



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

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Project Team Prof Noël Gill Prof Bill Reilly Dr Henry Smith

Enter-net Quarterly Salmonella Report Jul - Sept 2004/3

This report gives details of the number of isolates identified by the national reference laboratories in the 4th quarter of 2004 and incorporated in the Enter-net salmonella database. Seventeen countries have supplied data. The top fifteen isolates reported this quarter are detailed in table one. Table two illustrates Salmonella drug resistance data received for the quarter. Table three gives details on multi-resistant isolates. Figure one details the serotypes

that have shown an unusual increase during the quarter. The total number of human salmonella isolates reported this quarter are 28,832 with 25,138 (87.1%) being *S. Enteritidis*, *S. Typhimurium* and *S. Virchow*.

Top 15 serotypes reported in Q4 2004 (Q4 2003)		
Serotype	Freq	%
Enteritidis	21,700 (25,004)	76.6 (76.8)
Typhimurium	2,764 (3,371)	9.9 (10.4)
Newport	306 (108)	1.1 (0.3)
Infantis	274 (222)	1.0 (0.7)
Virchow	257 (272)	0.9 (0.8)
Hadar	124 (198)	0.4 (0.6)
Typhi	123 (95)	0.4 (0.3)
Paratyphi A	122 (81)	0.4 (0.2)
Kottbus	104 (50)	0.4 (0.2)
Kentucky	99 (62)	0.4 (0.2)
Stanley	98 (70)	0.4 (0.2)
Saintpaul	92 (98)	0.3 (0.3)
Agona	81 (180)	0.3 (0.6)
Corvallis	71 (37)	0.3 (0.1)
Paratyphi B	67 (54)	0.2 (0.2)
Others	1,842 (2,661)	6.5 (8.1)
Total	28,124 (32,563)	100 (100)

Table 1

Quarterly data - major trends.

Details below refer to the twenty countries that have supplied comparable data electronically for 2004 and 2003. The total number of reports in the database shows a decrease over the same period of 2003 from 32,563 to 28,124 down 13.6% in 2004. *S. Enteritidis* (21,700, 77.1%) decreased by 13.6%, *S. Typhimurium* (2,764, 9.9%) decreased by 18.0%, *S. Virchow* (257, 0.9%), increased by 5.5%, *S. Infantis* (274, 1.0%), increased by 23.4%. Five serotypes were identified more than 100 times during the quarter; *S. Newport* (124, 0.4%), *S. Typhi* (123, 0.4%), *S. Paratyphi A*, (122, 0.4%), *S. Kottbus* (104, 0.4%), Nine other serotypes were isolated between 50 and 99 times, *S. Saintpaul*, *S. Kentucky*, *S. Stanley*, *S. Agona*, *S. Corvallis*, *S. Paratyphi B*, *S. Braenderup*, *S. Java* and *S. Thompson* (688, 2.4%)

Dec 2004 - All data are provisional and are based on the date of receipt of the strain at the reference laboratory.

Antimicrobial susceptibility testing results¹

Antimicrobial susceptibility test results were available for 3,363 cases. The majority of these are tested against the panel of 11 antimicrobials recommended by Enter-net, although not all strains are tested against each one. The frequency and percent in the categories resistant, intermediate and sensitive (as defined by each reference laboratory) are given in table 2.

Antimicrobial agent	Resistant Freq (%)	Intermed Freq (%)	Sensitive Freq (%)
Streptomycin	596 (21.9)	193 (7.1)	1,932 (71.0)
Gentamicin	50 (1.7)	66 (2.3)	2,802 (96.0)
Kanamycin	59 (1.9)	75 (2.4)	2,983 (95.7)
Ampicillin	761 (22.6)	92 (2.7)	2,503 (74.6)
Cefotaxime	6 (0.2)	4 (0.1)	2,902 (99.7)
Sulphonamides	1,365 (50.1)	2 (0.1)	2,902 (99.7)
Trimethoprim	169 (5.5)	45 (1.5)	2,879 (93.1)
Chloramphenicol	353 (10.9)	4 (0.1)	2,893 (89.0)
Tetracyclines	791 (24.2)	780 (23.8)	1,699 (51.9)
Nalidixic Acid	522 (18.2)	9 (0.3)	2,341 (81.5)
Ciprofloxacin	95 (2.8)	8 (0.2)	3,257 (96.9)

