



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

Funded by the European Commission – DG SANCO

Project Team Prof Noël Gill Prof Bill Reilly Prof John Threlfall

**Enter-net Quarterly *Campylobacter* Report Jul-Sep 2005/3**

**Summary.**

Data on campylobacteriosis were supplied by twelve participating countries. In total there were 11,026 cases of *Campylobacter* infection reported to Enter-net during the third quarter of 2005. Rates of infection varied from 0.3 to 33.5 per 100,000 of the population. The average across the countries reporting was 10.2. 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, and some countries are only just introducing national reference facilities.

**Species Differentiation.**

Species differentiation among all or a sub-set of *Campylobacter* isolates was undertaken by six of the countries that submitted data (50.0%). *Campylobacter jejuni* was the predominant species identified (13.1% of the total, 92.8% of those with a species identified), *C. coli* was 0.8% of the total, 5.7% of those speciated and other types represented 0.2% of the total and 1.5% of those speciated (Table 1).

**Table 1** Number and proportion of isolates by species.

| <b>Species</b>   | <b>Number</b> | <b>% of total</b> | <b>% of those speciated</b> |
|------------------|---------------|-------------------|-----------------------------|
| <i>C. jejuni</i> | 1,439         | 13.1              | 92.8                        |
| <i>C. coli</i>   | 88            | 0.8               | 5.7                         |
| Other            | 23            | 0.2               | 1.5                         |
| Not identified   | 9,476         | 85.9              |                             |
| <b>Total</b>     | <b>11,026</b> | <b>100.0</b>      | <b>100.0</b>                |

**Age and gender.**

Over 66% of all cases were between 15 and 64 years of age (Table 2). There were more males than females in each age group with the exception of those over 65y.

| <b>Age group</b> | <b>Males (%)</b>    | <b>Females (%)</b>  | <b>Unknown (%)</b> | <b>Total (%)</b>      |
|------------------|---------------------|---------------------|--------------------|-----------------------|
| <1 year          | 171 (1.6)           | 124 (1.1)           | 2 (0.0)            | 297 (2.7)             |
| 1-5 years        | 752 (6.8)           | 585 (5.3)           | 10 (0.1)           | 1,347 (12.2)          |
| 6-14 years       | 526 (4.8)           | 402 (3.6)           | 8 (0.0)            | 936 (8.5)             |
| 15-64 years      | 3,831 (34.7)        | 3,467 (31.4)        | 26 (0.2)           | 7,324 (66.4)          |
| >65 years        | 432 (3.9)           | 485 (4.4)           | 6 (0.0)            | 923 (8.4)             |
| Unknown          | 18 (0.2)            | 7 (0.1)             | 174 (1.6)          | 199 (1.8)             |
| <b>Total</b>     | <b>5,730 (52.0)</b> | <b>5,070 (46.0)</b> | <b>226 (2.0)</b>   | <b>11,026 (100.0)</b> |

**Table 2** Age and gender breakdown of all *Campylobacter* isolates reported to Enter-net during the third quarter of 2005

Scientific Co-ordinator: **Ian Fisher**  
Administrator: **Francine Stalham**

HPA Centre for Infections  
61 Colindale Ave, London NW9 5EQ, UK  
Ph: +44-20-8200-6868 Fax: +44-20-8327-7112  
Email: enter-net@hpa.org.uk

### Travel associated cases.

Travel data are available for 345 cases. The majority were travel-associated but with the country not stated (322, 93.3%). Those with a destination stated included the Czech Republic (5 cases, 1.4%), India (3, 0.9%), Romania (3, 0.9%), Poland (2, 0.6%), Russia (2, 0.6%), and the EU (2, 0.6%).

### Antimicrobial resistance.

Antimicrobial susceptibility testing of *Campylobacter* isolates was undertaken by five of the countries that submitted data (41.7%). 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 (%) |                |       |      | All  |
|-----------------------------|---------------|--------------------------------------|----------------|-------|------|------|
|                             |               | <i>C. jejuni</i>                     | <i>C. coli</i> | Other | NI   |      |
| Gentamicin                  | 179           | 0.6                                  | 0.0            | 0.0   | 0.0  | 0.6  |
| Ampicillin                  | 231           | 16.7                                 | 22.2           | 25.0  | 62.5 | 18.6 |
| Amoxicillin/Clavulanic acid | 116           | 0.0                                  | 0.0            | 33.3  | 0.0  | 0.9  |
| Erythromycin                | 1,290         | 1.7                                  | 4.1            | 22.2  | 3.3  | 2.2  |
| Tetracyclines               | 1,048         | 18.9                                 | 13.7           | 13.3  | 26.4 | 19.1 |
| Nalidixic acid              | 245           | 45.9                                 | 54.5           | 75.0  | 37.5 | 46.5 |
| Ciprofloxacin               | 1,387         | 33.6                                 | 33.3           | 70.6  | 39.2 | 34.5 |

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

Multi-drug resistance was seen in 20.5% per cent of *Campylobacter* isolates tested (Table 4).

| Number MDR ( $\geq 4$ ) by species |                      |              |      |
|------------------------------------|----------------------|--------------|------|
| Species                            | No. MDR ( $\geq 4$ ) | Total tested | %    |
| <i>Jejuni</i>                      | 21                   | 114          | 18.4 |
| <i>Coli</i>                        | 2                    | 8            | 25.0 |
| Others                             | 1                    | 2            | 50.0 |
| Total                              | 27                   | 132          | 20.5 |

**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.

This report was prepared by Ian Fisher on behalf of the Enter-net participants. Report prepared July 2006.