Table S1. Univariate and multivariable model of variables associated with receiving inadequate empirical antibiotic treatment in bacteremic urinary tract infection.

| Variable                  | Inadequate empirical treatment (n=85) | Adequate empirical treatment (n=358) | Unadjusted OR (95% CI) | P       | Adjusted OR (95% CI) | P       |
|---------------------------|---------------------------------------|-------------------------------------|------------------------|---------|----------------------|---------|
| Gender (male)             | 64 (75.29)                            | 224 (62.57)                         | 1.82 (1.07-3.12)       | 0.028   | 1.60 (0.86-2.99)      | 0.14    |
| Age, y, median (IQR)      | 75 (66.0-83.0)                        | 74 (65.0-82.0)                      | 1.01 (0.99-1.03)       | 0.55    |                      |         |
| Charlson index, median (IQR) | 4 (2-6)                               | 3 (2-5)                             | 1.12 (1.02-1.22)       | 0.015   | 1.11 (1.01-1.23)      | 0.032   |
| Mc Cabe score II-III      | 41 (48.24)                            | 116 (32.49)                         | 1.94 (1.20-3.13)       | 0.007   |                      |         |
| Diabetes mellitus         | 21 (24.61)                            | 107 (29.89)                         | 0.77 (0.45-1.32)       | 0.34    |                      |         |
| Chronic renal failure     | 32 (37.65)                            | 103 (28.77)                         | 1.49 (0.91-2.45)       | 0.11    |                      |         |
| Chronic pulmonary disease | 15 (17.65)                            | 44 (12.29)                          | 1.53 (0.81-2.90)       | 0.19    |                      |         |
| Cardiovascular disease    | 27 (31.76)                            | 108 (30.17)                         | 1.08 (0.65-1.79)       | 0.75    |                      |         |
| Chronic liver disease     | 8 (9.41)                              | 18 (5.03)                           | 1.96 (0.82-4.68)       | 0.13    |                      |         |
| Vascular/degenerative brain disease | 18 (21.18) | 76 (21.23) | 1.00 (0.56-1.78) | 0.99 |                      |         |
| Malignant disease         | 38 (44.71)                            | 144 (40.22)                         | 1.20 (0.75-1.94)       | 0.45    |                      |         |
| Immunosuppressive therapy | 22 (25.88)                            | 99 (27.73)                          | 0.91 (0.53-1.56)       | 0.73    |                      |         |
| Condition                                      | Cases (%) | Controls (%) | Odds Ratio (95% CI) | p-value |
|------------------------------------------------|-----------|--------------|---------------------|---------|
| Recurrent UTI (>2 episodes/year)               | 18 (22.50)| 66 (18.97)   | 1.24 (0.69-2.24)    | 0.47    |
| Structural urinary tract abnormalities         | 34 (40.48)| 107 (30.14)  | 1.58 (0.96-2.58)    | 0.069   |
| Indwelling urinary devices                     | 57 (67.06)| 212 (59.22)  | 1.40 (0.85-2.31)    | 0.19    |
| Site of infection (CO-HCA)                     | 40 (47.06)| 183 (51.12)  | 0.85 (0.53-1.37)    | 0.50    |
| Previous antibiotic use (3months)             | 65 (76.47)| 250 (69.83)  | 1.40 (0.81-2.43)    | 0.226   |
| Pitt score >2                                  | 55 (64.71)| 227 (63.59)  | 0.95 (0.58-1.56)    | 0.85    |
| Septic shock                                   | 6 (7.79)  | 53 (15.45)   | 0.46 (0.19-1.12)    | 0.087   |
| ICU admission required                         | 68 (19.26)| 14 (15.45)   | 0.85 (0.44-1.55)    | 0.55    |
| Polimicrobial infection                        | 3 (3.53)  | 19 (5.31)    | 0.65 (0.19-2.26)    | 0.51    |
| Resistance profile (MDR)                       | 68 (80.00)| 203 (56.70)  | 3.05 (1.73-5.41)    | <0.001  |
| Escherichia coli                               | 42 (49.41)| 188 (52.51)  | 0.88 (0.18-0.35)    | 0.61    |
| Klebsiella pneumonia                           | 13 (15.29)| 86 (24.02)   | 0.57 (0.30-1.08)    | 0.09    |
| Proteus spp.                                   | 3 (3.53)  | 18 (5.03)    | 0.69 (0.2-2.40)     | 0.56    |
| Other Enterobacterales                         | 11 (12.94)| 40 (11.17)   | 1.18 (0.58-2.41)    | 0.64    |
| Pseudomonas aeruginosa                         | 13 (15.29)| 28 (7.82)    | 2.13 (1.05-4.31)    | 0.036   |
| Enterococcus spp.                              | 6 (7.06)  | 16 (4.47)    | 1.62 (0.62-4.28)    | 0.32    |
Table S2. Clinical Research Ethical Committees who assessed the study protocol.

| Clinical Research Ethical Committee                                      | Location                                      |
|-------------------------------------------------------------------------|-----------------------------------------------|
| Clinical Research Ethical Committee of Hospital del Mar; Barcelona, Spain| (registration number 2016/6957/I)              |
| Clinical Research Ethical Committee of Hospital Universitario Ramón y Cajal; Barcelona, Spain |
| Clinical Research Ethical Committee of Hospital Clinic; Barcelona, Spain  |
| Clinical Research Ethical Committee of Hospital de la Santa Creu i Sant Pau; Barcelona, Spain |
| Clinical Research Ethical Committee of Hospital Universitari de Bellvitge; Barcelona, Spain |
| Clinical Research Ethical Committee of Fundació Assistencial Mutua de Terrassa; Barcelona, Spain |
| Clinical Research Ethical Committee of Illes Balears; Palma de Mallorca, Spain |
| Clinical Research Ethical Committee of Universidad de Navarra; Pamplona, Spain |
| Clinical Research Ethical Committee of Instituto de Investigación Sanitaria Gregorio Marañon; Madrid, Spain. |
| Clinical Research Ethical Committee of Cantabria; Santander, Spain       |
| Clinical Research Ethical Committee of Galicia; Pontevedra, Spain        |
| Clinical Research Ethical Committee of Aragon; Zaragoza, Spain           |