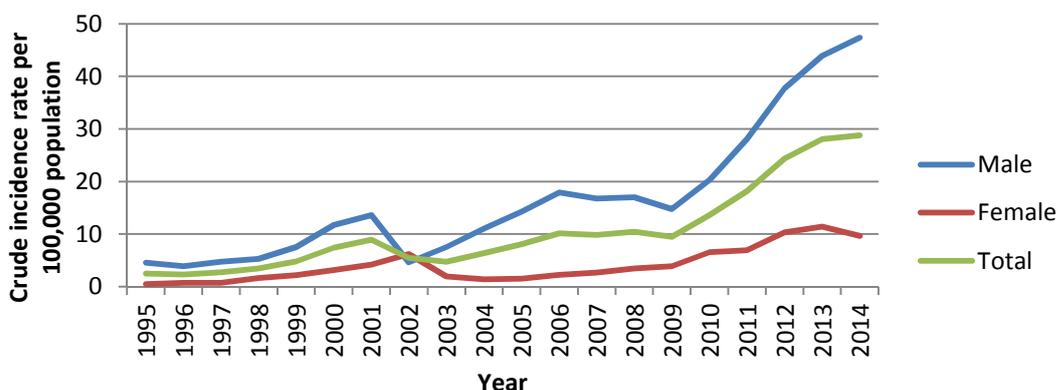


## Key Points

- Gonorrhoea is affecting mainly young people (aged 20-24 years) and men who have sex with men (MSM; 71% where mode of transmission is known)
- The proportion of cases among men (83%) continued to increase in 2014; there were 5 male cases for every female case
- Almost a quarter of patients who were diagnosed with gonorrhoea were also diagnosed another STI in 2014, including 1.2% who were diagnosed with HIV
- The majority of cases among men were diagnosed in an STI clinic (56%), while similar proportions of women were diagnosed in STI clinics (36%) and general practice (39%)
- While genital infections were the most frequently reported site of infection among men (40%) and women (62%), pharyngeal infection was reported among 27% of men and 7% of women

Gonorrhoea is a notifiable sexually transmitted infection. Since early 2013, case based information on laboratory notifications and clinical notifications have been collated in CIDR. Prior to this, information on gonorrhoea was collected on an aggregate basis nationally, the data coming from STI clinics and from GPs via Departments of Public Health.

**Figure 1: Notification rate of gonorrhoea by year of notification and gender, 1995 to 2014**



In 2014, a total of 1,320 cases of gonorrhoea were reported in Ireland, giving a notification rate of 28.8 per 100,000 population. Figure 1 shows the trend in gonorrhoea notifications from 1995 to 2014. The overall trend increased by 200% between 2009 and 2014. The trend among men has been consistently upwards since 2009 while the notification rate amongst women decreased slightly in 2014 (9.7/100,000 in 2014 vs. 11.4/100,000 in 2013). A summary of the key data is presented in table 1.

**Table 1: Gonorrhoea in Ireland, 2014, summary table**

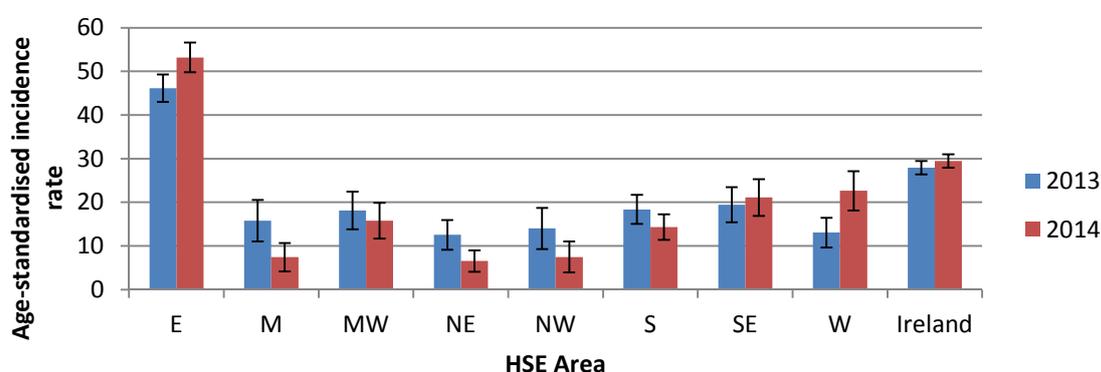
<b>Number of cases</b>		1,320
<b>Notification rate</b>		28.8/100,000
<b>Gender</b>	Males	1,097 (83%)
	Females	220 (17%)
	Male-to-female ratio	5
<b>Age</b>	Median age cases	27 years
	Age range	14 - 66 years
<b>Age-gender specific rate</b>	Highest overall	144/100,000 (20-24 years)
	Highest among males	222/100,000 (20-24 years)
	Highest among females	67/100,000 (20-24 years)
<b>Mode of transmission</b>	Men who have sex with men	297
	% where known	70.9%
	Heterosexual	122
	% where known	29.1%
<b>Other STI infections</b>	All STIs	291 (22%)
	Most common: chlamydia	234 (18%)

