

# Syphilis and gonorrhoea diagnoses in a network of STI centres, 2005-2008

July 2010

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## INTRODUCTION

Sexually transmitted infections (STI) are an important public health problem due both to their morbidity and their complications and sequelae in the absence of early diagnosis and treatment. There is also an important connection with HIV infection: on the one hand, STIs increase the risk of acquiring and transmitting HIV by different mechanisms (1) and, on the other hand, because they share routes of transmission with HIV and have a shorter latency period, they are considered to be indicators of changes in sexual risk behaviours (2).

Epidemiological information on STIs at the national level is obtained from the mandatory surveillance system. The STIs subject to epidemiological surveillance are gonorrhoea and syphilis, but only aggregate total number of each of these diseases must be reported weekly. This information makes it possible to detect changes over time. Thus, this system has made it possible to detect an increase in reported cases of syphilis and gonorrhoea in Spain in recent years (3). However, for obvious reasons, the numeric reporting system does not allow in-depth analysis of the characteristics of new reported cases.

In May 2005 the STI Study Group was created, composed initially of a network of 14 STI centres belonging to 7 Autonomous Regions. In 2007 another centre in Murcia joined the network, together with the national Prison Health Service (encompassing the health services of 69 correctional institutions located in the whole country except prisons located in Catalonia).

The objectives of the study group are: a) to characterise new diagnoses of syphilis and gonorrhoea, and b) to analyse the circumstances in which these diagnoses are produced. For more information on the activities of the group, consult Annex I (Publications of the STI Study Group).

This report presents a description of new diagnoses of infectious syphilis and gonorrhoea identified in the participating centres.

## MATERIAL AND METHODS

Descriptive study of infectious syphilis (primary, secondary and early latent) and gonorrhoea diagnoses made in the 15 participating centres and the Prison Health Service from July 2005 to December 2008.

## RESULTS

A total of 2,983 patients were identified, corresponding to 3,019 diagnoses of STI (1,412 of syphilis and 1,607 of gonorrhoea). Table 1 shows the distribution of the number of patients and STI diagnoses by participating centre.

Table 1. Distribution of number of cases by diagnosis and participating centre

| Autonomous Regions  | Centre  | No. of cases | Diagnosis |            |
|---------------------|---|--------------|-----------|------------|
|                     |   |              | Syphilis  | Gonorrhoea |
| Andalusia           | Centro ETS de Algeciras                                   | 57           | 30        | 28         |
|                     | Hospital San Juan de Dios (Granada)                       | 168          | 76        | 94         |
|                     | Unidad Promoción y Apoyo a la Salud (Málaga)              | 103          | 57        | 49         |
|                     | Centro ETS de Sevilla                                     | 622          | 246       | 389        |
| Asturias            | Centro ETS de Gijón                                       | 182          | 121       | 63         |
|                     | Unidad ITS. Hospital Monte Naranco, Oviedo                | 78           | 51        | 28         |
| Catalonia           | Unidad de ITS. CAP Drassanes (Barcelona) *                | 709          | 371       | 338        |
|                     | Unidad de ITS. CAP Tarragonès(Tarragona)                  | 15           | 9         | 8          |
| Madrid              | Programa Prevención del Sida-ETS. Ayuntamiento Madrid     | 173          | 87        | 89         |
| Valencian Community | CIPS de Alicante  | 173          | 94        | 79         |
| Murcia              | Unidad ETS-sida. CS Área II Cartagena                     | 10           | 6         | 4          |
|                     | Comité de apoyo a trabajadoras del sexo (CATS) (Murcia)** | 8            | 2         | 6          |
| Basque Country      | Unidad ETS-Infeciosas. Hospital Basurto (Bilbao)          | 436          | 105       | 338        |
|                     | Unidad ETS-Microbiología. Hospital Basurto (Bilbao)       | 93           | 35        | 60         |
|                     | Consulta de ETS. San Sebastián                            | 62           | 28        | 34         |
|                     | Instituciones Penitenciarias (Prison Health Service)**    | 94           | 94        | -          |
|                     | TOTAL   | 2,983        | 1,412     | 1,607      |

\* no data for the period 01/07/2007 to 31/12/2007

\*\* since 1 January 2007

Tables 2 and 3 show the number of syphilis and gonorrhoea diagnoses by year and participating centre.

Table 2. Number of diagnoses of infectious syphilis by participating centre and year of diagnosis

| Centre  | Year of diagnosis |            |            |            | Total        |
|---|-------------------|------------|------------|------------|--------------|
|   | 2005              | 2006       | 2007       | 2008       |              |
| Centro ETS de Algeciras                                   | 3                 | 10         | 5          | 12         | 30           |
| Hospital San Juan de Dios (Granada)                       | 7                 | 17         | 26         | 26         | 76           |
| Unidad Promoción y Apoyo a la Salud (Málaga)              | 5                 | 17         | 17         | 18         | 57           |
| Centro ETS de Sevilla                                     | 23                | 45         | 82         | 96         | 246          |
| Centro ETS de Gijón                                       | 3                 | 25         | 43         | 50         | 121          |
| Unidad ITS. Hospital Monte Naranco, Oviedo                | 7                 | 6          | 9          | 29         | 51           |
| Unidad de ITS. CAP Drassanes (Barcelona) *                | 63                | 118        | 44         | 146        | 371          |
| Unidad de ITS. CAP Tarragonès(Tarragona)                  | —                 | 5          | 3          | 1          | 9            |
| Programa Prevención del Sida-ETS. Ayuntamiento Madrid     | 5                 | 28         | 25         | 29         | 87           |
| CIPS de Alicante  | 8                 | 21         | 26         | 39         | 94           |
| Unidad ETS-sida. CS Área II Cartagena                     | 1                 | 1          | —          | 4          | 6            |
| Comité de apoyo a trabajadoras del sexo (CATS) (Murcia)** | —                 | —          | 2          | —          | 2            |
| Unidad ETS-Infeciosas. Hospital Basurto (Bilbao)          | 13                | 14         | 35         | 43         | 105          |
| Unidad ETS-Microbiología. Hospital Basurto (Bilbao)       | 2                 | 6          | 8          | 19         | 35           |
| Consulta de ETS. San Sebastián                            | 2                 | 5          | 11         | 10         | 28           |
| Instituciones Penitenciarias (Prison Health Service)**    | —                 | —          | 51         | 43         | 94           |
| <b>TOTAL</b>  | <b>142</b>        | <b>318</b> | <b>387</b> | <b>565</b> | <b>1,412</b> |

