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CURRENT NOTES

European Communicable Disease Epidemiological Report, 2006

41/2301 The European Centre for Disease Prevention and Control (ECDC) published its first Epidemiological Report on Communicable Diseases in the European Union (EU) on 7 June.

The report contains epidemiological data on 49 communicable diseases (together with healthcare associated infections and antimicrobial resistant infections) collected from the 25 EU member states, Norway and Iceland for the year 2005. It includes a discussion on the main determinants of communicable diseases in the EU and their consequences, and suggests some of the main actions that are needed to deal with communicable diseases in the EU. The annual report on the communicable disease threats monitored in the EU also forms part of the document.

The overall incidence of a number of the communicable diseases is low in Europe with several diseases showing clear signs of steadily declining trends (e.g. measles) or of remaining relatively stable (e.g. invasive pneumococcal disease) over the past 10 years. Similarly the data show that the incidence of certain gastrointestinal infections (e.g. *Campylobacter*) and certain STIs (e.g. HIV, Chlamydia) is increasing overall, highlighting the need to continue national prevention and control programmes. It is hoped that many of the conclusions in this first report will provide a basis for health policy makers at regional, national, and international levels to plan how best to tackle the problem of communicable diseases. [See ECDC Press Release, 7 June 2007. http://www.ecdc.eu.int/Press/press_releases/070607_pr.html. Text adapted from *Health Protection Report*, 8 June 2007. <http://www.hpa.org.uk/hpr/archives/2007/news2007/news2307.htm>.]

Infection control – evidence-based bundles on trial

41/2302 The Infection Control Team at HPS is currently preparing evidence-based bundles and insertion checklists to assist, through the optimising of performance, the prevention of healthcare associated infections. These bundles are directed at the prevention of: central vascular catheter-related bacteraemias, catheter-associated UTIs, peripheral vascular catheter-associated infections, surgical site infections and ventilator-associated pneumonias. Process bundles to optimise general care related to hand hygiene and CDAD are also in development.

These bundles are required as a priority. To assist in their development, infection control teams are invited to try out one or more of the bundles. (an invitation to participate has also been issued through ICMs). If you would like to try out one or more of the bundles please contact ICQI@hps.scot.nhs.uk or phone 0141 300 1175.

Hepatitis C lookbacks - England and Scotland

41/2303 We can confirm that a review of patients' case notes in hospitals across England and Scotland (including Ayrshire & Arran, Fife, and Greater Glasgow and Clyde NHS Boards) has been carried out.

The review was an extension of two previous patient notification exercises (lookbacks) that were triggered by the discovery that two separate health care workers (HCWs) were infected with Hepatitis C and had transmitted the disease to one of their patients.

The two previous NHS lookbacks undertaken in 2005 identified five patients in total who had developed hepatitis C probably as a result of transmission of the infection from the HCWs. These were patients who underwent the most invasive procedures carried out by these healthcare workers.

In view of these transmissions, the UK Advisory Panel for Health Care Workers Infected with Blood-borne Viruses (UKAP) advised the NHS Trusts that the lookbacks should be extended to include patients who underwent all other invasive procedures as well. Trusts are notifying these patients.

Patients who have been notified have had the opportunity to contact a helpline and to receive counselling and a hepatitis C test. The risk of infection is very small and the screening is being offered by the NHS as a precautionary measure. [See also HPA Press Statement, 6 June 2007, http://www.hpa.org.uk/hpa/news/articles/press_releases/2007/070606_hepc.htm; NHS Ayrshire &

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New International Health Regulations come into force

41/2304 On 15 June 2007, the revised International Health Regulations (IHR) will come into force (<http://www.who.int/csr/ihr/en/>). Agreed by the World Health Organization (WHO) in 2005, the revised IHR provide a multilateral legal framework for how the WHO's 193 Member States handle disease outbreaks and other emergencies with potential international public health implications, including surveillance, notification and response.

