
East	57	9.3	333	54.3	133	21.7	86	14.0	4	0.7	613
Midlands	3	33.3	4	44.4	1	11.1	1	11.1	0	0.0	9
Mid West	12	15.8	42	55.3	10	13.2	12	15.8	0	0.0	76
North East	3	15.0	15	75.0	1	5.0	1	5.0	0	0.0	20
North West	3	13.6	17	77.3	1	4.5	1	4.5	0	0.0	22
South East	14	30.4	23	50.0	5	10.9	4	8.7	0	0.0	46
South	1	3.7	19	70.4	3	11.1	4	14.8	0	0.0	27
West	3	14.3	11	52.4	7	33.3	0	0.0	0	0.0	21
Total	96	11.5	464	55.6	161	19.3	109	13.1	4	0.5	834

Table C10. Number and percentage of Gonorrhoea notifications by gender and HSE public health area, 2011

HSE Area	Male		Female		Unknown		Total
	N	%	N	%	N	%	
East	480	78.3	107	17.5	26	4.2	613
Midlands	7	77.8	2	22.2	0	0.0	9
Mid West	53	69.7	23	30.3	0	0.0	76
North East	18	90.0	2	10.0	0	0.0	20
North West	17	77.3	5	22.7	0	0.0	22
South East	35	76.1	11	23.9	0	0.0	46
South	24	88.9	3	11.1	0	0.0	27
West	16	76.2	4	19.0	1	4.8	21
Total	650	77.9	157	18.8	27	3.2	834

Table C11. Number and percentage of ano-genital warts notifications by gender and HSE public health area, 2011

HSE Area	Male		Female		Unknown		Total
	N	%	N	%	N	%	
East	480	56.1	351	41.0	25	2.9	856
Midlands	10	37.0	17	63.0	0	0.0	27
Mid West	273	57.8	199	42.2	0	0.0	472
North East	1	50.0	1	50.0	0	0.0	2
North West	96	62.7	57	37.3	0	0.0	153
South East	228	55.5	183	44.5	0	0.0	411
South	271	51.4	256	48.6	0	0.0	527
West	4	36.4	7	63.6	0	0.0	11
Total	1363	55.4	1071	43.6	25	1.0	2459

Table C12. Number and percentage of ano-genital warts notifications by age group and HSE public health area, 2011

HSE Area	0-19 yrs		20-29 yrs		30-39 yrs		40+ yrs		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	
East	123	14.4	512	59.8	154	18.0	64	7.5	3	0.4	856
Midlands	6	22.2	10	37.0	7	25.9	3	11.1	1	3.7	27
Mid West	45	9.5	308	65.3	75	15.9	44	9.3	0	0.0	472
North East	0	0.0	2	100.0	0	0.0	0	0.0	0	0.0	2
North West	7	4.6	84	54.9	38	24.8	24	15.7	0	0.0	153
South East	47	11.4	269	65.5	67	16.3	28	6.8	0	0.0	411
South	34	6.5	366	69.4	95	18.0	27	5.1	5	0.9	527
West	2	18.2	9	81.8	0	0.0	0	0.0	0	0.0	11
Total	264	10.7	1560	63.4	436	17.7	190	7.7	9	0.4	2459

Table C13. Number and percentage of herpes simplex (genital) notifications by gender and HSE public health area, 2011

HSE Area	Male		Female		Unknown		Total
	N	%	N	%	N	%	
East	299	33.4	561	62.6	36	4.0	896
Midlands	3	27.3	7	63.6	1	9.1	11
Mid West	17	24.3	52	74.3	1	1.4	70
North East	1	5.0	16	80.0	3	15.0	20
North West	4	28.6	10	71.4	0	0.0	14
South East	13	21.0	48	77.4	1	1.6	62
South	23	31.5	50	68.5	0	0.0	73
West	28	35.0	50	62.5	2	2.5	80
Total	388	31.6	794	64.8	44	3.6	1226

Table C14. Number and percentage of herpes simplex (genital) notifications by age group and HSE public health area, 2011