\* no data for the period 01/07/2007 to 31/12/2007

\*\* since 1 January 2007

Table 3. Number of diagnoses of gonorrhoea by participating centre and year of diagnosis

| Centre  | Year of diagnosis |            |            |            | Total        |
|---|-------------------|------------|------------|------------|--------------|
|   | 2005              | 2006       | 2007       | 2008       |              |
| Centro ETS de Algeciras                                   | 3                 | 6          | 10         | 9          | 28           |
| Hospital San Juan de Dios (Granada)                       | 9                 | 30         | 23         | 32         | 94           |
| Unidad Promoción y Apoyo a la Salud (Málaga)              | 5                 | 15         | 13         | 16         | 49           |
| Centro ETS de Sevilla                                     | 50                | 91         | 113        | 135        | 389          |
| Centro ETS de Gijón                                       | 6                 | 17         | 21         | 19         | 63           |
| Unidad ITS. Hospital Monte Naranco, Oviedo                | 3                 | 8          | 7          | 10         | 28           |
| Unidad de ITS. CAP Drassanes (Barcelona) *                | 58                | 96         | 54         | 130        | 338          |
| Unidad de ITS. CAP Tarragonès(Tarragona)                  | —                 | 5          | 3          | —          | 8            |
| Programa Prevención del Sida-ETS. Ayuntamiento Madrid     | 14                | 12         | 30         | 33         | 89           |
| CIPS de Alicante  | 7                 | 17         | 23         | 32         | 79           |
| Unidad ETS-sida. CS Área II Cartagena                     | 1                 | 2          | 1          | —          | 4            |
| Comité de apoyo a trabajadoras del sexo (CATS) (Murcia)** | —                 | —          | 2          | 4          | 6            |
| Unidad ETS-Infeciosas. Hospital Basurto (Bilbao)          | 30                | 92         | 124        | 92         | 338          |
| Unidad ETS-Microbiología. Hospital Basurto (Bilbao)       | 8                 | 33         | 11         | 8          | 60           |
| Consulta de ETS. San Sebastián                            | 5                 | 13         | 10         | 6          | 34           |
| <b>TOTAL</b>  | <b>199</b>        | <b>437</b> | <b>445</b> | <b>526</b> | <b>1,607</b> |

\* no data for the period 01/07/2007 to 31/12/2007

\*\* since 1 January 2007

Most patients were diagnosed with only one of the STIs studied - 1,376 with syphilis and 1,571 with gonorrhoea - although 36 cases (1.2%) were diagnosed with both syphilis and gonorrhoea at the same time (Table 4).

Table 4. Distribution of cases by diagnosis

| Diagnoses                          | No.          | Percentage |
|------------------------------------|--------------|------------|
| Primary syphilis                   | 468          | 15.7       |
| Secondary syphilis                 | 553          | 18.5       |
| Early latent syphilis              | 355          | 11.9       |
| Gonorrhoea                         | 1,571        | 52.7       |
| Primary syphilis + gonorrhoea      | 12           | 0.4        |
| Secondary syphilis + gonorrhoea    | 13           | 0.4        |
| Early latent syphilis + gonorrhoea | 11           | 0.4        |
| <b>TOTAL</b>                       | <b>2,983</b> | <b>100</b> |

### a) Sociodemographic characteristics of new diagnoses of infectious syphilis and gonorrhoea

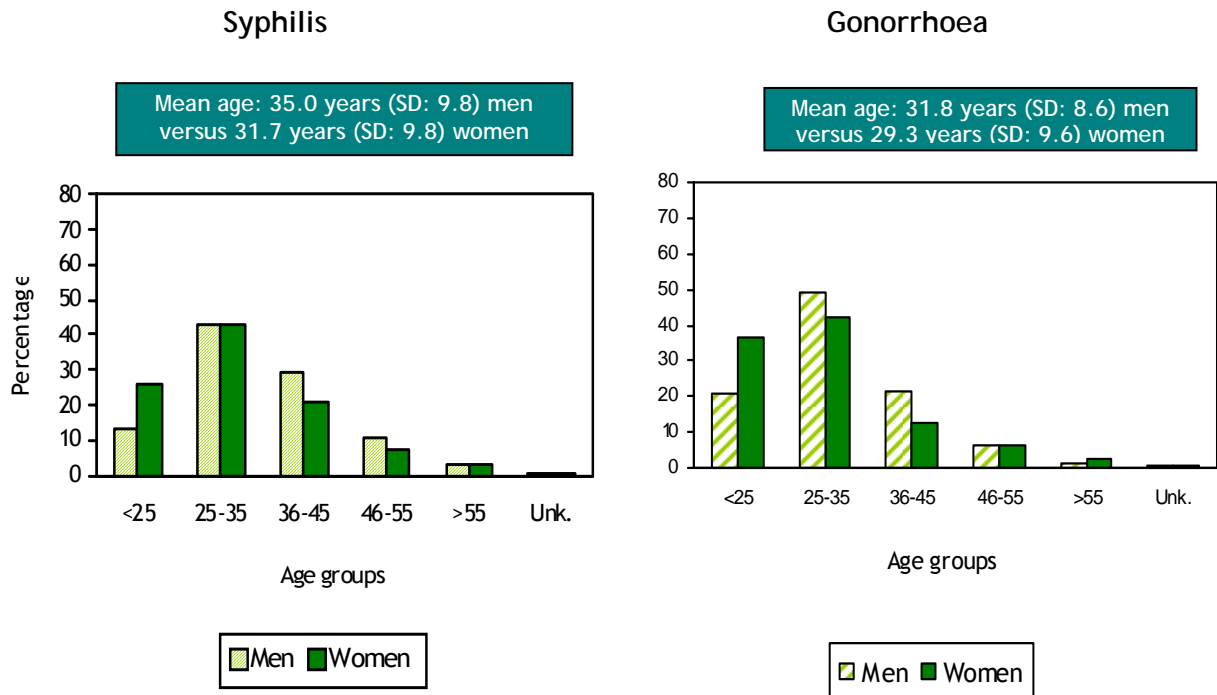
The sociodemographic pattern shows a predominance of men; the mean age for syphilis diagnoses was 34.6 years (SD: 9.9) and for gonorrhoea diagnoses it was 31.4 years (SD: 8.8). About 47.7% of patients had secondary or higher level of education (Table 5).