\*Excludes those <14 years

## HSE area of residence

The highest age-standardised incidence rate (ASIR) was in HSE East (53.2/100,000) followed by HSE West (22.6/100,000) and HSE Southeast (21.1/100,000). The rate in HSE East increased in 2014 having stabilised in 2013 following an upsurge in gonorrhoea in 2012. In HSE West the rate increased by 72% in 2014 (to 22.6/100,000 from 13.1/100,000 in 2013; figure 2). The increase in HSE West may be attributed to the introduction of more sensitive tests (NAATs).

**Figure 2: Age-standardised incidence rate by HSE area, 2014**



Dublin remains the most frequently reported county of residence, with more than two-thirds of all cases, giving a notification rate of 70.5/100,000. This is more than double the rate in Galway, which is the county with the second highest notification rate (33.1/100,000).

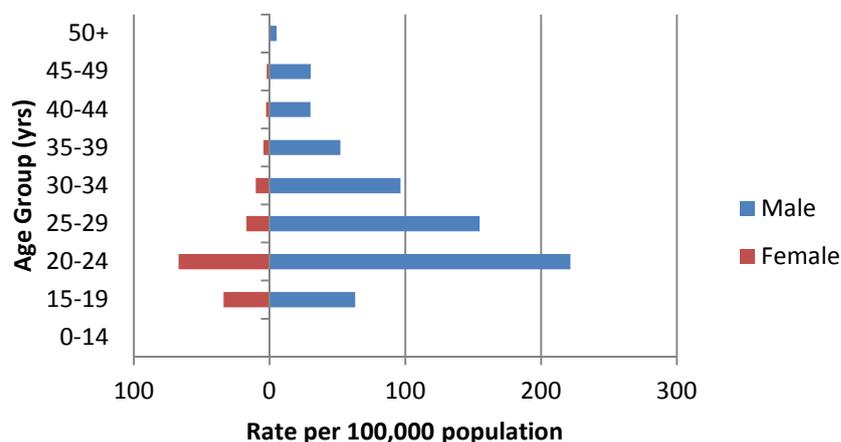
## Age and Gender

In 2014, the median age of cases (excluding those aged <15 years) was 26 years (age range 15 to 66) and the mean age was 28 years. The median age (excluding those aged <15 years) of male cases was 27 years (age range 16 to 66 years) and among female cases was 22 years (age range 15 to 57 years).

There were two cases of gonorrhoea notified among the 0-14 years age group. One of these was reported as an eye infection and no further details were reported for the other case.

A third (32%) of gonorrhoea cases notified in 2014 were among those aged between 20 and 24 years old and 71% were aged between 20 and 35 years old. The highest rate among males was in the 20-24 year old age group followed by the 25-29 year old group. The highest rate among females was also in the 20-24 year age group followed by the 15-19 year old age group (figure 3).

