



# International surveillance network for The enteric infections - Salmonella and VTEC O157

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## Enter-net Quarterly Salmonella Report - 02/3 July – September 2003

### Summary.

This report gives details of the number of isolates identified by the national reference laboratories in the third quarter of 2002 and incorporated in the Enter-net salmonella database. Thirteen countries have supplied data electronically. Table one illustrates Salmonella drug resistance data received for the quarter. Table two gives further details on multi-resistant isolates and the antimicrobials to which they are resistant, table three gives further details of these multi-resistant isolates and table four provides the top fifteen serotypes reported during this period and provides comparison data for 2001 where available. The total number of human salmonella isolates reported this quarter are 21,981 with 18,466 (84.0%) being *S. Enteritidis*, *S. Typhimurium*, *S. Virchow* or *S. Hadar*.

### Quarterly data - major trends.

Details below refer to the thirteen countries that have supplied comparable data electronically for 2002 and 2001. The total number of reports in the database shows a decrease over the same period of 2001 from 22,796 to 21,981 down 3.6%. With the exception of *S. Enteritidis* the main serotypes have decreased in comparison to isolates in the 3rd quarter of 2001, *S. Enteritidis* (14,365 isolates in the 3rd quarter of 2002, 65.4% of the total) increased by 0.2%, *S. Typhimurium* (3,550, 16.2%) decreased by 7.7%, *S. Virchow* (302, 1.4%) by 28.4% and *S. Hadar* (249, 1.1%) by 18.4%. Seven other serotypes were identified more than 100 times during the quarter; *S. Infantis* (219, 1.0%), *S. Java* (177, 0.8%), *S. Agona* (171, 0.8%), *S. Braenderup* (129, 0.6%), *S. Bovismorbificans* (115, 0.5%) and *S. Saintpaul* (106, 0.5%). Fifteen other serotypes were isolated between 50 and 99 times, *S. Brandenburg*, *S. Blockley*, *S. Stanley*, *S. Typhi*, *S. Derby*, *S. Goldcoast*, *S. Heidelberg*, *S. Paratyphi A*, *S. Unnamed*, *S. Anatum*, *S. Montevideo*, *S. Paratyphi B*, *S. Oranienburg*, *S. Thompson* – 986 of the total, 4.4%. Thirty-six serotypes were reported between 10 and 49 times totaling 777, 3.5% and 161, 0.3% serotypes were reported less than 10 times, 451, 4.6%, isolates have not been serotyped at the time of report.

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All data are provisional

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## Antimicrobial susceptibility testing results<sup>1</sup>

Antimicrobial susceptibility test results were available for 3,473 cases. The majority of these are tested against the full 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 1.

Antimicrobial agent	Resistant Freq (%)	Intermed Freq (%)	Sensitive Freq (%)
Streptomycin	602 (17.8)	380 (11.2)	2,408 (71.0)
Gentamicin	44 (1.3)	403 (11.6)	3,025 (87.1)
Kanamycin	95 (2.8)	385 (11.4)	2,909 (85.8)
Ampicillin	780 (22.5)	62 (1.8)	2,631 (75.8)
Cefotaxime	14 (0.4)	10 (0.3)	3,447 (99.3)
Sulphonamides	1,648 (48.5)	121 (3.6)	1,628 (47.9)
Trimethoprim	219 (6.3)	73 (2.1)	3,175 (91.6)
Chloramphenicol	331 (9.6)	14 (0.4)	3,108 (90.0)
Tetracyclines	828 (24.0)	878 (25.5)	1,738 (50.5)
Nalidixic Acid	429 (12.6)	14 (0.4)	2,963 (87.0)
Ciprofloxacin	8 (0.2)	11 (0.3)	3,449 (99.5)

Table 1

Serotype	N° MR	Total	%	Serotype	N° MR	Total	%
Agona	1	24	4.2	Kentucky	3	4	75.0
Albany	2	3	66.7	Krefeld	1	1	100.0
Anatum	1	11	9.1	Livingstone	1	10	10.0
Blockley	20	22	90.9	Montevideo	2	6	33.3
Bovismorbificans	2	12	16.7	Panama	1	3	33.3
Bredeney	3	7	42.9	Paratyphi A	2	7	28.6
Derby	3	15	20.0	Paratyphi B	6	22	27.3
Enteritidis	14	1779	0.8	Rissen	1	2	50.0
Goldcoast	5	18	27.8	Saintpaul	9	18	50.0
Hadar	33	63	52.4	Stanley	2	14	14.3
Heidelberg	3	12	25.0	Szentes	1	1	100.0
Indiana	1	2	50.0	Typhimurium	399	992	40.2
Infantis	3	29	10.3	Virchow	13	69	18.8
Java	6	74	8.1				