Table 5. Distribution of syphilis and gonorrhoea diagnoses by sociodemographic characteristics

| Variables                | Syphilis     |            | Gonorrhoea   |            |
|--------------------------|--------------|------------|--------------|------------|
|                          | No.          | Percentage | No.          | Percentage |
| <b>Sex</b>               |              |            |              |            |
| Man                      | 1,214        | 86.0       | 1,387        | 86.3       |
| Woman                    | 185          | 13.1       | 215          | 13.4       |
| Transgender female       | 13           | 0.9        | 5            | 0.3        |
| <b>Age</b>               |              |            |              |            |
| <=20 years               | 65           | 4.6        | 117          | 7.3        |
| 21-25 years              | 191          | 13.5       | 321          | 20.0       |
| 26-30 years              | 311          | 22.0       | 404          | 25.1       |
| 31-35 years              | 245          | 17.4       | 306          | 19.0       |
| 36-40 years              | 226          | 16.0       | 217          | 13.5       |
| 41-45 years              | 177          | 12.5       | 112          | 7.0        |
| 46-50 years              | 92           | 6.5        | 64           | 4.0        |
| 51-55 years              | 52           | 3.7        | 33           | 2.1        |
| 56-60 years              | 26           | 1.8        | 13           | 0.8        |
| >60 years                | 20           | 1.4        | 9            | 0.6        |
| Unknown                  | 7            | 0.5        | 11           | 0.7        |
| <b>Educational level</b> |              |            |              |            |
| No education             | 20           | 1.4        | 22           | 1.4        |
| Primary                  | 387          | 27.4       | 330          | 20.5       |
| Secondary                | 375          | 26.6       | 415          | 25.8       |
| Higher                   | 286          | 20.3       | 361          | 22.5       |
| Unknown                  | 344          | 24.4       | 479          | 29.8       |
| <b>TOTAL</b>             | <b>1,412</b> | <b>100</b> | <b>1,607</b> | <b>100</b> |

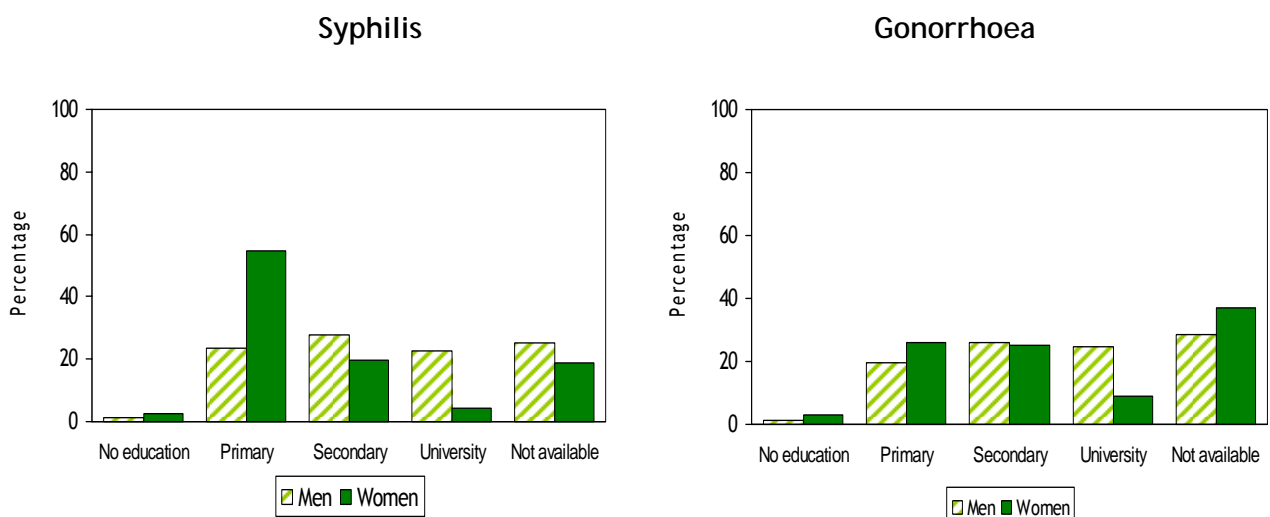
Differences between men and women were found by age: for new diagnoses of both syphilis and gonorrhoea, women were younger than men (Figure 1).