The original 1969 regulations only required the notification of three diseases: cholera, plague and yellow fever. The revised IHR cover many more diseases, as well as bioterrorism attacks, chemical and laboratory accidents and other incidents. States are now required to notify WHO of all events that might constitute a public health emergency of international concern in accordance with the following criteria:

- Is the public health impact of the event serious?
- Is the event unusual or unexpected?
- Is there a significant risk of international spread?
- Is there a significant risk of international restriction(s) to travel and trade?

Outbreaks of plague in India in 1994 and Ebola in the Democratic Republic of the Congo in 1995 triggered the revision; SARS and fears of an avian influenza pandemic increased the pressure for it. Many countries have already voluntarily adopted the new regulations in advance of them coming into force on 15 June.

An article in *Eurosurveillance* monthly release in December 2006 (<http://www.eurosurveillance.org/em/v11n12/1112-222.asp>) highlighted the implications of the new regulations, specifically to European countries. [Text adapted from *Eurosurveillance Weekly*, 7 June 2007. <http://www.eurosurveillance.org/ew/2007/070607.asp#4>]

Annual Infection Control Conference & Exhibition

41/2305 The Infection Control Nurses Association (ICNA) will be holding the 37th Annual Infection Control Conference & Exhibition on 24-26 September 2007 in the Brighton Centre, Brighton.

This key infection prevention and control conference is an essential event for anyone who has the challenge of preventing and controlling infections that occur through the provision of care or in the wider community. The scientific programme has been developed to offer a unique mix of lectures, workshops and discussions on the most pertinent and topical subjects. All of which will be influential when you return to your practice. The aim of this year's conference is to evaluate the individual and organisational factors that challenge infection prevention and control during the provision of care and in the wider community, and to propose solutions that should influence future prevention strategies and measures.

This year's conference themes are:

- Monday 24th September - Infection Prevention - Challenging Behaviour
- Tuesday 25th September - Embedding culture change for Infection Prevention
- Wednesday 26th September - Informing the Outlook of Infection Prevention

For further information or to register for the conference go to the website - <http://www.3dstats.com/cgi-bin/cft.cgi?usr=00001281F0311>

Food Safety Week, 11-17 June

41/2306 Food Safety Week, which is now co-ordinated by the Food Standards Agency (FSA), started on Monday 11 June. During the week, the Agency will be warning the public that 'Bugs like it hot!' so that in warm weather it's even more important to keep food cool and safe.

In the UK, there is a surge of food poisoning cases in the summer months, with just under half of cases caused by *Salmonella* or *Campylobacter* bacteria occurring between June and September. Every year there are an estimated 860,000 food poisoning cases.

The FSA is advising people to keep food cold on picnics or days out by using a cool bag and also to remember to put food in the fridge at home. 'Bugs like it hot!' flyers, giving handy tips for consumers, can be ordered from FSA Publications by calling 0845 606 0667 or emailing foodstandards@ecgroup.co.uk. [Source: FSA Press Release, 11 June 2007. <http://www.food.gov.uk/news/newsarchive/2007/jun/buglikeithot>]

Gonococcal antibiotic surveillance in Scotland (GASS): prevalence, patterns and trends in 2006

HM Palmer, H Young and J Dave

The Scottish Bacterial Sexually Transmitted Infections Reference Laboratory (SBSTIRL) provides universal surveillance data on antimicrobial resistance for all gonococci isolated in Scotland. All cultured organisms are tested against seven antibiotics using the agar dilution method¹, and E-tests (AB Biodisk) where the minimum inhibitory concentration (MIC) exceeds the dilution series. Since April 2004 isolates have also been sequence typed using *Neisseria gonorrhoeae* multi-antigen sequence typing².

