**Supplementary Table 1.** Summary of Helsinki University Hospital guidelines for multidrug-resistant (MDR) bacteria screening of patients hospitalized abroad.\(^a\)

| Issue year | Foreign countries covered | Number and timing of samples | Sampling sites |
|------------|---------------------------|-----------------------------|----------------|
| 2010       | All except the Nordic countries | Discharge from hospital abroad within 2 weeks: Sampling 3 times (0, 7 and 14 days from admission) 2 weeks – 12 months after discharge abroad: MRSA samples upon arrival; MDRGNB and VRE samples on 2 separate days. | MRSA: nose, throat, groin/perineum; if needed: wounds, catheter insertion sites, urine from indwelling catheter MDRGNB: stool/rectum and throat/trachea; if needed: wounds, urine for culture from indwelling catheter VRE: stools; if needed: wounds |
| 2012       | All except the Nordic countries | Direct hospital transfer from abroad: 2 or 3 samples (MRSA and faecal MDRGNB: on days 0, 7 and 8; others: on days 0 and 7) Hospitalization abroad within 12 months: On separate days MRSA 1-2 times; MDRGNB and VRE 2 times | MRSA: nose, throat, groin/perineum; if needed: wounds, catheter/drain insertion sites, urine from indwelling catheter (if in place for over 7 days) MDRGNB: stool/rectum; if needed: trachea, wounds, urine for culture from indwelling catheter (if in place for over 7 days) VRE: stools/rectum; if needed: wounds |
| 2016       | All | All samples taken twice | MRSA: nose, throat, rectum; if needed: wounds, trachea, urine from indwelling catheter (if in place for over 7 days) MDRGNB: rectum; if needed: wounds, trachea, urine from indwelling catheter (if in place for over 7 days) VRE only in direct transfers from abroad: rectum; if needed: wounds, trachea, urine from indwelling catheter (if in place for over 7 days) |
| 2019\(^c\) | All | All samples taken twice | MRSA: nose, throat, rectum/perineum; MDRGNB: rectum; if needed: wounds, trachea, urine from indwelling catheter (if in place for over 7 days) VRE only in direct transfers from abroad: rectum |

Abbreviations: MDRGNB – multidrug-resistant Gram-negative bacteria screening package; MRSA – methicillin-resistant *Staphylococcus aureus*; VRE – vancomycin-resistant *Enterococcus* species

\(^a\) Screening is recommended in cases of hospitalization abroad lasting over 24 hours and/or if a medical procedure has been performed. The table summarizes the Helsinki University Hospital guidelines translated by the authors.

\(^b\) Applies to intubated/tracheostomized patients only.
**Supplementary Table 2.** Third-generation cephalosporin resistance of *Escherichia coli* and *Klebsiella pneumoniae*: prevalence categories for European countries used in extended-spectrum beta-lactamase-producing Enterobacterales (ESBL-PE) risk factor analyses.\textsuperscript{a,b}

|                | <10% | 10-25% | >25% |
|----------------|------|--------|------|
| Total n = 108  |      |        |      |
| (n)            |      |        |      |
| Austria (38)   |      |        |      |
| Denmark (4)    |      |        |      |
| Iceland (1)    |      |        |      |
| Netherlands (18)|     |        |      |
| Norway (14)    |      |        |      |
| Sweden (33)    |      |        |      |
| Belgium (18)   |      |        |      |
| Croatia (15)   |      |        |      |
| Estonia (366)  |      |        |      |
| France (70)    |      |        |      |
| Germany (108)  |      |        |      |
| Hungary (13)   |      |        |      |
| Ireland (4)    |      |        |      |
| Lithuania (8)  |      |        |      |
| Luxembourg (6) |      |        |      |
| Malta (9)      |      |        |      |
| Portugal (35)  |      |        |      |
| Slovenia (3)   |      |        |      |
| Spain (507)    |      |        |      |
| UK (43)        |      |        |      |
| Belgium (18)   |      |        |      |
| Croatia (15)   |      |        |      |
| Estonia (366)  |      |        |      |
| France (70)    |      |        |      |
| Germany (108)  |      |        |      |
| Hungary (13)   |      |        |      |
| Ireland (4)    |      |        |      |
| Lithuania (8)  |      |        |      |
| Luxembourg (6) |      |        |      |
| Malta (9)      |      |        |      |
| Portugal (35)  |      |        |      |
| Slovenia (3)   |      |        |      |
| Spain (507)    |      |        |      |
| UK (43)        |      |        |      |
| Bulgaria (21)  |      |        |      |
| Czech Republic (9)|  |        |      |
| Cyprus (22)    |      |        |      |
| Greece (100)   |      |        |      |
| Italy (74)     |      |        |      |
| Latvia (23)    |      |        |      |
| Poland (29)    |      |        |      |
| Romania (8)    |      |        |      |
| Slovakia (2)   |      |        |      |

