**Appendix.** Difference between days of therapy and days of antibiotic spectrum coverage in an inpatient antimicrobial stewardship program: vector autoregressive models for time-series analysis

Shutaro Murakami, BSP1,2, Manabu Akazawa, MPH, PhD2, Hitoshi Honda, MD, PhD3

Supplementary Table 1. New antibiotic spectrum coverage (ASC) score

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Spectrum by microorganism category | | | | | | | | | | | | | | | | |
|  |  |  | Wild type | | | | | | | | | | |  | Antimicrobial-resistant | | | | |
| Antibiotics class | Antibiotics | ASC scorea | *S. aureus* | *Strepto-coccus* spp. | *E. faecalis* | Anaer-obes (Oral) | *B. fragilis* | *Moraxella / H. influenzae* | *E. coli / K. pneumoniae* | *Enterobacter / Serratia / Citrobacter* | *P. aeruginosa* | *A. baumannii* | Atyp-ical |  | ESBL | MRSA | PRSP | VRE | CRE |
| Aminoglycoside | Amikacin/  amikacin liposomal | 9 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |  | 1 | 1 | 0 | 0 | 1 |
|  | Arbekacin | 9 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |  | 1 | 1 | 0 | 0 | 1 |
| β-lactam/β-lactamase inhibitor combination | Cefoperazone-sulbactam | 10 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |  | 0 | 0 | 1 | 0 | 0 |
| Cephamycin | Cefmetazole | 7 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |  | 1 | 0 | 0 | 0 | 0 |
|  | Flomoxef | 7 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |  | 1 | 0 | 0 | 0 | 0 |
| Glycopeptide | Teicoplanin | 5 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 | 1 | 1 | 0 | 0 |
| Fluoroquinolone | Pazufloxacin | 9 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |  | 1 | 1 | 0 | 0 | 0 |

Abbreviations: *A. baumannii*, *Acinetobacter baumannii*; *B. fragilis*, *Bacteroides fragilis*; CRE, carbapenem-resistant Enterobacterales; *E. coli*, *Escherichia coli*; *E. faecalis*, *Enterococcus faecalis*; ESBL, extended-spectrum β-lactamase–producing Enterobacterales; *H. influenzae*; *Haemophilus influenzae*; *K. pneumoniae*, *Klebsiella pneumoniae*; MRSA, methicillin-resistant *Staphylococcus aureus*; *P. aeruginosa*, *Pseudomonas aeruginosa*; PRSP, penicillin-resistant *Streptococcus pneumoniae*; *S. aureus*, *Staphylococcus aureus*; VRE, vancomycin-resistant *Enterococcus faecium*.

aTheASC score is the sum of all the points in each row.

Supplementary Figure 1. Changes in PAF acceptance (upper panel) and in the incidence of five organisms per 1,000 patient-days (PD) (for CDI per 10,000 PD) (lower panel)



Supplementary Figure 2. FEVDs for the VAR models with variables in the order of PAF acceptance, DOT or DASC, and microbiological data



NOTE. The x-axis shows the monthly time-series (the units are in months), and the y-axis shows the percentage of contribution of the effect of each variable.

Abbreviations: FEVDs, forecast error variance decompositions; VAR, vector autoregressive; PAF, proportion of prospective audit and feedback acceptance; DOT, days of therapy per 1,000 days present; DASC, days of antibiotic spectrum coverage per 1,000 days present; CDI, incidence of *Clostridioides difficile* infection per 10,000 patient days; ESBL, incidence of extended-spectrum β-lactamase-producing Enterobacterales per 1,000 patient days; MRSA, incidence of methicillin-resistant *Staphylococcus aureus* per 1,000 patient days; RP, incidence of drug-resistant *Pseudomonas aeruginosa* per 1,000 patient days; RE, incidence of drug-resistant Enterobacterales per 1,000 patient days