



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 - 02/2 April – June 2002

Summary Report

Summary.

This report gives details of the number of isolates identified by the national reference laboratories in the second quarter of 2002 and incorporated in the Enter-net salmonella database. Seventeen countries have supplied data electronically. Population data and the total number of isolates by country this year and travel-related infections are detailed in table one. Table two illustrates Salmonella drug resistance data received for the quarter. Table three gives further details on multi-resistant isolates and the antimicrobials to which they are resistant. Table four details the top fifteen serotypes isolated this quarter and gives comparable data for the same period in 2001 where available. The total number of human salmonella isolates reported this quarter are 13,658 with 9,976 (73.0%) being *S. Enteritidis*, *S. Typhimurium*, *S. Virchow* or *S. Hadar*.

Quarterly data - major trends.

Details below refer to the seventeen countries that have supplied comparable data electronically for 2002 and 2001. The total number of reports in the database show a decrease over the same period of 2001 from 16,520 to 13,658 down 17.3%. All the main serotypes have decreased in comparison to isolates in the 2nd quarter of 2001, *S. Enteritidis* (6,153 isolates in the 2nd quarter of 2002, 45.1% of the total) decreased by 24.6%, *S. Typhimurium* (3,138, 23.0%) by 5.5%, *S. Virchow* (343, 3.3%) decreased by 21.3%, and *S. Hadar* (342, 2.5%) by 14.9%. Six other serotypes were identified more than 100 times during the quarter; *S. Saintpaul* (222, 1.6%), *S. Infantis* (156, 1.1%), *S. Bovismorbificans* (143, 1.0%), *S. Agona* (126, 0.9%), *S. Stanley* (122, 0.9%), *S. Newport* (101, 0.7%). Sixteen other serotypes were isolated between 50 and 99 times, *S. Derby*, *S. Typhi*, *S. Heidelberg*, *S. Java*, *S. Muenchen*, *S. Anatum*, *S. Blockley*, *S. Montevideo*, *S. Paratyphi A*, *S. Brandenburg*, *S. Oranienburg*, *S. Braenderup*, *S. Birkenhead*, *S. Chester*, *S. Hvittingfoss*, and *S. Panama* – 1,173 of the total, 8.5%. Forty-seven serotypes were reported between 10 and 49 times totaling 998, 7.3% and 153, 1.1% serotypes were reported less than 10 times, 641, 4.6%, isolates have not been serotyped at the time of report.

September 19, 2002

All data are provisional

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| | |
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Antimicrobial susceptibility testing results¹

Antimicrobial susceptibility test results were available for 1,624 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.

| Antimicrobial agent | Resistant Freq (%) | Intermediate Freq (%) | Sensitive Freq (%) |
|---------------------|--------------------|-----------------------|--------------------|
| Streptomycin | 389 (26.6) | 157 (10.7) | 915 (62.6) |
| Gentamicin | 32 (2.0) | 224 (14.2) | 1,326 (83.8) |
| Kanamycin | 50 (3.4) | 291 (20.1) | 1,110 (76.5) |
| Ampicillin | 421 (26.4) | 29 (1.8) | 1,144 (71.8) |
| Cefotaxime | 14 (0.9) | 17 (1.1) | 1,573 (98.0) |
| Sulphonamides | 742 (54.3) | 121 (8.5) | 557 (39.2) |
| Trimethoprim | 141 (8.8) | 36 (2.3) | 1,420 (88.9) |
| Chloramphenicol | 214 (13.9) | 10 (0.6) | 1,321 (85.5) |
| Tetracyclines | 462 (29.7) | 500 (32.1) | 595 (38.2) |
| Nalidixic Acid | 203 (13.4) | 12 (0.8) | 1,303 (85.8) |
| Ciprofloxacin | 8 (0.5) | 1 (0.1) | 1,608 (99.4) |