\textsuperscript{a} Prevalence of third-generation cephalosporin resistance in invasive (blood and cerebrospinal fluid) *Escherichia coli* and *Klebsiella pneumoniae* isolates 2010–18. Based on data published by the European Antimicrobial Resistance Surveillance Network (EARS-Net). Missing data for Croatia 2010, Poland 2014, and Slovakia 2010.

\textsuperscript{b} Data missing (n = 171): Albania, Andorra, Bosnia and Herzegovina, Kosovo*, Monaco, Montenegro, North Macedonia, Republic of Moldova, Russian Federation, Serbia, Switzerland, Ukraine

\textsuperscript{*}This designation is without prejudice to positions on status and accords with the United Nations Security Council Resolution 1244/99 and the International Court of Justice Opinion on the Kosovo declaration of independence.
Supplementary Table 3. Methicillin-resistant *Staphylococcus aureus* (MRSA) prevalence categories for European countries used in risk factor analyses.\textsuperscript{a,b}

| Category | Total n | Countries |
|----------|---------|-----------|
| <10%     | 548     | Austria (38), Belgium (18), Croatia (15) |
| 10-25%   | 281     | Bulgaria (21), Czech Republic (9), Greece (100) |
| >25%     | 772     | Estonia (366), Germany (108), Italy (74), Malta (9) |

\textsuperscript{a} MRSA prevalence in invasive (blood and/or cerebrospinal fluid) *Staphylococcus aureus* isolates. Based on data covering 2010–18 published by the European Antimicrobial Resistance Surveillance Network (EARS-Net). Data missing for Slovakia 2010.

\textsuperscript{b} Data missing (n = 171): Albania, Andorra, Bosnia and Herzegovina, Kosovo*, Monaco, Montenegro, North Macedonia, Republic of Moldova, Russian Federation, Serbia, Switzerland, Ukraine

\*This designation is without prejudice to positions on status and accords with the United Nations Security Council Resolution 1244/99 and the International Court of Justice Opinion on the Kosovo declaration of independence.
Supplementary Table 4. Characteristics of patients treated at hospitals in European countries within 12 months before screening for multidrug-resistant organisms (MDROs) in Finland. Data are only provided for the seven countries with the highest patient numbers in Helsinki University Hospital records over 2010–19.