Figure 1. Distribution of syphilis and gonorrhoea diagnoses by age and sex



Differences in educational level by sex were also detected. In syphilis diagnoses, 50.3% of men had secondary or higher education versus 23.8% of women; for gonorrhoea diagnoses, this percentage was 50.5% in men versus 34.0% in women (Figure 2).

Figure 2. Distribution of syphilis and gonorrhoea diagnoses by sex and educational level



With respect to place of birth, more than 65% of syphilis and gonorrhoea diagnoses were born in Spain; those who were natives of other countries were primarily from Latin America (Table 6).

Table 6. Distribution of syphilis and gonorrhoea diagnoses by place of birth

| Place of birth                           | Syphilis     |            | Gonorrhoea   |            |
|--|--------------|------------|--------------|------------|
|  | No.          | Percentage | No.          | Percentage |
| Spain                                    | 925          | 65.5       | 1,117        | 69.5       |
| Other countries                          | 481          | 34.1       | 484          | 30.1       |
| Western Europe                           | 62           | 4.4        | 67           | 4.2        |
| Eastern Europe                           | 74           | 5.2        | 72           | 4.5        |
| Latin America                            | 296          | 21.0       | 249          | 15.5       |
| Sub-Saharan Africa                       | 8            | 0.6        | 24           | 1.5        |
| North Africa                             | 29           | 2.1        | 52           | 3.2        |
| Other/Foreign national of unknown origin | 12           | 0.8        | 20           | 1.2        |
| Unknown                                  | 6            | 0.4        | 6            | 0.4        |
| <b>TOTAL</b>                             | <b>1,412</b> | <b>100</b> | <b>1,607</b> | <b>100</b> |

For syphilis and gonorrhoea diagnoses, the proportion of cases in women was larger in persons from other countries than in those from Spain (Figure 3). Differences in age at diagnosis were also observed by place of birth; foreign nationals were younger than those from Spain: 31.9 years vs. 36.0 respectively, for syphilis diagnoses; and 29.5 years vs. 32.3 respectively for gonorrhoea diagnoses.

Figure 3. Distribution of syphilis and gonorrhoea diagnoses by place of birth and sex





### b) Clinical characteristics of new diagnoses of infectious syphilis and gonorrhoea

Most syphilis and gonorrhoea diagnoses exhibited clinical manifestations at the time of diagnosis; between 9.5% and 14.0% of diagnoses were made due to a screening, except for early latent syphilis in which this percentage reached 57.4% (Table 7).

Table 7. Distribution of syphilis and gonorrhoea diagnoses by reason for consultation

| Reason for consultation | Primary syphilis |            | Secondary syphilis |            | Early latent syphilis |            | Gonorrhoea   |            |
|-------------------------|------------------|------------|--------------------|------------|-----------------------|------------|--------------|------------|
|                         | No.              | %          | No.                | %          | No.                   | %          | No.          | %          |
| Clinical manifestations | 338              | 70.4       | 373                | 65.9       | -                     | -          | 1,159        | 72.1       |
| Screening               | 55               | 11.5       | 79                 | 14.0       | 210                   | 57.4       | 152          | 9.5        |
| Contact Investigation   | 30               | 6.3        | 18                 | 3.2        | 50                    | 13.7       | 146          | 9.1        |
| Unknown                 | 57               | 11.9       | 96                 | 17.0       | 106                   | 29.0       | 150          | 9.3        |
| <b>TOTAL</b>            | <b>480</b>       | <b>100</b> | <b>566</b>         | <b>100</b> | <b>366</b>            | <b>100</b> | <b>1,607</b> | <b>100</b> |

The site of infection was anorectal in 9.1% of diagnoses of primary syphilis, 4.3% of secondary syphilis and 14.2% of gonorrhoea diagnoses. Oropharynx was affected in 10.2% of gonorrhoea diagnoses, 5.7% of primary syphilis, and 3.8% of secondary syphilis diagnoses (Table 8).

Table 8. Distribution of diagnoses of primary and secondary syphilis and gonorrhoea by site of infection #

| Site          | Primary syphilis (N=405) |            | Secondary syphilis (N=444) |            | Gonorrhoea (N=1.399) |            |
|---------------|--------------------------|------------|----------------------------|------------|----------------------|------------|
|               | No.                      | Percentage | No.                        | Percentage | No.                  | Percentage |
| Anorectal     | 37                       | 9.1        | 19                         | 4.3        | 198                  | 14.2       |
| Oropharyngeal | 23                       | 5.7        | 17                         | 3.8        | 143                  | 10.2       |
| Cervical      | 4                        | 1.0        | 4                          | 0.9        | 131                  | 9.4        |
| Urethral      | —                        | —          | —                          | —          | 1,011                | 72.3       |
| Penis         | 229                      | 56.5       | 19                         | 4.3        | —                    | —          |
| Palmoplantar  | —                        | —          | 30                         | 6.8        | —                    | —          |
| Exanthema     | —                        | —          | 182                        | 41.0       | —                    | —          |
| Other         | 26                       | 6.4        | 18                         | 4.1        | 6                    | 0.4        |

\*NOTE: The same patient may present more than one site. Percentages calculated on the total number of new diagnoses of primary syphilis, secondary syphilis and gonorrhoea for which information was available.

# No information from one centre for the period June 2005-December 2007

For 67.8% of syphilis diagnoses and 65.8% of gonorrhoea diagnoses this was their first consultation at the centre where the diagnosis was made, while the remaining have attended the centre more than once (Table 9); 37.0% of syphilis diagnoses and 38.0% of gonorrhoea diagnoses reported having had a previous STI (Table 10).