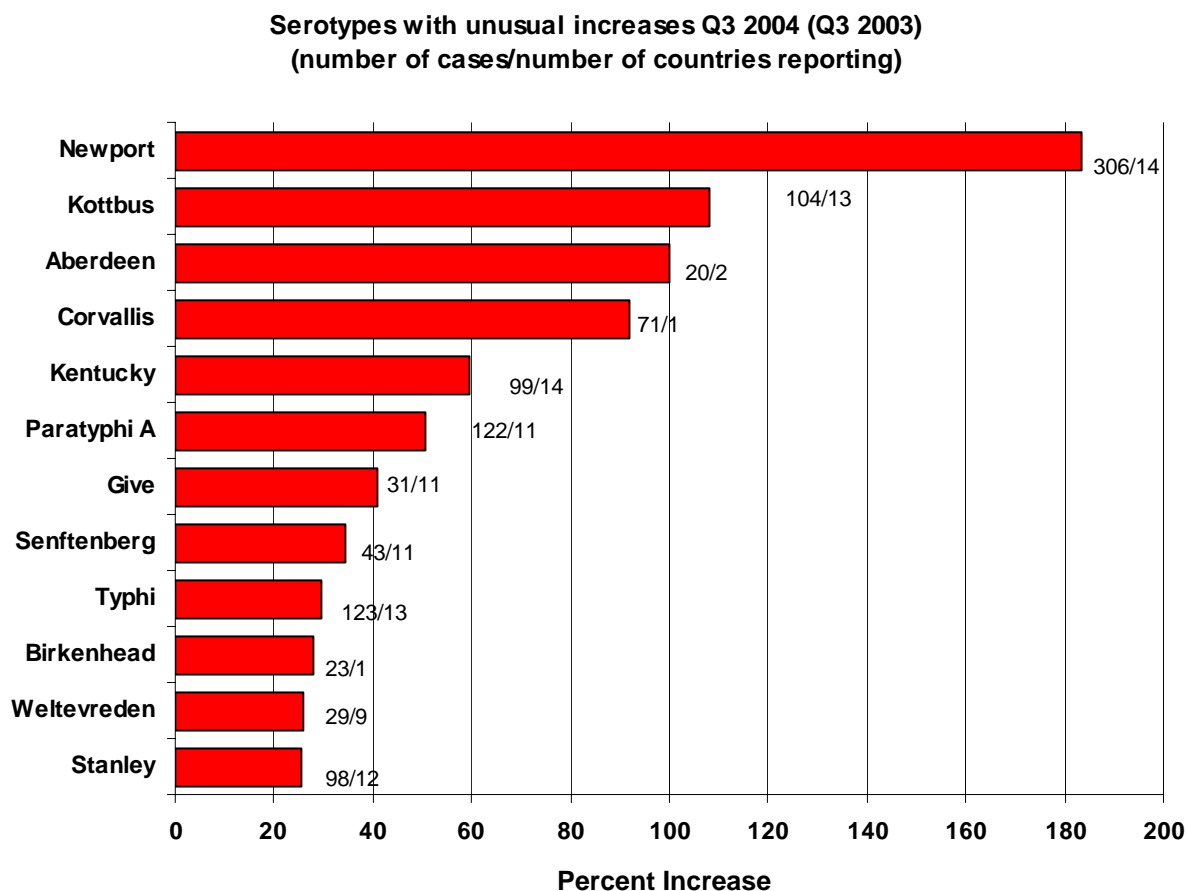
Table 2

¹ E John Threlfall, Ian ST Fisher, Linda R Ward, Helmut Tschäpe and Peter Gerner-Smidt. Harmonisation of antibiotic susceptibility testing for *Salmonella* - results of a study by 18 national reference laboratories within the European Union-funded Enter-net group. *Microb Drug Resist* 1999; **5**: 195-200.

Serotype	N° MR	Total	%
Typhimurium	325 (448)	786 (924)	41.3 (48.4)
Enteritidis	13 (22)	1,441 (2,191)	0.9 (1.0)
Hadar	13 (25)	40 (50)	32.5 (50)
Virchow	13 (11)	58 (59)	22.4 (18.6)
Kentucky	8 (10)	25 (18)	32 (55.5)
Newport	7 (2)	28 (26)	25 (7.6)
Blockley	5 (18)	9 (19)	55.5 (94.7)
Paratyphi B	4 (4)	35 (26)	11.4 (15.3)
Infantis	4 (2)	87 (38)	4.5 (5.2)
Typhi	3 (3)	25 (17)	12.0 (17.6)
Weltevreden	3 (0)	6 (1)	50.0 (0)
Haifa	2 (0)	2 (0)	100 (0)
Table 3			

Multi-drug resistance; Table three shows the total number of strains with multiple-resistance (to five or more antimicrobials) with comparative data for the same period of last year by serotype and the percent of the total for that serotype with an associated antibiogram.