|                        | Spain | Estonia | Russian Federation | Germany | Greece | Italy | France |
|------------------------|-------|---------|--------------------|---------|--------|-------|--------|
| Number of patients     | 507   | 366     | 110                | 108     | 100    | 74    | 70     |
| Sex                    |       |         |                    |         |        |       |        |
| Male, n (%)            | 300 (59.2) | 178 (48.6) | 55 (50.0) | 48 (44.4) | 48 (48.0) | 39 (52.7) | 37 (52.9) |
| Female, n (%)          | 207 (40.8) | 188 (51.4) | 55 (50.0) | 60 (55.6) | 52 (52.0) | 35 (47.3) | 33 (47.1) |
| Age median (IQR)       | 68 (16) | 49.5 (37) | 47 (31)          | 40.5 (33) | 53.5 (35) | 58.5 (29) | 52.5 (35) |
| CCI median (IQR)       | 1 (3)  | 0 (2)    | 0 (2)             | 0 (1)   | 0 (2)  | 0 (2)  | 0 (2)  |
| Alcohol abuse, n (%)   | 65 (12.8) | 30 (8.2)  | 4 (3.6)           | 7 (6.5) | 8 (8.0) | 1 (1.4) | 3 (4.3) |
| Travel type, n (%)     |       |         |                    |         |        |       |        |
| Work/holiday/other     | 381 (75.1) | 208 (56.8) | 29 (26.4) | 87 (80.6) | 86 (86.0) | 62 (83.8) | 52 (74.3) |
| Residence              | 121 (23.9) | 79 (21.6)  | 28 (25.5) | 14 (13.0) | 9 (9.0)  | 9 (12.2) | 14 (20.0) |
| VFR                    | 5 (1.0) | 79 (21.6)  | 53 (48.2) | 7 (6.5)   | 5 (5.0)  | 3 (4.1)  | 4 (5.7)  |
| Surgery / invasive procedure, n (%) | 165 (32.5) | 175 (47.8) | 44 (40.0) | 61 (56.5) | 38 (38.0) | 19 (25.7) | 38 (54.3) |
| ICU treatment, n (%)   | 87 (17.2) | 47 (12.8)  | 8 (7.3) | 20 (18.5) | 12 (12.0) | 8 (10.8) | 9 (12.9) |
| Antibiotic use, n (%)  | 232 (45.8) | 123 (33.6) | 39 (35.5) | 39 (36.1) | 47 (47.0) | 32 (43.2) | 26 (37.1) |
| Days from discharge to screening, median (IQR) | 8 (56) | 8.5 (70)  | 10 (77) | 12.5 (49) | 1 (14)   | 2.5 (27) | 4.5 (19) |
| Direct transfer, n (%) | 170 (33.5) | 134 (36.6) | 37 (33.6) | 33 (30.6) | 44 (44.0) | 30 (40.5) | 27 (38.6) |
| Median duration of hospitalization abroad, days (IQR) | 8 (10) | 4 (6)    | 5 (10) | 6 (13)   | 7 (7)    | 8 (8)    | 9 (10)    |
| Duration of hosp. data missing, n (%) | 164 (32.3) | 142 (38.8) | 37 (33.6) | 35 (32.4) | 21 (21.0) | 21 (28.4) | 23 (32.9) |

CCI = Charlson comorbidity index; ICU = intensive care unit; IQR = interquartile range; VFR = visiting friends and relatives
**Supplementary Table 5.** Comparison of multidrug-resistant organism (MDRO) carriage among patients treated in intensive care units (ICU) in other European countries versus non-ICU-treated patients. The patients were screened at the Helsinki University Hospital 2010–19 within 90 days after discharge abroad.a

|                              | ICU treatment (n = 213), n (%) | No ICU treatment (n = 1244), n (%) | OR (95% CI) | p value |
|------------------------------|--------------------------------|------------------------------------|-------------|---------|
| Any MDROs                    | 53 (24.9)                      | 209 (16.8)                         | 1.6 (1.2-2.3) | 0.005   |
| MDROs other than ESBL- *E. coli* | 37 (17.4)                      | 108 (8.7)                          | 2.2 (1.5-3.3) | <0.001  |
| ESBL-PE                      | 34 (16.0)                      | 160 (12.9)                         | 1.3 (0.9-1.9) | 0.219   |
| ESBL- *K. pneumoniae*        | 11 (5.2)                       | 35 (2.8)                           | 1.9 (1.0-3.8) | 0.074   |
| VRE                          | 10 (5.2)                       | 20 (2.0)                           | 2.7 (1.3-6.0) | 0.011   |
| MDRACI                       | 9 (4.2)                        | 7 (0.6)                            | 7.8 (2.9-21.2) | <0.001  |
| MRSA                         | 7 (3.3)                        | 31 (2.5)                           | 1.3 (0.6-3.1) | 0.503   |
| MDRPA                        | 6 (2.8)                        | 5 (0.4)                            | 7.2 (2.2-23.8) | 0.001   |
| CPE                          | 5 (2.3)                        | 6 (0.5)                            | 5.0 (1.5-16.4) | 0.009   |

CI = confidence interval; CPE = carbapenemase-producing Enterobacterales; ESBL-EC = extended-spectrum beta-lactamase-producing *Escherichia coli*; ESBL-KP = extended-spectrum beta-lactamase-producing *Klebsiella pneumoniae*; ESBL-PE = extended-spectrum beta-lactamase-producing Enterobacterales; ICU = intensive care unit; MDRACI = multidrug-resistant *Acinetobacter* species; MDRO = multidrug-resistant organisms; MDRPA = multidrug-resistant *Pseudomonas aeruginosa*; MRSA = methicillin-resistant *Staphylococcus aureus*; OR = odds ratio; VRE = vancomycin-resistant *Enterococcus* species

a Only patients screened within 90 days after hospital discharge abroad are included to avoid missing data on whether or not a patient was treated in an ICU.