Episodes of gonorrhoea in Scotland

A total of 926 episodes of gonococcal infection were reported by SBSTIRL in 2006. Antibiotic susceptibility and sequence typing was performed on isolates from 904 episodes (97.6%). Isolates were not available for 22 episodes which were confirmed as *N. gonorrhoeae* using a nucleic acid amplification test or NAAT (Aptima, Genprobe). Table 1 shows gonorrhoea culture-positive episodes and trends by gender. Between 2000 and 2006 there was a 6.6% increase in the overall level of gonorrhoea but there were differences in trends by gender. Episodes of infection in men increased by 4.1% between 2005 and 2006 and in women decreased by 12%. The increase in episodes of infection in men was mainly in the men who have sex with men (MSM) patient group³.

General antibiotic susceptibility trends

Table 2 provides the resistance trends for the antibiotics tested over the period 2001-2006 and Table 3 gives the pattern of resistance for isolates in 2006. As there is no standardised definition of resistance for cefixime, ceftriaxone and azithromycin, a decreased susceptibility category has been used. WHO recommends that once resistance to an antibiotic is greater than 5%, continued use of that antibiotic for empiric treatment should be reconsidered. Resistance to penicillin, tetracycline and ciprofloxacin exceeded 5%, but these antibiotics are not recommended for first line use. Use of ciprofloxacin was no longer recommended after 2003 when resistance was over 5% in most NHS board areas and all patient groups⁴.

In 2006 the number of isolates resistant to one or more antibiotics decreased to 46.0% from 49.2% in 2005. This was largely due to a decrease in chromosomal resistance to tetracycline but masked a large increase in ciprofloxacin resistance. Isolates with antibiotic resistance to two or more antibiotics increased significantly from 25.1% to 33.6% ($p \leq 0.001$). There was no significant change in the level of decreased susceptibility to azithromycin. There were no isolates with reduced susceptibility to cefixime or ceftriaxone or resistance to spectinomycin.

Penicillin and tetracycline resistance

Overall penicillin resistance (plasmid and chromosomal) increased significantly from 11.0% (99/903) in 2005 to 17.4% (157/904) in 2006 ($p \leq 0.001$). There is no comparable data from England and Wales for 2006. However, the increase in Scotland between 2005-6 mirrors that seen in England and

Wales between 2004-5 where penicillin resistance increased from 11.4% to 17.9% (data from GRASP; gonococcal resistance to antimicrobials sentinel surveillance programme). Between 2005 and 2006 there was no significant change in the total plasmid mediated penicillin resistant isolates (8.1% vs 8.8%). Most (69/80, 86.3%) of the PPNG and PPNG/TRNG were resistant to ciprofloxacin (MIC ≥ 1 mg/l). Chromosomal resistance to penicillin increased from 2.9% to 8.5% from 2005 to 2006.

Overall tetracycline resistance (plasmid and chromosomal) has decreased to 39.5% (357/904) in 2006 from 48.1% (434/903) in 2005 ($p \leq 0.001$). There was no significant change in the level of strains with plasmid mediated resistance. However, strains with chromosomal resistance to both penicillin and tetracycline increased significantly ($p \leq 0.001$) from 2.9% to 8.2% from 2005 to 2006 and strains with chromosomal tetracycline resistance but no penicillin resistance have decreased significantly from 35.4% in 2005 to 21.9% in 2006 ($p \leq 0.001$). Levels of tetracycline resistance in 2005 in England and Wales were very similar to those seen in Scotland (48% overall, 7.1% plasmid mediated).

Ciprofloxacin resistance

There was a significant increase in ciprofloxacin resistance from 23.6% in 2005 to 34.8% in 2006 ($p \leq 0.001$). Sequence typing data indicates that this was mainly attributable to a small number of commonly occurring strains (see below). Although the ciprofloxacin resistance for England and Wales is not available for 2006, the level was 21.7% in 2005.