Table 2

## Multi-drug resistance;

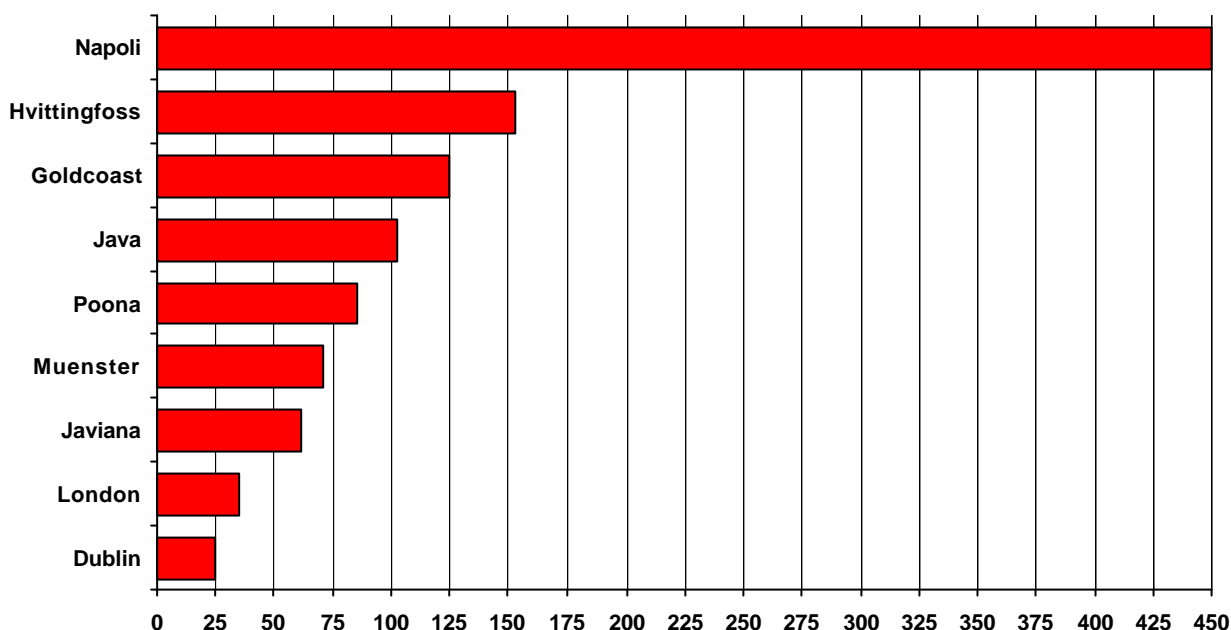
Table two shows the total number of strains with multiple-resistance (to five or more antimicrobials) by serotype and the percent of the total for that serotype with an antibiogram in the database.

Table 3 compares the data for 2002 against 2001 for those serotypes with more than 10 multi-resistant strains.

Serotype	N°	% R to Str	% R to Gen	% R to Kan	% R to Amp	% R to Cef	% R to Sul	% R to Tri	% R to Chl	% R to Tet	% R to Nal	% R to Cip
Blockley	20	100.0	0.0	100.0	25.0	0.0	35.0	5.0	70.0	100.0	100.0	0.0
(2001)	16	93.8	0.0	100.0	18.8	0.0	0.0	0.0	75.0	100.0	93.8	6.3
Enteritidis	14	57.1	7.1	0.0	78.6	0.0	92.9	71.4	14.3	85.7	28.6	0.0
(2001)	18	88.9	0.0	0.0	44.4	0.0	100.0	44.4	33.3	83.3	50.0	0.0
Hadar	33	93.9	0.0	6.1	66.7	0.0	45.5	12.1	21.2	100.0	97.0	0.0
(2001)	21	85.7	0.0	23.8	81.0	0.0	14.3	19.0	4.8	100.0	81.0	9.5
Typhimurium	399	81.7	2.3	7.8	97.5	1.0	97.0	19.8	61.9	97.7	9.5	0.0
(2001)	510	88.4	2.2	3.9	98.4	0.8	99.2	19.8	78.8	98.8	6.9	0.4
Virchow	13	84.6	0.0	7.7	53.8	38.5	100.0	100.0	30.8	53.8	100.0	0.0
(2001)	9	66.7	11.1	22.2	33.3	0.0	88.9	88.9	44.4	88.9	77.8	0.0

