



## Number of cases

The year 2007 saw 360 notified gonorrhoea cases, including 329 detected by culture and reported to the Laboratory Notification System (LNS) and to the Notification System for Infectious Diseases (NSID) to the Department of Epidemiology. Nine cases were only reported to the LNS and 22 only to the NSID. In 12 of the 22 cases, the NSID notification stated that culture had been performed. The remaining ten cases were diagnosed as follows: three microscopies, two clinical diagnoses, two DNA detections, and in three cases the diagnostic method was not stated. Among the 360 cases, 297 (83%) were males. The male age range and median age was 16-76 years and 32 years, respectively, and the corresponding figures for females were 16-63 years and 24 years. Among males, 44 had also had gonorrhoea in 2003-2006, eight were recorded more than once in 2007 and six had gonorrhoea in 2003-2006 and were also recorded more than once in 2007. Three females were each recorded twice in 2007. A total of 48% of the males and 31% of the females notified to the NSID were residents of Greater Copenhagen, [Table 1](#).

**Table 1. Notified gonorrhoea cases by area, 2007**

Area	Incidence	
	Total	per 10 <sup>5</sup>
Copenhagen City	125	19.0
Copenhagen subs	31	6.1
Northern Zealand	10	2.3
Bornholm	1	2.3
Eastern Zealand	3	1.3
W & S Zealand	13	2.2
Funen	8	1.7
Southern Jutland	22	3.1
Western Jutland	8	1.9
Eastern Jutland	48	5.9
Northern Jutland	24	4.1
Other/unknown	58	-
<b>Total</b>	<b>351</b>	<b>6.4</b>

According to the NSID, the 351 notified cases comprised 284 (81%) Danish-born and 59 (17%) immigrants, including six second-generation immigrants and 12 tourists. In eight cases, six males and two females, the origin was unknown. A total of 188 (54%) of the NSID notifications were forwarded by GPs, while 145 (41%) were reported by STI clinics.

## Mode of transmission

According to the NSID, 148 Danish

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males and 31 immigrant males were infected heterosexually, while 114 Danish males (48%) and ten immigrant males (22%) were infected homosexually. For 15 Danish males (6%) and five immigrant males (11%), mode of infection was not stated. HIV infection was only found in homosexually infected males among whom 21 (17%) were HIV positive.

Among the heterosexually infected males, 64 (45%) were infected in Denmark and 65 (45%) abroad, including 27 in Thailand. In 12 cases, country of infection was unknown. Among males infected homosexually, 109 (87%) were infected in Denmark and six (5%) abroad. In 11 cases, country of infection was unknown.

Among the 62 females, 47 (76%) were Danes, 13 (20%) immigrants, and in two cases the origin was unknown. A total of 48 females (77%) were infected in Denmark and four (6%) abroad. In ten female cases, country of infection was not stated. Among the males, 52 (18%) were infected by a steady partner, 169 (58%) by a casual partner and 21 (7%) by a sex worker. In 47 cases (16%), the source of infection was not stated. Among the females, 33 (53%) were infected by a steady partner, 19 (31%) by a casual partner and in 10 (16%) cases the source of infection was not stated.

## Anatomical locations

According to LNS, 149 (44%) cases had pharyngeal swabs performed (P), of which 5% tested positive. Among the 278 males, these figures were 13% and 9% respectively, at GPs, and 93% and 3% at STI clinics. Rectal swabs (R) were performed in 45% of cases, yielding 19% positives. R swabs were performed more rarely by GPs (16%) than by STI clinics (94%). A total of 22% and 19%, respectively, tested positive. In 117 (42%) of the male gonorrhoea cases, combined urethra (U), R and P swabs were performed. Fifteen of these cases (13%) would not have been diagnosed with gonorrhoea if they had only been U swabbed. Among the 60 females, 20 (33%) had swabs taken from cervix (C), U, R and P. In seven (35%) of these cases, only the C swab tested positive. In one female gonococci were only found in a Bartholin gland abscess.

## Resistance

Reference lab tests of the 338 submitted gonococcus isolates showed

that 52% were penicillin-resistant (46% in 2006); 22% were penicillinase-producing (22% in 2006). The frequency of fluoroquinolone-resistance reached 57% (45% in 2006), and a further 6% of the strains had reduced sensitivity (7% in 2006). A total of 62% were resistant to or had reduced sensitivity to both penicillin and fluoroquinolones (51% in 2006). One strain (a pharyngeal isolate) had reduced sensitivity to ceftriaxone and was also resistant to penicillin and fluoroquinolone. The patient, who was presumably infected in Singapore, was treated with ceftriaxone 250 mg i.m., but failed to attend the control swab.