Table 9. Distribution of syphilis and gonorrhoea diagnoses by type of visit #

| Type of visit    | Syphilis     |            | Gonorrhoea   |            |
|------------------|--------------|------------|--------------|------------|
|                  | No.          | Percentage | No.          | Percentage |
| First time visit | 706          | 67.8       | 835          | 65.8       |
| Repeat visit     | 285          | 27.4       | 383          | 30.2       |
| Unknown          | 50           | 4.8        | 51           | 4.0        |
| <b>TOTAL</b>     | <b>1,041</b> | <b>100</b> | <b>1,269</b> | <b>100</b> |

# No information from one centre

Table 10. Distribution of syphilis and gonorrhoea diagnoses by history of STI #

| History of STI | Syphilis     |            | Gonorrhoea   |            |
|----------------|--------------|------------|--------------|------------|
|                | No.          | Percentage | No.          | Percentage |
| Yes            | 439          | 37.0       | 532          | 38.0       |
| No             | 575          | 48.4       | 734          | 52.5       |
| Unknown        | 173          | 14.6       | 133          | 9.5        |
| <b>TOTAL</b>   | <b>1,187</b> | <b>100</b> | <b>1,399</b> | <b>100</b> |

# No information from one centre for the period June 2005-December 2007

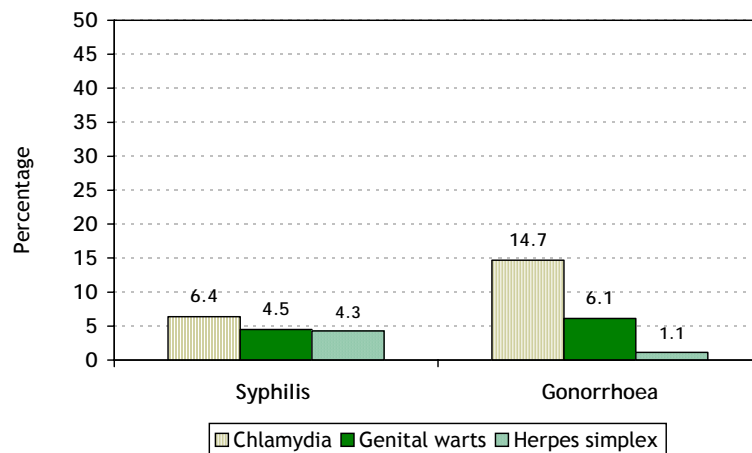
Information was collected on the concurrent diagnoses of other STIs besides HIV infection. Of the 1,041 syphilis diagnoses with available information, 203 (19.5%) also had another infection; with respect to gonorrhoea, 305 of 1,269 diagnoses with available information (24.0%) had other STIs. Almost 10% of syphilis and gonorrhoea diagnoses had two or more additional STIs (Table 11). The prevalence of chlamydia-gonorrhoea coinfection was 14.7% and of chlamydia-syphilis coinfection was 6.4%; the prevalences of infection with genital warts and herpes simplex were lower (Figure 4).

Table 11. Distribution of syphilis and gonorrhoea diagnoses by presence of other STIs diagnosed concurrently #

| STI diagnosed concurrently                                | Syphilis   |             | Gonorrhoea |             |
|---|------------|-------------|------------|-------------|
|   | No.        | Percentage  | No.        | Percentage  |
| <b>- 1 concurrent STI:</b>                                |            |             |            |             |
| Chlamydia   | 56         | 27.6        | 166        | 54.4        |
| Genital warts   | 37         | 18.2        | 61         | 20.0        |
| Herpes simplex  | 38         | 18.7        | 9          | 3.0         |
| Hepatitis B   | 9          | 4.4         | 11         | 3.6         |
| Trichomoniasis  | 7          | 3.4         | 1          | 0.3         |
| Molluscum   | —          | —           | 2          | 0.7         |
| Other STI   | 36         | 17.7        | 25         | 8.2         |
| <b>TOTAL</b>  | <b>183</b> | <b>90.1</b> | <b>275</b> | <b>90.2</b> |
| <b>- 2 concurrent STIs:</b>                               |            |             |            |             |
| Chlamydia + other STI                                     | 9          | 4.4         | 19         | 6.2         |
| Genital warts + molluscum                                 | 1          | 0.5         | 3          | 1.0         |
| Genital warts + herpes simplex                            | 3          | 1.5         | 2          | 0.7         |
| Genital warts + hepatitis B                               | 1          | 0.5         | —          | —           |
| Genital warts + gardnerella                               | —          | —           | 1          | 0.3         |
| Hepatitis B + hepatitis C                                 | 1          | 0.5         | 1          | 0.3         |
| Hepatitis B + herpes simplex                              | 1          | 0.5         | —          | —           |
| Herpes simplex + gardnerella                              | 1          | 0.5         | 1          | 0.3         |
| Herpes simplex + hepatitis C                              | —          | —           | 1          | 0.3         |
| <b>TOTAL</b>  | <b>17</b>  | <b>8.4</b>  | <b>28</b>  | <b>9.2</b>  |
| <b>- 3 concurrent STIs:</b>                               |            |             |            |             |
| Chlamydia + genital warts + pediculosis pubis             | 1          | 0.5         | —          | —           |
| Genital warts + herpes simplex + hepatitis B              | 1          | 0.5         | —          | —           |
| Chlamydia + trichomoniasis + genital warts                | 1          | 0.5         | 1          | 0.3         |
| Chlamydia + genital warts + <i>Ureaplasma urealyticum</i> | —          | —           | 1          | 0.3         |
| <b>TOTAL</b>  | <b>3</b>   | <b>1.5</b>  | <b>2</b>   | <b>0.6</b>  |
| <b>TOTAL</b>  | <b>203</b> | <b>100</b>  | <b>305</b> | <b>100</b>  |

# No information from one centre

Figure 4. Prevalence of coinfection with other STIs in syphilis and gonorrhoea diagnoses



Excluding the 75 cases (5.3%) with no information on HIV status, 22.1% of syphilis diagnoses were coinfecting with HIV. Gonorrhoea/HIV coinfection was 10.1% after excluding the 257 cases (16.0%) with no information (Table 12). Most of the coinfecting cases (65.9%) already knew their HIV status before the diagnosis of the current episode of syphilis and/or gonorrhoea.