Sequence type and antibiotic resistance

Sequence types represented by five or more isolates that were associated with antibiotic resistance categories are given in Table 4. The increase in ciprofloxacin resistance and chromosomally mediated resistance to penicillin was largely due to increased transmission of isolates of the sequence type ST225 which was the most commonly occurring sequence type in 2006. An increase in the number of isolates of ST147 also contributed to the increase in ciprofloxacin resistance in 2006. ST147 was the most common sequence type seen in 2004, declined in 2005 but has increased once more in 2006. Several sequence types associated with a resistance phenotype were present in 2006 that were not previously detected in 2005; of these ST1440 was represented by the most isolates (11) and is ciprofloxacin-resistant.

Overall, the antibiotic resistance category for isolates within a given ST is very consistent. Thus, sequence typing data could be used as a predictor of antibiotic resistance for common sequence types where identification by NAAT only would preclude antibiotic sensitivity determination⁵. However, this prediction should be made with caution since selective pressures may influence the resistance phenotype over time. The proportion of ciprofloxacin-resistant isolates in any given ST (Table 4) is extremely high ($\geq 99\%$), which suggests that ciprofloxacin resistance determinants are maintained in strains even in the absence of widespread use of this antibiotic for

treatment of gonorrhoea. In contrast, the proportion of isolates with reduced susceptibility to azithromycin within a given ST is more variable (MIC range 0.03 - >256mg/L amongst isolates of ST470). This is an exception to the general trend and might be attributable to selective pressure resulting from the widespread use of azithromycin to treat genital chlamydia infections. Although there is some variability in the levels of chromosomal tetracycline and penicillin resistance within ST225, the majority of isolates have an MIC one dilution either side of the resistance category threshold.

Table 5 shows the proportion of all resistant isolates that belong to unique sequence types (i.e. a sequence type that occurred only once). Chromosomal resistance to penicillin and tetracycline and reduced susceptibility to azithromycin have a very low proportion of unique sequence types suggesting that these forms of resistance are endemic. Chromosomal resistance to ciprofloxacin is also associated with a relatively low level of unique sequence types suggesting a high level of endemicity but with a greater importation of strains than the other forms of chromosomal resistance. Plasmid mediated resistance was associated with a high proportion of isolates that belonged to unique sequence types which is consistent with importation of these strains with little onwards transmission within the UK. Only one strain with plasmid-mediated resistance was spread within Scotland (ST368, see Table 4), predominantly within Tayside and Grampian.

Summary

Continued surveillance for antibiotic resistance is essential for guiding the choice of effective therapeutic regimens for gonorrhoea. In 2006 there was a further increase in ciprofloxacin resistance and resistance to one or more antibiotics remained high. No resistance was observed to the first line antibiotics cefixime and ceftriaxone. Sequence typing data demonstrated how the spread of the common sequence types influences the antibiotic resistance pattern. In the future, the widespread introduction of molecular testing will provide a challenge in maintaining comprehensive antibiotic susceptibility surveillance in Scotland, since both culture and non-culture diagnoses will be possible.

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TABLE 1 Episodes of culture-positive gonorrhoea: isolates sent to SBSTIRL

	2000	2001	2002	2003	2004	2005	2006
Total	848	817	821	805	854	904	904
Male	602	608	617	666	635	674	702
Female	246	206	198	156	208	227	200
Unknown	0	3	6	3	11	3	2