## Commentary

This report is the first to link LNS and NSID data, which allows for a better overview of the data. The 2007 gonorrhoea incidence was slightly lower than in 2006. Age and gender distribution remained unchanged, EPI-NEWS 17/07. Among heterosexually infected males, half were infected abroad, particularly in Thailand. Condoms provide good protection against gonorrhoea and other sexually transmitted diseases, and should be brought on travels if sexual contact with an unknown partner cannot be excluded. Since September 2003, when a reminder procedure was introduced, the majority of gonorrhoea cases reported to the LNS have also been notified with the NSID. In 2007, a total of 97% of LNS-reported cases were subsequently notified to the NSID. In 22 of the notified cases, culture with susceptibility testing had not been performed. Neither microscopic nor DNA-based diagnosis methods can replace susceptibility testing after culture. In the light of the increase in resistance to common antibiotics, it is essential that susceptibility testing and control swabs are performed. DNA-based methods will probably, in time, develop into a useful supplement to culture and susceptibility testing. However, control swabs should not be tested using DNA-based methods. It is important that pharyngeal and rectal swabs be taken on suspicion of gonorrhoea. Infection in these regions is usually asymptomatic and may comprise an unknown reservoir of infection if left untreated. (S. Hoffmann, DBMP, L. Finne, S. Cowan, Dept. of Epidemiology)

## Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2008 figures are preliminary)

Table 1	Week 20 2008	Cum. 2008 <sup>1)</sup>	Cum. 2007 <sup>1)</sup>
AIDS	0	12	25
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	3	4
Diphtheria	0	0	0
Food-borne diseases	5	120	180
of these, infected abroad	0	26	35
Gonorrhoea	4	128	136
Haemorrhagic fever	0	0	0
Hepatitis A	0	16	12
of these, infected abroad	0	6	6
Hepatitis B (acute)	1	6	10
Hepatitis B (chronic)	2	65	104
Hepatitis C (acute)	0	4	2
Hepatitis C (chronic)	0	138	106
HIV	3	93	109
Legionella pneumonia	0	38	31
of these, infected abroad	0	13	4
Leprosy	0	0	0
Leptospirosis	0	2	6
Measles	0	6	1
Meningococcal disease	0	22	31
of these, group B	0	10	16
of these, group C	0	4	9
of these, unspec. + other	0	8	6
Mumps	3	20	3
Neuroborreliosis	0	20	26
Ornithosis	0	1	1
Pertussis (children < 2 years)	3	42	28
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	0	1
Listeria monocytogenes	0	1	5
Streptococcus pneumoniae	0	37	50
Other aethiology	0	12	6
Unknown aethiology	0	9	9
Under registration	4	27	-
Rabies	0	0	0
Rubella (congenital)	1	1	0
Rubella (during pregnancy)	0	0	0
Shigellosis	3	27	22
of these, infected abroad	2	23	12
Syphilis	0	36	35
Tetanus	0	0	0
Tuberculosis	11	163	143
Typhoid/paratyphoid fever	1	13	4
of these, infected abroad	1	11	4
Typhus exanthematicus	0	0	2
VTEC/HUS	0	48	60
of these, infected abroad	0	18	22

<sup>1)</sup> Cumulative number 2008 and in corresponding period 2007

## Selected laboratory diagnosed infections

Number of specimens, isolates, and/or notifications received in SSI laboratories

Table 2	Week 20 2008	Cum. 2008 <sup>2)</sup>	Cum. 2007 <sup>2)</sup>
Bordetella pertussis (all ages)	1	49	55
Gonococci	7	138	133
of these, females	1	28	19
of these, males	6	110	114
Listeria monocytogenes	1	17	20
Mycoplasma pneumoniae			
Resp. specimens <sup>3)</sup>	0	44	226
Serum specimens <sup>4)</sup>	0	50	258
Streptococci <sup>5)</sup>			
Group A streptococci	1	65	57
Group B streptococci	3	46	37
Group C streptococci	0	4	8
Group G streptococci	3	47	46
S. pneumoniae	23	523	528
Table 3	Week 18 2008	Cum. 2008 <sup>2)</sup>	Cum. 2007 <sup>2)</sup>
MRSA	10	183	-
Pathogenic int. bacteria <sup>6)</sup>			
Campylobacter	29	602	793
S. Enteritidis	3	93	122
S. Typhimurium	27	223	96
Other zoon. salmonella	15	268	213
Yersinia enterocolitica	9	97	104
Verocytotoxin- producing E. coli	3	43	58
Enteropathogenic E. coli	1	29	45
Enterotoxigenic E. coli	4	102	57

<sup>2)</sup> Cumulative number 2008 and in corresponding period 2007

<sup>3)</sup> Resp. specimens with positive PCR

<sup>4)</sup> Serum specimens with pos. complement fixation test

<sup>5)</sup> Isolated in blood or spinal fluid

<sup>6)</sup> See also [www.germ.dk](http://www.germ.dk)

## Commentary, Table 3

For a couple of weeks, an unusually high number of Salmonella Typhimurium samples/notifications have been received. The cause for this increase is currently being investigated.

(Department of Epidemiology)