



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

Funded by the European Commission – DG SANCO

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Enter-net Quarterly Salmonella Report - 01/4
October - December 2001

Summary.

This report gives details of the number of isolates identified by the national reference laboratories in the fourth quarter of 2001 and incorporated in the Enter-net salmonella database. Sixteen countries have supplied data electronically. Serotypes with unusual increases over the same period in 2000 are shown in figure one. Table one details the top fifteen serotypes isolated and gives comparable data for the same period in 2000 where available. Table two illustrates Salmonella drug resistance data received for the quarter. The total number of human salmonella isolates reported this quarter are 26,029 with 22,012 (84.5%) being *S. Enteritidis*, *S. Typhimurium*, *S. Virchow* or *S. Hadar*.

Quarterly data - major trends.

Details below refer to the sixteen countries that have supplied comparable data electronically for 2001 and 2000. The total number of reports in the database show a decrease over the same period of 2000 from 28,772 to 26,029 down 9.5%. All the main serotypes have decreased in comparison to isolates in the 4th quarter of 2000, *S. Enteritidis* (17,910 isolates in the 4th quarter of 2001, 68.8% of the total) decreased by 91%, *S. Typhimurium* (3,411 13.1%) by 16.4%, *S. Virchow* (369, 1.4%) decreased by 0.5%, and *S. Hadar* (322, 1.2%) by 38.2%. Nine other serotypes were identified more than 100 times during the quarter; *S. Infantis* (320, 1.2%), *S. Oranienburg* (297, 1.2), *S. Newport* (161, 0.6%), *S. Brandenburg* (125, 0.5), *S. Agona* (124, 0.5%), *S. Derby* (110, 0.4%), *S. Bovismorbificans* (108, 0.8%), *S. Braenderup* (107, 0.4%), and *S. Typhi* (101, 0.4%).

Fifteen other serotypes were isolated between 50 and 99 times, *S. Saintpaul*, *S. Goldcoast*, *S. Paratyphi B*, *S. Paratyphi A*, *S. Heidelberg*, *S. Blockley*, *S. Muenchen*, *S. Bredeney*, *S. Montevideo*, *S. Livingstone*, *S. Anatum*, *S. Chester*, and *S. Panama*, – 1,050 of the total, 3.6%. Forty serotypes were reported between 10 and 49 times totaling 843, 3.2% and 164 serotypes were reported less than 10 times, 372, 1.4%, 299, 1.1%, have not been fully serotyped at time of report.

April 5 2002

All data are provisional

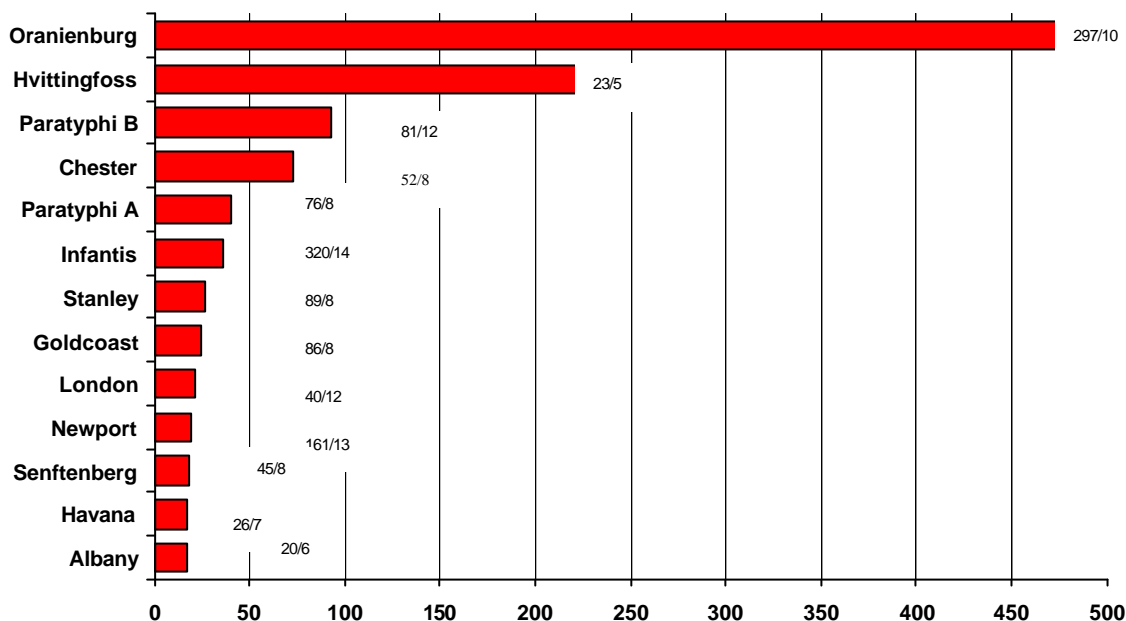
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Serotypes with unusual increases in Q4 2001



Descriptive epidemiology of the above serotypes

S. Albany – There were 20 cases reported this quarter. Fourteen cases travelled to Thailand, four travelled to Tunisia, Kenya and Spain.

