**Supplemental Material 1 Hospital characteristics**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Number of beds | Number of outpatients | Number of isolates of *E. coli* | Number of isolates of  ESBL-producing *E. coli* | Isolation ratio of ESBL-producing *E. coli* (%) |
|
| 676 | 244,395 | 348 | 54 | 16 |
| 478 | 219,780 | 74 | 9 | 12 |
| 400 | 190,540 | 202 | 17 | 8 |
| 360 | 101,740 | 233 | 25 | 11 |
| 354 | 246,230 | 290 | 44 | 15 |
| 325 | 165,893 | 258 | 40 | 16 |
| 300 | 95,183 | 168 | 33 | 20 |
| 261 | 156,946 | 416 | 40 | 10 |
| 261 | 83,104 | 213 | 32 | 15 |
| 250 | 99,219 | 178 | 37 | 21 |
| 240 | 78,548 | 250 | 88 | 35 |
| 210 | 41,733 | 32 | 10 | 31 |
| 174 | 46,765 | 35 | 5 | 14 |

Outpatients, *E. coli*, and ESBL-producing *E. coli* shows total number during study period.

ESBL, extended-spectrum beta-lactamase.

**Supplemental Material 2 Simple linear regression analysis between antibiotic consumption and the ESBL-producing *E. coli* isolation ratio**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Antibiotic consumption, median (range) | | |  | | DDD | | |  | | DOT | | |  | | DDD/DOT | | |
|  | DDD,  DDD/1000 PD | DOT,  DOT/1000 PD | DDD/DOT |  | *R\** | | *P\** |  | | *R\** | | *P\** |  | | *R\** | | *P\** |
| Total | 282 (97–469) | 508 (173–763) | 0.59 (0.49–0.91) |  | -0.35 | | 0.24 |  | | -0.27 | | 0.37 |  | | -0.12 | | 0.69 |
| Macrolides | 108 (44–294) | 226 (52–488) | 0.55 (0.46–1.58) |  | -0.17 | | 0.57 |  | | -0.10 | | 0.75 |  | | -0.20 | | 0.51 |
| Quinolones | 36 (17–86) | 42 (18–106) | 0.93 (0.82–0.96) |  | -0.15 | | 0.62 |  | | -0.13 | | 0.68 |  | | -0.29 | | 0.33 |
| Cephalosporins | 26 (6–46) | 38 (10–74) | 0.62 (0.40–0.70) |  | ~~-~~ | | ~~-~~ |  | | ~~-~~ | | ~~-~~ |  | | ~~-~~ | | ~~-~~ |
| First-generation cephalosporins | 2 (0–17) | 3 (0–25) | 0.72 (0.27–0.75) |  | -0.59 | | 0.05 |  | | -0.57 | | 0.04 |  | | 0.03 | | 0.93 |
| Third-generation cephalosporins | 25 (5–40) | 37 (8–67) | 0.61 (0.40–0.68) |  | 0.20 | | 0.52 |  | | 0.35 | | 0.24 |  | | -0.39 | | 0.18 |
| Penicillins | 16 (1–38) | 21 (3–38) | 0.82 (0.50–1.24) |  | -0.60 | | 0.03 |  | | -0.61 | | 0.03 |  | | -0.21 | | 0.49 |
| Tetracyclines | 12 (0–77) | 20 (0–64) | 0.74 (0.41–1.21) |  | -0.34 | | 0.25 |  | | -0.38 | | 0.20 |  | | -0.35 | | 0.26 |
| Other | 24 (6–87) | 56 (9–311) | 0.34 (0.28–1.03) |  | - | | - |  | | - | | - |  | | - | | - |

\* Simple linear regression analysis

ESBL, extended-spectrum beta-lactamase; DDD, defined daily dose; DOT, days of therapy; PD, patient-days; *R*, correlation coefficient.