Table 3

Serotypes with unusual increases - Q3 2002 (Q3 2001)



**Serotypes with unusual increases this quarter;**

S. Napoli – 22 cases reported in total. Three males, one female aged 0-11m, one male aged 1-5y, one female aged 6-14y, two males and two females 15-64y, one male aged 65y+. Ages of two male and two females unreported. Two cases were associated with travel to Great Britain.

S. Hvittingfoss – 43 cases reported this quarter. Three males aged 0-11m, one male aged 1-5y, three female, one male aged 6-14y, nine males and 21 females aged 15-64y, one male and two females aged 65y+. Fourteen cases were related to travel; 12 traveled to Norway and two traveled to Australia.

S. Goldcoast Of the 72 cases reported, two were associated to travel to the Netherlands. Four males were aged 0-11m, six males and six females were aged 1-5y, 19 males and 17 females were 15-64y. Seven males and eight females 65y+. Three cases were unknown.

S. Java – 177 cases reported this quarter. Five males and four females were 0-11m, 10 males, eight females aged 1-5y, nine males 10 females aged 6-14y, 58 male and 52 females were aged 15-64y and nine males and nine females were aged 65y+. Thirty-two cases were related to travel, 14 to Great Britain, six to Denmark, four to Austria, four to Norway, one to Ireland and two to Sweden.

S. Poona – Of the 28 cases reported, there were four males, one female aged 0-11m, two males and two females aged 1-5y, one male and two females aged 6-14y, nine males and three females aged 15-64y, two males aged 65y+. Two cases were unspecified. Eight cases were associated to travel to countries such as Luxembourg, Great Britain, Scotland, Netherlands and Norway.

S. Muenster – 29 cases reported this quarter. One male, one female aged 0-11m, one male and one female aged 1-6y, nine male and 14 female aged 15-64yr. Twelve cases were associated to travel. Six traveled to Great Britain, four traveled to Norway, one traveled to Ireland and one to Austria.

**Table 4 – Enter-net Salmonella database  
Top 15 serotypes reported in Q3 2002  
(Q3 2001).**

<b>Serotype</b>	<b>Freq</b>	<b>%</b>
Enteritidis	14,365 (10,118)	65.4 (52.3)
Typhimurium	3,550 (4,020)	16.1 (20.8)
Virchow	302 (394)	1.3 (20.0)
Hadar	249 (354)	1.1 (1.8)
Infantis	219 (355)	0.9 (1.8)
Java	177 (88)	0.8 (0.4)
Agona	171 (151)	0.7 (0.8)
Braenderup	129 (122)	0.5 (0.6)
Bovismorbificans	115 (113)	0.5 (0.4)
Saintpaul	106 (104)	0.4 (0.5)
Newport	94 (172)	0.6 (0.9)
Typhi	79 (109)	0.5 (0.6)
Stanley	75 (120)	0.5 (0.6)
Brandenburg	69 (131)	0.4 (0.7)
Montevideo	55 (126)	0.2 (0.5)
Others	2,226 (6,319)	10.1 (27.7)
<b>Total</b>	<b>21,981</b> <b>(22,796)</b>	<b>100</b> <b>(100)</b>

S. Javiana – 21 cases reported this quarter. Thirteen females and six males. Two unknown. Four cases were associated to travel to Great Britain, Netherlands, Norway and Sweden.

S. London – Twenty-eight cases reported. Two males and one female aged 0-11m, one male aged 6-14y, nine males and six females aged 15-64y, three males and four females aged 65y+. Five cases were related to travel.

S. Dublin – Thirty-eight cases reported in quarter three. Four males aged 1-5y, Seventeen males and nine females aged 15-64y and five males and three females aged 65y+. Two cases were associated with travel to Australia.