S. Havana – 20 cases reported in total only two were related to travel. One to Tunisia and one travelled to Algeria. Of the cases reported there were two males and three females between 0-11m, three males aged 1-5y. Two males aged 15-64 years and one male and two females aged 65y+. Three cases were unspecified.

S. Senftenberg – Of the 45 cases reported seven were related to travel. Of the total cases reported there were four females and one males aged 0-11m, four males and one female aged between 1-5y, one female aged 6-14y, 11 males and 10 females aged 15-64y. One male and two females aged 65y+. Ten were unspecified.

S. Newport - Of the one hundred and sixty one cases reported, 38 cases were reported associated with travel. Of these cases six travelled to Kenya, eight to Thailand, eight to Pakistan, two to India, two to Egypt and three cases to Tanzania. Six males and six females were aged 0-11m, nine males and three females were aged between 1-5y. Five females were aged between 6-14 y, 40 males and 45 females were aged 15-64y and eight females were aged 65y+.

S. Goldcoast - Of the eighty-five cases reported this quarter, there were two male and two females aged 0-11m, eight males and eight females aged 1-5y, five males and two females aged 6-14y and 14 males and 12 females aged 15-64y. There were four males and 11 females aged 65y+. None of the cases were related to travel.

S. Stanley - 89 cases reported in total. Thirty-seven cases were travel related. Twenty-eight traveled to Thailand, four to India and the other cases were related to travel to Pakistan, Sweden and India.

**Table 1 – Enter-net Salmonella database
Top 15 serotypes reported in Q4 2001
(Q4 2000).**

Serotype	Freq	%
Enteritidis	17,910 (18,122)	68.8 (63.0)
Typhimurium	3,411 (3,464)	13.1 (12.0)
Virchow	369 (383)	1.4 (1.3)
Hadar	322 (343)	1.2 (1.2)
Infantis	320 (332)	1.0 (1.2)
Oranienburg	297 (51)	1.1 (0.2)
Newport	161 (177)	0.6 (0.6)
Brandenburg	125 (124)	0.5 (0.4)
Agona	124 (153)	0.5 (0.5)
Derby	110 (110)	0.4 (0.4)
Bovismorbificans	108 (108)	0.4 (0.4)
Braenderup	107 (126)	0.4 (0.4)
Typhi	101 (102)	0.4 (0.4)
Heidelberg	99 (70)	0.4 (0.2)
Blockley	97 (83)	0.4 (0.3)
Others	2,368 (5,126)	9.4 (17.5)
Total	26,029 (28,772)	100 (100)

S. Infantis - 319 cases reported in total, eight males and eleven females aged 0-11m, 17 males and 11 females aged 1-5y. There were 20 males and 14 females aged 6-14y, 56 males and fifty females aged 15-65y. Ten males and 17 females were aged 65y+. Ninety-five cases were unspecified. Of the total 20 cases were related to travel to countries such as Mexico, Cyprus, India, Jamaica, Pakistan and Spain.

S. Paratyphi A - 76 cases reported, of these 41 cases were related to travel. There was one female aged 0-11m, one male and two females aged 1-5y, five males and three females aged 6-14y. Thirty-seven males and 12 females aged 15-64y. There was one male aged 65y+.

S. Chester - There were fifty-two cases reported. Only five of these were related to travel. The countries traveled to were Ghana and Cyprus. Of the total cases reported there were six males and two females aged 0-11m, six males and six females aged 1-5y, three males aged 6-14y and nine males and 10 females aged 15-65y. One male and five females were 65y+.

S. Paratyphi B - 81 cases reported in total. Eight were travel related. Four traveled to Malaysia, two traveled to Sweden, three to India and one to Bolivia. 1 male and seven females aged 1-5y, three males and two females aged 6-14y, 14 males and 11 females were 15-64y. One male and four females were 65y+. Thirty-six cases were unspecified.

S. Hvitvingfoss - 23 cases reported this quarter. Only one related to travel. Of the total cases reported there were four males and one female aged 0-11m. One male and four females aged 1-5y, two females aged 6-14y, three males and one female aged 15-64y and one male 64y+.

S. Oranienburg

297 cases reported in total. These cases are predominantly associated with the consumption of chocolate outbreak

Antimicrobial susceptibility testing results¹

Antimicrobial agent	Resistant Freq (%)	Intermediate Freq (%)	Sensitive Freq (%)
Streptomycin	456 (23.1)	201 (10.2)	1,317 (66.7)
Gentamicin	37(1.9)	230 (11.7)	1,707 (86.5)
Kanamycin	62 (2.9)	335 (15.5)	1,763 (81.6)
Ampicillin	528 (24.3)	35 (1.6)	1,611 (74.1)
Cefotaxime	4 (0.2)	3 (0.2)	1,953 (99.6)
Sulphonamides	932 (47.2)	45 (2.3)	997 (50.5)
Trimethoprim	152 (7.0)	15 (0.1)	2,006 (92.3)
Chloramphenicol	287 (13.2)	0 (0.0)	1,886 (86.8)
Tetracyclines	559 (25.7)	416 (19.1)	1,199 (55.2)
Nalidixic Acid	278 (14.1)	2 (0.1)	1,694 (85.8)
Ciprofloxacin	12 (0.6)	4 (0.2)	2,144 (99.3)

Antimicrobial susceptibility test results were available for 2,174 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 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.