Table 2

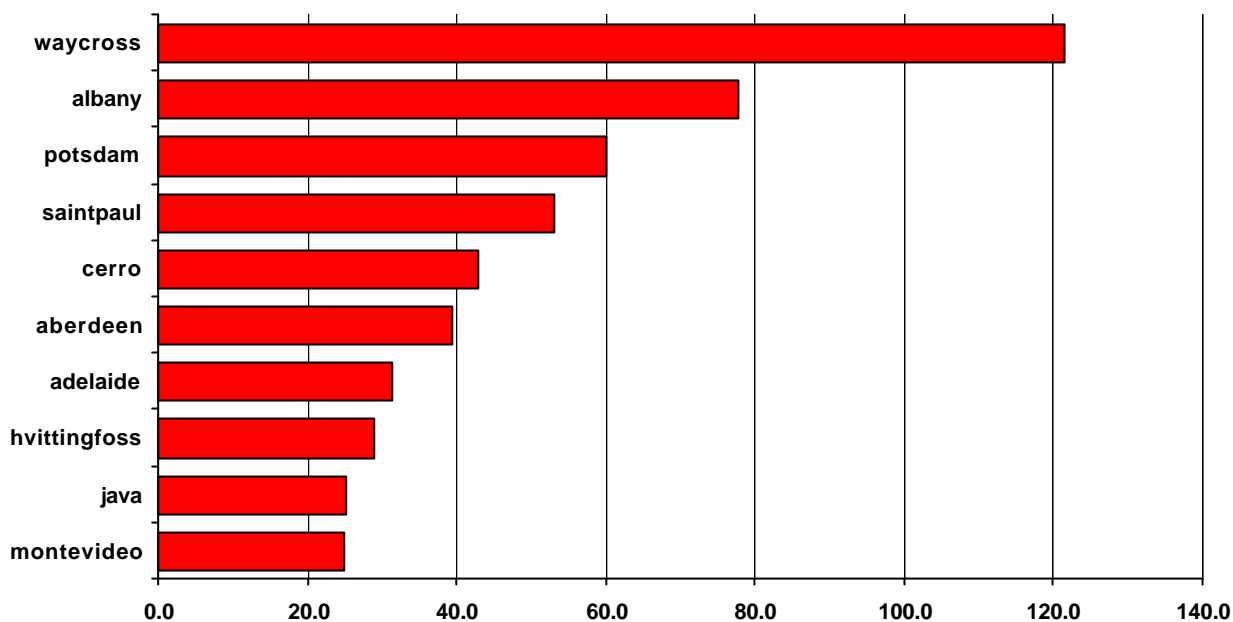
Multi-drug resistance; Table three shows the number of strains with multiple resistance (to five or more antimicrobials) by serotype and the percent resistant to each antimicrobial in the Enter-net panel.

| Serotype | No MDR (³ 5) | % R to Amp | % R to Chl | % R to Gen | % R to Kan | % R to Str | % R to Sul | % R to Tet | % R to Tm | % R to Cip | % R to Nal | % R to Cef |
|-------------|-----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|
| Agama | 2 | 100.0 | 100.0 | 0.0 | 0.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Agona | 1 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Albany | 1 | 100.0 | 100.0 | 0.0 | 0.0 | 100.0 | 100.0 | 0.0 | 100.0 | 0.0 | 100.0 | 0.0 |
| Blockley | 9 | 11.1 | 44.4 | 0.0 | 100.0 | 100.0 | 11.1 | 88.9 | 0.0 | 11.1 | 100.0 | 0.0 |
| Emek | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 0.0 |
| Enteritidis | 10 | 70.0 | 10.0 | 0.0 | 11.1 | 100.0 | 100.0 | 60.0 | 80.0 | 0.0 | 20.0 | 0.0 |
| Give | 1 | 0.0 | 0.0 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 |
| Hadar | 10 | 80.0 | 20.0 | 0.0 | 30.0 | 100.0 | 40.0 | 100.0 | 40.0 | 0.0 | 80.0 | 0.0 |
| Heidelberg | 3 | 100.0 | 0.0 | 0.0 | 0.0 | 100.0 | 0.0 | 100.0 | 0.0 | 0.0 | 100.0 | 0.0 |
| Infantis | 3 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 | 100.0 | 0.0 |
| Java | 2 | 100.0 | 100.0 | 0.0 | 0.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Mbandaka | 1 | 100.0 | 0.0 | 100.0 | 0.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 0.0 |
| Panama | 1 | 100.0 | 0.0 | 0.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 |
| Paratyphi B | 4 | 75.0 | 50.0 | 0.0 | 0.0 | 100.0 | 100.0 | 100.0 | 50.0 | 0.0 | 50.0 | 0.0 |
| Saintpaul | 6 | 100.0 | 33.3 | 0.0 | 0.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 | 66.7 | 0.0 |
| Stanley | 8 | 0.0 | 0.0 | 0.0 | 0.0 | 87.5 | 100.0 | 100.0 | 87.5 | 0.0 | 75.0 | 0.0 |
| Typhi | 3 | 100.0 | 100.0 | 0.0 | 0.0 | 66.7 | 100.0 | 100.0 | 100.0 | 0.0 | 66.7 | 0.0 |
| Typhimurium | 226 | 96.0 | 65.5 | 3.5 | 9.0 | 92.3 | 99.5 | 98.7 | 28.0 | 0.9 | 6.3 | 1.8 |
| Virchow | 2 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 | 100.0 | 0.0 | 100.0 | 0.0 |
| Worthing | 1 | 100.0 | 0.0 | 100.0 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 | 100.0 | 100.0 |

Table 3

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.