HSE Area	0-19 yrs		20-29 yrs		30-39 yrs		40+ yrs		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	
East	94	10.5	421	47.0	246	27.5	135	15.1	0	0.0	896
Midlands	3	27.3	3	27.3	3	27.3	2	18.2	0	0.0	11
Mid West	11	15.7	35	50.0	13	18.6	11	15.7	0	0.0	70
North East	4	20.0	7	35.0	6	30.0	3	15.0	0	0.0	20
North West	2	14.3	3	21.4	8	57.1	1	7.1	0	0.0	14
South East	10	16.1	24	38.7	12	19.4	16	25.8	0	0.0	62
South	7	9.6	48	65.8	11	15.1	6	8.2	1	1.4	73
West	18	22.5	40	50.0	13	16.3	9	11.3	0	0.0	80
Total	149	12.2	581	47.4	312	25.4	183	14.9	1	0.1	1226

Table C15. Number and percentage of non-specific urethritis notifications by gender and HSE public health area, 2011

HSE Area	Male		Female		Unknown		Total
	N	%	N	%	N	%	
East	944	100.0	0	0.0	0	0.0	944
Midlands	0	-	0	-	0	-	0
Mid West	137	58.1	99	41.9	0	0.0	236
North East	0	-	0	-	0	-	0
North West	25	100.0	0	0.0	0	0.0	25
South East	25	100.0	0	0.0	0	0.0	25
South	373	100.0	0	0.0	0	0.0	373
West	0	-	0	-	0	-	0
Total	1504	93.8	99	6.2	0	0.0	1603

Table C16. Number and percentage of non-specific urethritis notifications by age group and HSE public health area, 2011

HSE Area	0-19 yrs		20-29 yrs		30-39 yrs		40+ yrs		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	
East	77	8.2	503	53.3	246	26.1	118	12.5	0	0.0	944
Midlands	0	-	0	-	0	-	0	-	0	-	0
Mid West	19	8.1	141	59.7	51	21.6	25	10.6	0	0.0	236
North East	0	-	0	-	0	-	0	-	0	-	0
North West	1	4.0	18	72.0	2	8.0	4	16.0	0	0.0	25
South East	2	8.0	15	60.0	4	16.0	4	16.0	0	0.0	25
South	13	3.5	223	59.8	107	28.7	26	7.0	4	1.1	373
West	0	-	0	-	0	-	0	-	0	-	0
Total	112	7.0	900	56.1	410	25.6	177	11.0	4	0.2	1603

Table C17. Number and percentage of trichomoniasis notifications by gender and HSE public health area, 2011

HSE Area	Male		Female		Unknown		Total
	N	%	N	%	N	%	
East	2	5.9	31	91.2	1	2.9	34
Midlands	0	0.0	2	100.0	0	0.0	2
Mid West	0	0.0	11	100.0	0	0.0	11
North East	0	0.0	5	100.0	0	0.0	5
North West	0	0.0	4	100.0	0	0.0	4
South East	0	0.0	9	100.0	0	0.0	9
South	0	0.0	5	100.0	0	0.0	5
West	0	0.0	5	100.0	0	0.0	5
Total	2	2.7	72	96.0	1	1.3	75

Table C18. Number and percentage of trichomoniasis notifications by age group and HSE public health area, 2011

HSE Area	0-19 years		20-29 years		30-39 years		40+ years		Unknown		Total
	N	%	N	%	N	%	N	%	N	%	
East	5	14.7	6	17.6	10	29.4	13	38.2	0	0.0	34
Midlands	1	50.0	0	0.0	0	0.0	1	50.0	0	0.0	2
Mid West	0	0.0	7	63.6	4	36.4	0	0.0	0	0.0	11
North East	0	0.0	1	20.0	2	40.0	2	40.0	0	0.0	5
North West	0	0.0	0	0.0	2	50.0	2	50.0	0	0.0	4
South East	0	0.0	5	55.6	2	22.2	2	22.2	0	0.0	9
South	2	40.0	2	40.0	1	20.0	0	0.0	0	0.0	5
West	0	0.0	0	0.0	2	40.0	3	60.0	0	0.0	5
Total	8	10.7	21	28.0	23	30.7	23	30.7	0	0.0	75