Table 12. Distribution of syphilis and gonorrhoea diagnoses by coinfection with HIV

| HIV status   | Syphilis     |            | Gonorrhoea   |            |
|--------------|--------------|------------|--------------|------------|
|              | No.          | Percentage | No.          | Percentage |
| HIV +        | 295          | 20.9       | 137          | 8.5        |
| HIV -        | 1,042        | 73.8       | 1,213        | 75.5       |
| Unknown      | 75           | 5.3        | 257          | 16.0       |
| <b>TOTAL</b> | <b>1,412</b> | <b>100</b> | <b>1,607</b> | <b>100</b> |

### c) Mechanisms of transmission and risk situations for new diagnoses of infectious syphilis and gonorrhoea

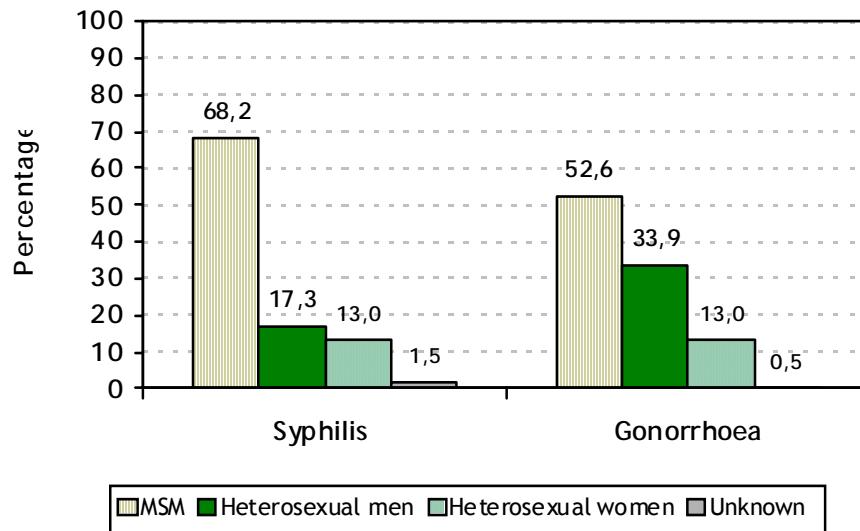
The most frequent transmission mechanism was homosexual relations between men, followed by heterosexual and bisexual relations (Table 13).

Table 13. Distribution of syphilis and gonorrhoea diagnoses by mechanism of transmission

| Mechanism of transmission                    | Syphilis     |            | Gonorrhoea   |            |
|--|--------------|------------|--------------|------------|
|  | No.          | Percentage | No.          | Percentage |
| Unprotected homosexual relations between men | 890          | 63.0       | 791          | 49.2       |
| Unprotected heterosexual relations           | 428          | 30.3       | 753          | 46.9       |
| Unprotected bisexual relations               | 73           | 5.2        | 57           | 3.5        |
| Unknown                                      | 21           | 1.5        | 6            | 0.4        |
| <b>TOTAL</b>                                 | <b>1,412</b> | <b>100</b> | <b>1,607</b> | <b>100</b> |

Transmission between men who have sex with men (MSM)), which includes homosexual and bisexual men, constituted most syphilis and gonorrhoea diagnoses; it is notable that one-third of the gonorrhoea cases occurred in heterosexual men (Figure 5).

Figure 5. Distribution of syphilis and gonorrhoea diagnoses by mechanism of transmission and sex



About one-third of syphilis and gonorrhoea diagnoses in MSM were attributed to oral sex (Table 14).

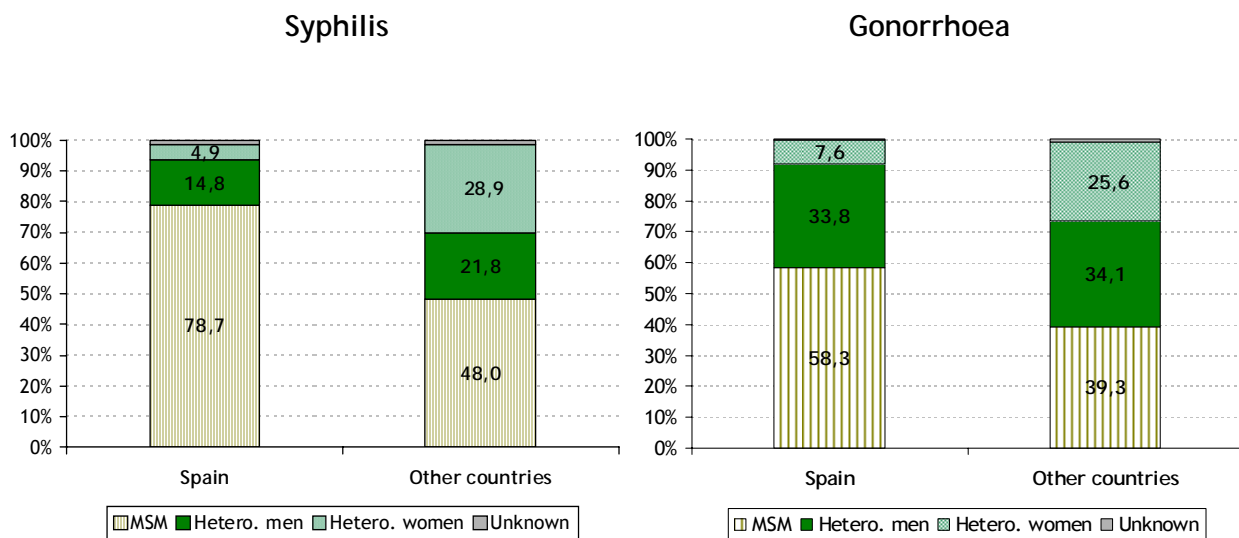
Table 14. Distribution of syphilis and gonorrhoea diagnoses by sexual practice #