Serotypes with unusual increases - Q2 2002 (Q2 2001)



Serotypes with unusual increases this quarter;

S. Waycross – Thirty-one cases reported in total. No cases were related to travel. Six males and two females were aged 0-11m. Six males and seven females were 1-5y, two males were 6-14y, two males and two females were 14-64y, one male and one female were aged 65y+. The number of cases in the under five group was very high with 67.7% between 0-5 years, cf 27.0% in this age group for the whole database.

S. Albany – Of the 32 cases reported 15 cases were related to travel. Nine of these cases traveled to Thailand, one each traveled to Mozambique, and Turkey.

S. Potsdam – Thirty-two cases reported. two males and four females aged 0-11m. Only one case was related to travel. Two males and four females aged 0-11m, two males aged 1-5y, two males aged 6-14y, 11 males and nine females aged 15-64y , two males aged 65y+.s

S. Saintpaul – Of the 222 cases reported, 15 cases were reported as being associated to travel. Seven traveled to Sweden, four to Thailand, other countries were France, Greece, Hungary, Mexico, India, Uganda and Brazil (2). Of the total reported 13 males and six females were 0-11m, 29 males and 18 females were aged 1-5y, 10 males and 12 females were 6-14y, 46 males and 62 females were 15-64y, four males and nine females aged 65y+, 12 were unspecified.

S. Cerro – Thirty cases reported in total. None specified to be related to travel. One male and one female aged 0-11m, two males and one female aged 1-5y, seven males, one female were 16-64y. Two males, one female were aged 65y+. Five were unspecified. Twenty-eight of these cases were reported by two countries.

S. Aberdeen – Of the 46 cases reported, none were related to travel. There were twelve males and seven females aged 0-11m, nine males and four females aged 1-5y. One male and one female were 6-14y. Three males and one female aged 15-64y. Four males and one female were aged 65y+.

**Table 4 – Enter-net Salmonella database
Top 15 serotypes reported in Q2 2002
(Q2 2001).**

| Serotype | Freq | % |
|------------------|----------------------------------|----------------------------|
| Enteritidis | 6,153 (8,157) | 45.1 (49.4) |
| Typhimurium | 3,138 (3,320) | 23.0 (20.1) |
| Virchow | 343 (436) | 2.5 (2.6) |
| Hadar | 342 (402) | 2.5 (2.4) |
| Saintpaul | 222 (145) | 1.6 (0.9) |
| Infantis | 156 (200) | 1.1 (1.2) |
| Bovismorbificans | 143 (195) | 1.0 (1.2) |
| Agona | 137 (137) | 0.8 (0.8) |
| Stanley | 103 (103) | 0.6 (0.6) |
| Newport | 149 (149) | 0.9 (0.9) |
| Derby | 94 (94) | 0.6 (0.6) |
| Typhi | 95 (104) | 0.7 (0.6) |
| Heidelberg | 94 (126) | 0.7 (0.8) |
| Java | 94 (75) | 0.7 (0.5) |
| Muenchen | 77 (76) | 0.6 (0.5) |
| Others | 2,357 (2,801) | 17.2 (16.9) |
| Total | 13,658 (16,520) | 100 (100) |

S. Adelaide – Three of the 21 cases reported this quarter were related to travel. Of the total cases two traveled to Mexico, one traveled to India. Three males aged 0-11m, four males and five females aged 1-5y, two males and one female aged 6-14y, one male and three females aged 15-64y.

S. Hvittingfoss - Fifty-eight cases reported. Only two related to travel. Six males and seven females aged 0-11m, six males and eight females aged 1-5y. Two males and two females were 6-14y. 11 males and 12 females were 15-64y, three males and one female were aged 65y+.

S. Java – Ninety four cases reported this quarter. One male and three females 0-11m, twelve males and six females aged 1-5y, Six males and six females aged 6-14y, 31 males and 20 females aged 15-64y. Three females were aged 65y+. There were five unspecified. Twenty-nine cases were related to travel; six to Thailand, four to Bangladesh, three to India and Indonesia, two to Spain and Greece. The remaining cases traveled to Austria, Sweden and Cyprus.

S. Montevideo – Seventy cases reported in total. Ten were travel related. Countries traveled were Egypt, Fiji, Tunisia and Mexico. Of the cases reported one male and one female were 0-11m, five males and three females were 1-5y, three males and three females were 6-14y, 23 males and 22 females were 16-64y, one male and one female were aged 65y+. Seven were unspecified.