**Figure 3: Gonorrhoea notification rate by age group and gender, 2014**



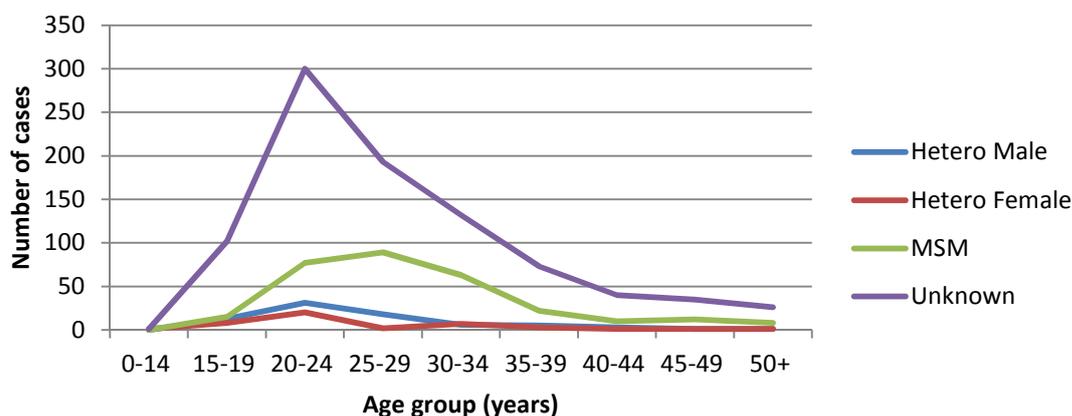
The vast majority of cases were among men (n=1,097, 83%). The notification rate in males continued to increase in 2014, albeit at a slower rate, while the rate in females dropped; in women the rate decreased from 11.4/100,000 in 2013 to 9.7/100,000 and in men the rate increased from 43.9/100,000 in 2013 to 47.4/100,000 (figure 1). The male-to-female ratio was 5 in 2014, an increase from 3.7 and 3.9 in 2012 and 2013, respectively. Across HSE areas the male-to-female ratio ranged from 2.1 in HSE Southeast to 6.3 in HSE East.

## Mode of transmission

Mode of transmission was available for 419 (32%) of gonorrhoea notifications in 2014. Of the 419 cases, mode of transmission was reported as men between men (MSM) for 71% of cases (n=297) and heterosexual for 29% (78 male and 44 female). This field is less complete than in 2013 when mode of transmission was available for 49% of cases, though the distribution remains the similar (69% reported as MSM and 31% as heterosexual where mode of transmission is known).

These data should be interpreted with caution given the high level of missing data. Additionally, the completeness of data on MSM transmission is a reporting artefact as mode can be assigned for some cases for surveillance purposes based on attendance at MSM specific clinics.

**Figure 4: Gonorrhoea notifications by age group and mode of transmission, 2014**



Cases among MSM tended to be older than heterosexuals (figure 4). Forty-two percent of cases among heterosexuals (45% heterosexual women and 40% heterosexual men) were aged 20-24 years compared with 25% of MSM. The median age among MSM (27 years) was higher than among heterosexuals (22 years; 24 years among males and 21 years among females).

### Country of birth

Country of birth was available for 250 (19%) of gonorrhoea notifications in 2014. Of the 250 cases:

- 73% (n=182) were born in Ireland;
- 7% (n=17) were born in Latin America;
- 6% (n=16) were born in Western Europe;
- 14% (n=35) were born in Central and Eastern Europe or other regions.

### Site of infection

Specimen type was used as a proxy for site of infection and was available for 80% (n=1,051) of cases. Only one specimen type was reported for the vast majority of these cases even if there was infection at more than one site. The most frequently reported specimen type (43%, n=574) was genital (urethra, cervix, vagina or urine) among both men and women. A fifth of infections were pharyngeal (n=254). Pharyngeal gonorrhoea occurred in 27% of men compared with 7% of women. The third most common site of infection was ano-rectal (n=217, 16%). Ano-rectal infections accounted for 20% of cases among males compared to less than 1% among women. Eye infections were reported for six cases (four males and two females). A second site of infection was recorded for 1% (n=15) of cases.

## Co-infections

Among patients who were diagnosed with gonorrhoea in 2014, almost a quarter were diagnosed with another STI in 2014. Chlamydia (n= 234, 18%) was the STI most frequently reported. The large volume of notifications in HSE East and the use of more automated processes for processing notifications in CIDR which do not allow for de-duplication of patients, may have contributed to an under estimate of *Chlamydia trachomatis* infections among patients with gonorrhoea in HSE East. Other STIs diagnosed include syphilis (n=24), HIV (n=16), LGV (n=10) and herpes simplex (genital) (n=7).

Twelve patients were diagnosed with two or more episodes of gonorrhoea in 2014. Three-percent (n=36) of cases had a gonorrhoea diagnosis in 2014 and in 2013.

Two patients were also diagnosed with hepatitis; one with hepatitis B and one with hepatitis C.

## Patient type

Patient type (reflecting the service at which the patient was diagnosed) was available for 83% of gonorrhoea cases in 2014. Half of cases were diagnosed in STI clinics; 36% of females and 56% of males. Almost 40% of female cases were diagnosed in general practice compared to 26% of males (table 2).