| Sexual practice                  | Syphilis   |            | Gonorrhoea |            |
|----------------------------------|------------|------------|------------|------------|
|                                  | No.        | Percentage | No.        | Percentage |
| <b>Men who have sex with men</b> |            |            |            |            |
| Anal                             | 36         | 5.7        | 68         | 11.2       |
| Oral                             | 183        | 28.8       | 220        | 36.2       |
| Anal+Oral                        | 352        | 55.4       | 285        | 47.0       |
| Unknown                          | 64         | 10.1       | 34         | 5.6        |
| <b>TOTAL</b>                     | <b>635</b> | <b>100</b> | <b>607</b> | <b>100</b> |
| <b>Heterosexuals</b>             |            |            |            |            |
| Vaginal                          | 137        | 35.5       | 175        | 26.6       |
| Anal                             | 1          | 0.3        | 4          | 0.6        |
| Oral                             | 10         | 2.6        | 104        | 15.8       |
| Vaginal+Anal                     | 10         | 2.6        | 20         | 3.0        |
| Vaginal+Oral                     | 122        | 31.6       | 263        | 40.0       |
| Anal+Oral                        | 2          | 0.5        | 6          | 0.9        |
| Vaginal+Anal+Oral                | 24         | 6.2        | 39         | 5.9        |
| Unknown                          | 80         | 20.7       | 47         | 7.1        |
| <b>TOTAL</b>                     | <b>386</b> | <b>100</b> | <b>658</b> | <b>100</b> |

# No information from one centre

Differences were seen in the mechanism of transmission of both STIs by place of birth; whereas in Spaniards the main mechanism of syphilis transmission was sexual relations between men, in patients from other countries almost half of the cases were produced in heterosexuals. With regard to gonorrhoea, 58.3% of the cases in Spaniards occurred in MSM while in foreign nationals this proportion was 39.3% (Figure 6).

Figure 6. Distribution of syphilis and gonorrhoea diagnoses by place of birth and mechanism of transmission



In the analysis of the prevalence of coinfection with HIV in these STIs by mechanism of transmission, higher prevalences were seen in MSM than in heterosexuals (Table 15).

Table 15. Prevalence of HIV infection in syphilis and gonorrhoea diagnoses by mechanism of transmission

| Mechanism of transmission | Syphilis           |                    | Gonorrhoea         |                    |
|---------------------------|--------------------|--------------------|--------------------|--------------------|
|                           | Total no. of cases | HIV prevalence (%) | Total no. of cases | HIV prevalence (%) |
| Men who have sex with men | 963                | 28.1               | 845                | 14.8               |
| Heterosexual men          | 244                | 5.3                | 544                | 1.7                |
| Heterosexual women        | 184                | 3.3                | 209                | 1.0                |

In 32 (3.5%) of the 922 syphilis diagnoses with available information and in 45 (3.8%) of the 1,194 gonorrhoea diagnoses with information, STI acquisition was attributed to condom accident. With respect to the country where the infection was probably acquired, in 6.1% of syphilis diagnoses and in 1.9% of gonorrhoea diagnoses, this occurred outside of Spain.

The most frequent risk situation for contracting one of these STIs was sexual relations with a casual partner, followed by relations with a steady partner. About 9.8% of syphilis and 7.7% of gonorrhoea diagnoses were sex workers; contact with a sex worker was present as a risk situation in 7.1% of syphilis and 9.6% gonorrhoea diagnoses (Table 16).

Table 16. Distribution of syphilis and gonorrhoea diagnoses by risk situations for acquiring STI

