International surveillance network for the enteric infections - Salmonella, VTEC O157 and Campylobacter

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Summary.

Data on campylobacteriosis were supplied by 20 of the participating countries (including one nil return). In total there were 42,099 cases of *Campylobacter* infection reported to Enter-net during the fourth quarter of 2006. Rates of infection varied from 0.1 to 64.6 per 100,000 of the population. The average across the countries reporting was 11.4. However, the surveillance systems which monitor *Campylobacter* infection vary considerably. In some countries campylobacteriosis is a notifiable disease, whilst in others, surveillance is carried out on a voluntary basis. It is not therefore possible to directly compare the infection rates of different countries.

Species Differentiation.

Species differentiation among all or a sub-set of *Campylobacter* isolates was undertaken by 13 of the countries that submitted data (72.2%). In the other countries no further identification is carried out. *Campylobacter jejuni* was the predominant species identified (Table 1).

Table 1 Number and proportion of isolates by species.

Species	Number	% of total	% of those speciated
C. jejuni	8,719	20.7	89.2
C. coli	250	0.6	2.6
Other	796	1.9	8.2
Not speciated	31,392	76.8	
Total	**41,157**	**100.0**	**100.0**

Age and gender.

Just over 61% of all cases were between 15 and 64 years of age (Table 2). There were more males than females in each age group except those over 65.

	Male		Female		Not known		All	
	Freq*	%	Freq*	%	Freq*	%	Freq*	%
0-11m	544	2.1	409	1.5	13	0.0	966	3.6
1-5y	2,112	8.0	1,596	6.0	25	0.1	3,733	14.1
6-14y	1,335	5.0	921	3.5	15	0.1	2,271	8.6
15-64y	8,154	30.7	8,082	30.5	77	0.3	16,313	61.5
65y+	1,463	5.5	1,607	6.1	17	0.1	3,087	11.6
Not known	44	0.2	24	0.1	83	0.3	151	0.6
Total	13,652	51.5	12,639	47.7	230	0.9	26,521	100.0

Table 2 Age and gender breakdown of all *Campylobacter* isolates reported to Enter-net during the third quarter of 2006.

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Travel associated cases.

Travel data were available for 1,590 cases. A large number were travel-associated but with the country not stated/other (809, 50.9%). The top ten destinations were Spain (198, 12.5%), Thailand (131, 8.2%), India (82, 5.2%), Turkey (74, 4.7%), France (57, 3.6%), Morocco (50, 3.1%), Tunisia (38, 2.4%), China (25, 1.6%), Vietnam (24, 1.5%), and Greece (21, 1.3%), the remaining 83 cases (5.0%) were from 27 other countries.

Antimicrobial resistance.

Antimicrobial susceptibility testing of *Campylobacter* isolates was undertaken by eight of the countries that submitted data (44.4%). The most common antimicrobials tested against were Erythromycin, Tetracyclines and Ciprofloxacin. The proportion of resistant isolates varied by species (Table 3).

Antimicrobial agent	Number tested	Proportion of isolates resistant (%)				
		C. jejuni	*C. coli*	Other	NT	All
Gentamicin	680	3.0	1.0	0.0	0.0	2.5
Ampicillin	670	31.6	89.3	21.4	40.0	40.1
Amoxicillin/Clavulanic acid	587	0.8	2.4	0.0	None	1.0
Erythromycin	1,271	1.4	10.4	2.5	5.6	2.6
Tetracyclines	1,128	25.8	45.7	20.0	27.7	28.1
Nalidixic acid	733	44.3	61.2	96.4	30.0	48.4
Ciprofloxacin	1,372	45.1	57.0	29.3	46.3	45.9

Table 3 Antimicrobial susceptibility testing results showing the proportion (%) of isolates resistant to the testing panel of antimicrobials by species.

Number MDR (=4) by species			
Species	**No. MDR (=4)**	**Total tested**	**%**
Jejuni	81	521	15.5
Coli	36	103	35.0
Others	7	34	20.6
Total	124	658	18.8

Table 4

Multi-drug resistance results showing the proportion (%) of isolates by species that were found to be resistant to four or more different classes of antimicrobials. MDR was seen in 18.8% of *Campylobacter* isolates tested.