TABLE 2: Gonococcal antibiotic resistance trends

Antimicrobial resistance	2001(n=817)	2002(n=818)	2003(n=824)	2004(n=845)	2005(n=903)	2006(n=904)
PPNG (β -lactamase positive and tetracycline MIC <16 mg/l)	2.2% (18)	2% (16)	2.3% (19)	2.5% (21)	1.1% (10)	1.3%(12)
TRNG (plasmid mediated tetracycline resistance ^a – tetracycline MIC \geq 16 mg/l and β -lactamase negative)	1.5% (12)	2.1% (17)	7.3% (60)	2.1% (18)	2.8% (25)	1.9%(17)
PPNG/TRNG (β -lactamase positive & tetracycline MIC \geq 16 mg/l)	3.5% (29)	3.7% (30)	3.3% (27)	3.1% (26)	7.0% (63)	7.5%(68)
CMRNG (Chromosomally mediated resistance to both penicillin and tetracycline – penicillin MIC \geq 2mg/l but β -lactamase negative and tetracycline MIC between 2 and 8 mg/l). Excludes all plasmid mediated resistance ^b	0.2% (2)	1.3% (11)	0.4% (3)	0.9% (8)	2.9% (26)	8.2%(74)
PenR (chromosomally mediated resistance to penicillin - MIC \geq 2mg/l but β -lactamase negative and if not TRNG tetracycline MIC < 2mg/l) ^b	0%	0.1% (1)	0.1% (1)	0%	0%	0.3%(3)
TetR (chromosomally mediated resistance to tetracycline - MIC 2 to 8 mg/l and if not PPNG penicillin MIC < 2mg/l) ^b	11.1% (91)	15.9% (130)	10.3% (85)	21.3% (180)	35.4% (320)	21.9%(198)
Ciprofloxacin intermediate resistance (MIC 0.125-0.5 mg/l)	2.8% (23)	2.1% (17)	4.1% (34)	2.2% (19)	1.6% (14)	0.8%(7)
Ciprofloxacin resistant (MIC \geq 1mg/l)	4.3% (35)	11% (89)	15.3% (126)	19.1% (161)	23.6% (213)	34.8%(315)
Azithromycin decreased susceptibility (MIC \geq 1 mg/l)	Not tested	2% (12)	2.5% (21)	2.0% (17)	2.0% (18)	2.6%(24)
Spectinomycin resistance (MIC \geq 128 mg/l)	0%	0%	0%	0%	0%	0%
Ceftriaxone decreased susceptibility (MIC \geq 0.5 mg/l)	0%	0%	0%	0%	0%	0%
Cefixime decreased susceptibility (MIC \geq 0.5 mg/l)	Not tested	Not tested	0%	0%	0%	0
Resistant to one or more antibiotics	19.5% (159)	28.7% (233)	32.0% (264)	34.0% (287)	49.2% (444)	46%(416)

a The accepted definition of plasmid mediated tetracycline resistance is a tetracycline MIC \geq 16 mg/l; however a PCR reaction for the resistance plasmid was performed on three isolates with an MIC of 8 mg/L and all three were positive

b Definitions for PenR and TetR have been clarified – this does not alter any of the calculated values for these resistance categories quoted in previous years.

TABLE 3: Antibiotic resistance patterns in isolates from 904 episodes of infection; Scotland 2006

	Plasmid resistance			Chromosomal resistance				Total
	PPNG	TRNG	PPNG/TRNG	Penicillin	Tetracycline	Ciprofloxacin	Azithromycin	
				≥ 2	≥ 2	≥ 0.125	≥ 1.0	
+	-	-	-	-	-	-	-	3
-	-	+	-	-	-	-	-	6
-	-	+	-	-	-	+	+	1
+	-	-	-	-	-	+	-	3 ^a
+	-	-	-	-	+	+	-	6 ^a
-	+	-	-	-	-	+	-	9
-	-	+	-	-	-	+	-	61
-	-	-	-	+	+	+	-	61
-	-	-	-	+	+	-	-	10
-	-	-	-	-	+	+	-	140 ^b
-	-	-	-	-	-	+	-	35 ^a
-	-	-	-	-	+	-	-	46
-	-	-	-	-	-	-	+	14
-	-	-	-	-	+	-	+	7
-	-	-	-	-	-	+	+	1
-	-	-	-	+	-	+	-	3
				+	+	+	+	2
Total	12(1.3%)	17(1.9%)	68(7.5%)	77 (8.5%)	272 (30.1)	322(35.6%)	24(2.7%)	416(46%)
2005	10 (1.1%)	25 (2.8%)	63 (7%)	26 (2.9%)	320 (35.4%)	227 (25.1%)	18 (2%)	444 (49.2%)

a 1 isolate with low-level ciprofloxacin resistance (MIC 0.125 to 0.5 mg/L)

b 4 isolates with low-level ciprofloxacin resistance (MIC 0.125 to 0.5 mg/L)