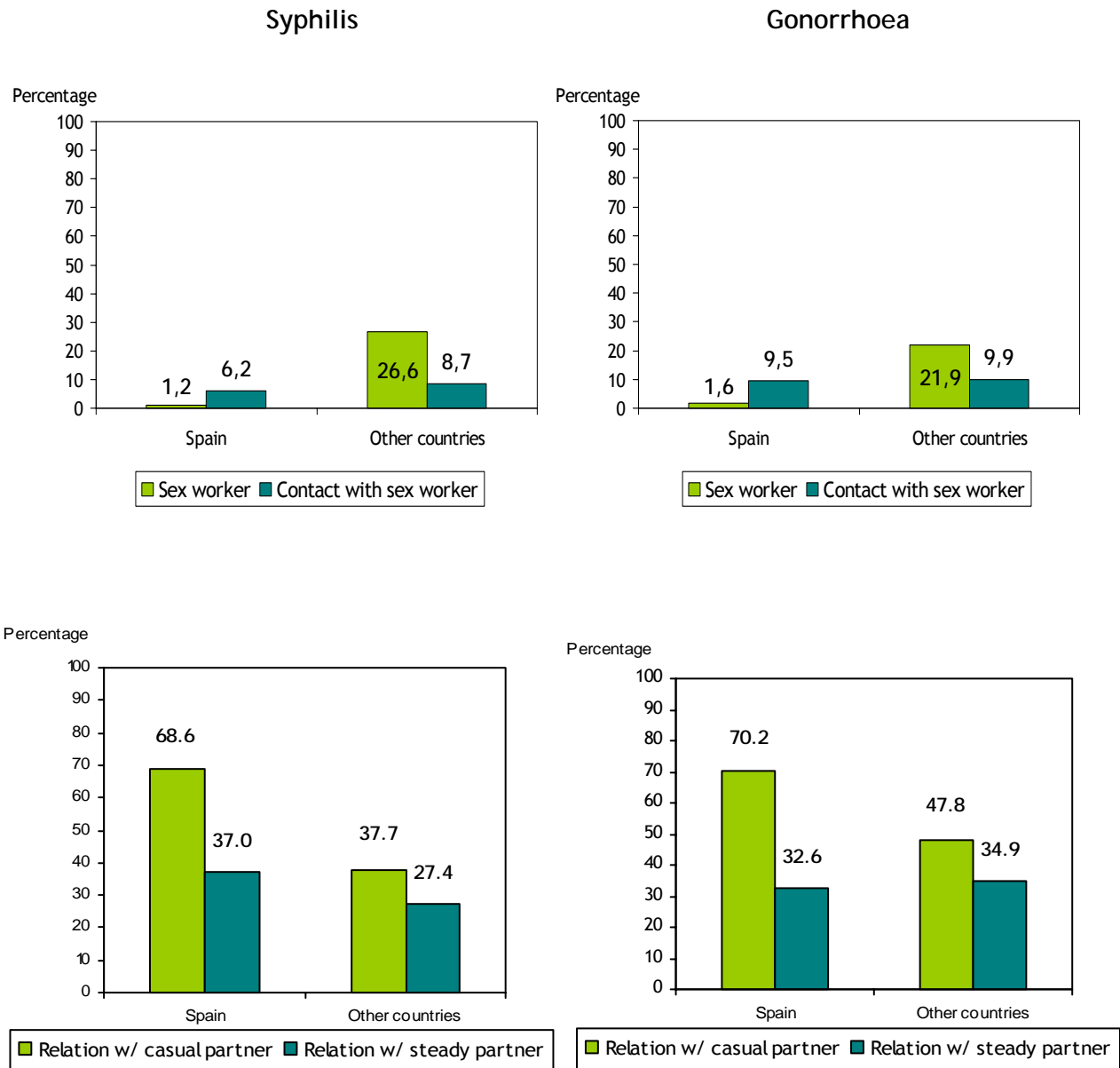
| Risk situations*                 | Syphilis |            | Gonorrhoea |            |
|----------------------------------|----------|------------|------------|------------|
|                                  | No.      | Percentage | No.        | Percentage |
| Sex worker                       | 139      | 9.8        | 124        | 7.7        |
| Contact with sex worker          | 100      | 7.1        | 155        | 9.6        |
| Relation with a casual partner & | 694      | 58.5       | 895        | 64.0       |
| Relation with a steady partner & | 402      | 33.9       | 465        | 33.2       |

\*NOTE: The same patient can have more than one risk situation.  
& No information from one centre for the period June 2005-December 2007

In analysing the most frequent risk situations, significant differences are seen by place of birth. In both syphilis and gonorrhoea diagnoses, the proportion of persons who engage in sex work was higher among foreign nationals than in Spaniards.

Conversely, the percentage of syphilis and gonorrhoea diagnoses in which unprotected relations with a casual partner were involved was higher in Spaniards than in foreigners; in syphilis diagnoses, but not those of gonorrhoea infection, the proportion of diagnoses attributed to relations with a steady partner was higher among Spaniards. No differences were found in the percentage of clients of sex workers by place of birth (Figure 7).

Figure 7. Distribution of syphilis and gonorrhoea diagnoses by place of birth and risk situations





The approximate number of partners in the last 12 months is shown in table 17. About 28.8% of syphilis diagnoses and 26.6% of gonorrhoea diagnoses had had over 10 partners in the last year (Table 17).

Table 17. Distribution of syphilis and gonorrhoea diagnoses by approximate number of sexual partners in the last 12 months #

| Approximate number of partners in the last 12 months | Syphilis     |            | Gonorrhoea   |            |
|--|--------------|------------|--------------|------------|
|  | No.          | Percentage | No.          | Percentage |
| 1-2  | 285          | 24.0       | 337          | 24.1       |
| 3-5  | 212          | 17.9       | 311          | 22.2       |
| 6-10   | 145          | 12.2       | 210          | 15.0       |
| 11-20  | 112          | 9.4        | 143          | 10.2       |
| Over 20  | 230          | 19.4       | 229          | 16.4       |
| Unknown  | 203          | 17.1       | 169          | 12.1       |
| <b>TOTAL</b>   | <b>1,187</b> | <b>100</b> | <b>1,399</b> | <b>100</b> |

# No information from one centre for the period July 2005-December 2007

## CONCLUSIONS

- The new diagnoses of syphilis and gonorrhoea identified in the participating centres occurred mainly in adult men, Spaniards, and persons with secondary or higher level of education. However, about one-third were from other countries, mainly from Latin America.
- Syphilis and gonorrhoea cases born outside Spain differ from Spaniards with regard to demographic characteristics in addition to transmission mechanism and risk profile.
- Most STI diagnoses were made as a result of clinical manifestations. Over one-third of syphilis and gonorrhoea diagnoses had a previous history of STI.
- About one of every five syphilis diagnoses and one of every four gonorrhoea diagnoses had another concurrent STI at the time of presentation, most frequently chlamydia and genital warts.
- Coinfection with HIV was found in 22% of syphilis diagnoses and 10% of gonorrhoea diagnoses. Most of these cases knew their HIV serostatus before these STIs were diagnosed. Differences in the prevalence of coinfection with HIV were seen by mechanism of transmission.
- The most common transmission mechanism for both syphilis and gonorrhoea was unprotected homosexual relations between men.
- About one-third of the cases of syphilis and gonorrhoea in MSM were attributed exclusively to oral sex.
- The most frequent risk situations for acquisition of these STIs were sexual relations with a casual partner.
- The results obtained in this study reflect the epidemiological situation of persons who attend the participating centres, thus they can not be considered representative of the situation in other segments of the population.

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