**Table 2: Gonorrhoea notifications by gender and patient type, 2014**

Patient type	Males		Females		Unknown		Total	
	N	%	N	%	N	%	N	%
Emergency dept.	5	0.5	2	0.9	0	0.0	7	0.5
General practice	286	26.1	85	38.6	2	66.7	373	28.3
Hospital (day patient)	1	0.1	1	0.5	0	0.0	2	0.2
Hospital (inpatient)	8	0.7	1	0.5	0	0.0	9	0.7
STI clinic (hosp. outpatient)	609	55.5	78	35.5	0	0.0	687	52.0
Other	10	0.9	4	1.8	0	0.0	14	1.1
Unknown	178	16.2	49	22.3	1	33.3	228	17.3
<b>Total</b>	<b>1,097</b>	<b>100.0</b>	<b>220</b>	<b>100.0</b>	<b>3</b>	<b>100.0</b>	<b>1,320</b>	<b>100.0</b>

## Discussion

The national data for 2014 shows that gonorrhoea is affecting mainly young people and MSM. While there was little change in the overall gonorrhoea notification rate in 2014 (28.8/100,000 versus 28.1/100,000 in 2013), there were regional variations.

The proportion of cases among men continued to increase in 2014 (83% compared with 79% in 2013) though the increase in the notification rate among men in 2014 was lower than in previous years. Despite poorer data completeness of mode of transmission, MSM still accounted for nearly three-quarters of cases where mode of transmission was known. This is in line with findings in the

U.K.; 68% of gonorrhoea cases were among MSM making it the most commonly diagnosed STI among MSM in England in 2014<sup>1</sup>. In Scotland, rectal infections (marker for MSM), reached its highest level in 2014 accounting for 38% of gonorrhoea diagnoses<sup>2</sup>. Improvements in the completeness of mode of transmission in 2015 and onwards are needed to more accurately describe the burden of gonorrhoea and target interventions.

The 12 patients diagnosed with more than one episode of gonorrhoea in 2014 were all men, as were those diagnosed with another STI: syphilis (n=24), HIV (n=16), LGV (n=10) in addition to gonorrhoea in 2014.

Setting aside the improvements in testing in HSE West, these data suggest ongoing high-levels of gonorrhoea transmission among MSM. Sexual risk behaviour, including unprotected sexual intercourse, persists among MSM putting them at increased risk of STI infections and HIV.

Targeted prevention services for MSM introduced in response to the outbreak in 2013 should continue. Combinations of key interventions, such as access to condoms, HIV and STI testing and treatment, and health promotion, should be utilised to achieve the highest levels of effectiveness so as to improve the sexual health of MSM and reduce HIV and STI infections<sup>3</sup>.

## References

1. Public Health England. Sexually transmitted infections and chlamydia screening in England, 2014. *Health Protection Weekly Report*; 9(22).
2. Health Protection Scotland. Genital herpes simplex, genital chlamydia and gonorrhoea infection in Scotland: laboratory diagnoses 2005-2014. *HPS Weekly Report*;49 16 Jun 2015.
3. European Centre for Disease Prevention and Control. HIV and STI prevention among men who have sex with men. Stockholm: ECDC; 2015

## 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.

## Technical Notes

1. Data are analysed by date of notification in CIDR
2. Data for this report were extracted from the STI aggregate database (1995-2012) and CIDR (2014) on 9<sup>th</sup> July, 2015, and were correct at the time of publication.
3. Percentages are rounded up in the text and provided to one decimal place in the tables.
4. The counties covered by each HSE area are as follows: HSE East: Dublin, Kildare & Wicklow; HSE Midlands: Laois, Longford, Offaly & Westmeath; HSE Midwest: Clare, Limerick & N.

Tipperary; HSE Northeast: Cavan, Louth, Meath & Monaghan; HSE Northwest: Donegal, Leitrim & Sligo; HSE South: Kerry & Cork; HSE Southeast: Carlow, Kilkenny, S. Tipperary, Waterford & Wexford; HSE West: Galway, Mayo & Roscommon.

5. Age-standardised incidence rates were calculated using the direct method in which the national population was taken as the standard population. Population data were taken from Census 2011 from the Central Statistics Office. Data were aggregated into the following age groups for the analysis: 0-4 years, 5-9 years, 10-14 years, 15-19 years, 20-24 years, 25-34 years, 35-44 years, 45-54 years, 55-64 years and  $\geq 65$  years.