



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

Funded by the European Centre for Disease Control

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Enter-net Quarterly *Campylobacter* Report 2006/3
July-September 2006

Summary.

Data on campylobacteriosis were supplied by 17 of the participating countries. In total there were 18,511 cases of *Campylobacter* infection reported to Enter-net during the third quarter of 2006. Rates of infection varied from 0.1 to 72.8 per 100,000 of the population. The average across the countries reporting was 7.3. 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 12 of the countries that submitted data (70.6%). In the other countries no further identification is done. *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
<i>C. jejuni</i>	9,979	53.9	91.5
<i>C. coli</i>	199	1.1	1.8
Other	733	4.0	6.7
Not identified	7,600	41.1	
Total	18,511	100.0	100.0

Age and gender.

Just over 60% 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	386	2.1	298	1.6	18	0.1	702	3.8
1-5y	1,759	9.5	1,352	7.3	33	0.2	3,144	17.0
6-14y	1,188	6.4	858	4.6	9	0.0	2,055	11.1
15-64y	5,791	31.3	5,301	28.6	34	0.2	11,126	60.1
65y+	591	3.2	661	3.6	9	0.0	1,261	6.8
Not known	9	0.0	4	0.0	210	1.1	223	1.2
Total	9,724	52.5	8,474	45.8	313	1.7	18,511	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 are available for 2,260 cases. The majority were travel-associated but with the country not stated/other (855, 37.8%). The top ten destinations were Bulgaria (415 cases, 18.4%), Spain (272, 12.0%), Turkey (243, 10.8%), Greece (99, 4.4%), France (62, 2.7%), Poland (56, 2.5%), Tunisia (51, 2.3%), Thailand (50, 2.2%), Denmark (48, 2.1%), Slovakia (23, 1.0%), the remaining 86 cases (3.8%) were from 14 other countries.

Antimicrobial resistance.

Antimicrobial susceptibility testing of *Campylobacter* isolates was undertaken by seven of the countries that submitted data (41.2%). 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 (%)				
		<i>C. jejuni</i>	<i>C. coli</i>	Other	NT	All
Gentamicin	212	4.7	11.1	0.0	4.8	5.2
Ampicillin	209	32.9	50.0	0.0	40.0	34.9
Amoxicillin/Clavulanic acid	108	1.9	0	0.0	33.3	2.8
Erythromycin	1,148	1.5	4.2	4.8	6.2	2.2
Tetracyclines	909	19.0	25.3	16.7	27.8	20.2
Nalidixic acid	332	52.8	40.9	100.0	55.0	52.4
Ciprofloxacin	1,347	41.2	39.2	65.2	47.5	41.9

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	19	168	11.3
Coli	15	18	83.3
Others	4	21	19.0
Total	38	207	18.4

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 31.1% per cent of *Campylobacter* isolates tested