TABLE 4: Antibiotic resistance and commonly occurring sequence types

Resistance category	Sequence type	Number of resistant isolates 2006	Number of non-resistant isolates 2006	Total number of isolates 2005	Total number of isolates 2006
PenR	225	42	51	51	93
	437	7	0	1	7
	1009	4	3	0	7
TetR	225	79	14	51	93
	147	32	0	23	32
	649	11	3	11	14
	63	9	2	14	11
	1576	9	0	0	9
	644	8	0	12	8
	1132	8	1	5	9
	251	7	0	10	7
	437	7	0	1	7
	5	6	3	9	24
	470	6	16	37	22
CipR	1265	5	0	1	5
	225	92	1	51	93
	147	32	0	23	32
	63	11	0	14	11
	1440	11	0	0	11
	1132	9	0	5	9
	1576	9	0	0	9
	368	8	0	1	8
	437	7	0	1	7
	1009	7	0	0	7
	1265	5	0	1	5
AzithDS	470	9	13	37	22
	1704	5	0	0	5
PPNG/TRNG	368	8	0	1	8

TABLE 5: Antibiotic resistance and sequence types that have occurred only once, 2006.

Antibiotic resistance category	No. of isolates with a unique ST	No. of isolates with a non-unique ST	% of unique isolates
PPNG	6	6	50
PPNG/TRNG	31	37	45.6
TRNG	11	6	64.7
Chromosomal resistance to penicillin	7	70	9.1
Chromosomal resistance to tetracycline	27 ^a	245	9.9
Chromosomal resistance to ciprofloxacin	65 ^b	257	20.2
Reduced susceptibility to azithromycin	2	22	8.3

^a 3 isolates contained resistance plasmids

^b 42 isolates contained resistance plasmids

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Statutory Notification of Infectious Diseases Week ended 1 June 2007

A National Statistics release

Infectious Disease	Age Group																			
	All ages		Under 1		1 - 4		5 - 14		15 - 24		25 - 34		35 - 44		45 - 64		65 & over		Not known	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Anthrax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bacillary dysentery	1	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-
Chickenpox	229	224	14	16	135	111	51	74	4	9	9	7	10	3	1	-	-	1	5	3
Cholera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diphtheria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Erysipelas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Food poisoning	93	70	1	2	11	3	8	8	9	7	10	6	16	12	27	16	10	14	1	2
Legionellosis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptospirosis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lyme Disease	1	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-
Malaria	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Measles	1	2	-	1	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Meningococcal infection	4	-	-	-	1	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-
Mumps	17	20	-	-	1	1	4	2	6	13	2	3	2	1	2	-	-	-	-	-
Paratyphoid fever	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plague	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poliomyelitis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puerperal fever	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rabies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Relapsing fever	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rubella	-	3	-	1	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Scarlet fever	1	7	-	1	-	1	4	-	-	-	-	-	-	-	1	-	-	-	-	-
Smallpox	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetanus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toxoplasmosis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tuberculosis: resp.	8	1	-	-	-	-	-	-	1	-	2	-	2	-	1	1	2	-	-	-
Tuberculosis: non-resp.	2	1	-	-	-	-	-	-	-	-	-	-	2	-	-	1	-	-	-	-
Typhoid fever	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus fever	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Viral haemorrhagic fevers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Viral hepatitis	13	4	-	-	-	-	-	-	2	-	2	3	6	-	3	1	-	-	-	-
Whooping cough	1	1	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-
TOTAL	372	335	15	21	148	118	65	88	22	30	26	21	40	16	36	20	13	16	7	5