Figure 1



Serotypes with unusual increases

S. Stanley – Ninety-eight cases reported this quarter. Three males, one female aged 0-11m, two males, two females 1-5y, three males, three females 6-14y, 39 males, 30 females 15-64y and one male, three females aged 64y+. Eleven cases were not known. Thirty-five cases were travel related; 17 went to Thailand. One each traveled to Malaysia, China, India the Philippines, Australia, Pakistan, Taiwan, Vietnam and Sri Lanka. Country of travel was unspecified for nine cases.

S. Weltevreden – Of the 29 cases reported there was one female aged 0-11m, one female 1-5y, two females 6-14y, 11 males and 11 females 15-64y and six cases were unknown. Six of the cases reported were related to travel. Two to India, two to Thailand and one to the Philippines.

S. Birkenhead – Twenty-three cases reported in total. One female 0-11m, three males, two females were 1-5y, one female aged 6-14y, seven males, six females 15-64y and two males, one female aged 65y+. No cases were related to travel.

S. Typhi – Of the total reported cases there were five males, two females 1-5y, 11 males, seven females 6-14y, 52 males, 31 females were 15-64y, one male, two females 65y+. Eleven cases were unstated. Fifty-three cases were travel related. Six to India, five to Indonesia. Three each traveled to Bangladesh and the Philippines. Two each traveled to Morocco and Pakistan. The remaining cases included travel to Tunisia and Nigeria.

S. Senftenberg – Forty-three cases reported this quarter. Two males 0-11m, one male, two females 1-5y, one male 6-14y, 14 males, 21 females 15-64y, one male, one female 65y+. Twenty-one cases were related to travel. Fifteen traveled to Bulgaria, five to Turkey, one to Egypt, eight cases were unspecified.

S. Give – Of the cases reported by eleven countries there were three males aged 6-14y, ten males, ten females aged 15-64y, five males and one female 65y+. Three cases were travel related.

S. Paratyphi A – One male, one female 1-5y, five males, five females 6-14y, forty-five males, forty-eight females 15-64y, one female aged 65y+ and three males unknown. Thirteen were unspecified. Sixty-one cases were travel related; country of travel was unspecified for forty-one cases, the remaining cases traveled to Bangladesh, Indonesia and India.

S. Kentucky – There were two males, one female 0-11m, two males, one female, 1-5y, two males, two females 6-14y, 35 males, 45 females were aged 15-64y and two males, one female aged 65y+. Forty-one cases were travel related; ten traveled to Turkey, eight to Egypt, one each to India, Bulgaria, Libya, Malta and Spain. Seventeen were unspecified.

S. Corvallis – Seventy-two cases reported this quarter one male, one female aged 0-11m, one male, one female 1-5y, two males, three females 6-14y, 28 males, 26 females aged 15-64y. Thirty-nine cases were travel related; eleven traveled to Bulgaria, six to Thailand, three to Malaysia, three to Turkey.

S. Aberdeen – Of the total cases reported there were six males, two females aged 0-11m, three males, one female aged 1-5y, three males, one female 6-14y, three males, three females 15-64y and two females aged 65y+. There were no travel related cases.

S. Kottbus - One hundred and six cases reported this quarter. One male 0-11m, three males, six females 1-5y, five males, two females 6-14y, 49 males and 30 females 15-64y and three males, two females were 65y+. Fifty-three cases were travel related 39 traveled to Bulgaria, two to Romania other countries traveled to were Greece, Russia and Egypt.

S. Newport – Of the cases reported this quarter, there were two males, three females 0-11m, 11 males, seven females aged 1-5y, three males, four females, 6-14y, 123 males, 104 females aged 15-64y, five males, nine females were 65y+. Forty-nine cases were travel related four traveled to Greece, three each traveled to Egypt and Thailand. Other cases traveled to Bulgaria, Estonia, Philippines, Libya, Portugal, South Africa and Cyprus. The majority of these cases were associated with outbreaks in the United Kingdom.