**FIGURE A.** Patient enrollment and identification of multidrug-resistant gram-negative bacteria colonization flowchart in model development period.

 **995 patients received active surveillance cultures**

**Patients without any multidrug-resistant gram-negative bacteria (MDR-GNB) isolated from active surveillance cultures**

**(n = 900)**

**Patients with any multidrug-resistant gram-negative bacteria (MDR-GNB) isolated from active surveillance cultures**

**(n = 95)**

MDR-GNB (-)

MDR-GNB (-)

MDR-GNB (+)

MDR-GNB (+)

Review the results of decision-driven clinical cultures performed within 48 hours of arrival at ER

**873 patients were judged as free of MDR-GNB colonization by the results of surveillance and clinical cultures**

**122 patients were judged as MDR-GNB colonizer by the positive result of either surveillance or clinical cultures**

**45 patients were identified as MDR-GNB colonizer by both surveillance and clinical cultures**

**50 patients were identified as MDR-GNB colonizer by surveillance cultures only**

**27 patients were further identified as MDR-GNB colonizer by clinical cultures**

**TABLE A.** Accuracy of the risk score in the identification of multidrug-resistant gram-negative bacteria colonization among 995 patients of the first stage, model development study, stratified by cutoff values of the risk score.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Sensitivity, | Specificity, | Positive predictive value, | Negative predictive value, | Case (%) of entire cohort | Youden index |
| Cutoff value | % (95% CI) | % (95% CI) | % (95% CI) | % (95% CI) |
| Derivation set (n = 663) |
| ≥8 | 6.5 | (2.8–14.3) | 99.3 | (98.3–99.7) | 55.6 | (26.7–81.1) | 89.0 | (86.4–91.2) | 9 | (1.4) | 0.058 |
| ≥7 | 18.2 | (11.1–28.2) | 98.3 | (96.9–99.1) | 58.3 | (38.8–75.5) | 90.1 | (87.6–92.2) | 24 | (3.6) | 0.165 |
| ≥6 | 27.3 | (18.6–38.1) | 96.6 | (94.8–97.8) | 51.2 | (36.5–65.8) | 91.0 | (88.5–93.0) | 41 | (6.2) | 0.239 |
| ≥5 | 44.2 | (33.6–55.3) | 89.9 | (87.2–92.1) | 36.6 | (27.5–46.7) | 92.5 | (90.0–94.4) | 93 | (14.0) | 0.341 |
| ≥4 | 54.5 | (43.5–65.2) | 83.8 | (80.6–86.6) | 30.7 | (23.6–38.8) | 93.3 | (90.9–95.2) | 137 | (20.7) | 0.383 |
| ≥3 | 63.6 | (52.5–73.5) | 72.5 | (68.8–76.0) | 23.3 | (18.1–29.5) | 93.8 | (91.2–95.7) | 210 | (31.7) | 0.361 |
| ≥2 | 72.7 | (61.9–81.4) | 61.4 | (57.4–65.3) | 19.9 | (15.6–24.9) | 94.5 | (91.7–96.4) | 282 | (42.5) | 0.341 |
| ≥1 | 89.6 | (80.8–94.6) | 36.7 | (32.9–40.7) | 15.7 | (12.6–19.4) | 96.4 | (93.1–98.2) | 440 | (66.4) | 0.263 |
| Validation set (n = 332) |
| ≥8 | 6.7 | (2.3–17.9) | 99.7 | (98.1–99.9) | 75.0 | (30.1–95.4) | 87.2 | (83.1–90.4) | 4 | (1.2) | 0.064 |
| ≥7 | 8.9 | (3.5–20.7) | 98.6 | (96.5–99.5) | 50.0 | (21.5–78.5) | 87.3 | (83.3–90.5) | 8 | (2.4) | 0.075 |
| ≥6 | 22.2 | (12.5–36.3) | 97.2 | (94.6–98.6) | 55.6 | (33.7–75.4) | 88.9 | (84.9–91.9) | 18 | (5.4) | 0.194 |
| ≥5 | 37.8 | (25.1–52.4) | 92.7 | (89.1–95.2) | 44.7 | (30.2–60.3) | 90.5 | (86.6–93.3) | 38 | (11.4) | 0.305 |
| ≥4 | 60.0 | (45.5–73.0) | 87.1 | (82.7–90.5) | 42.2 | (30.9–54.4) | 93.3 | (89.6–95.7) | 64 | (19.3) | 0.471 |
| ≥3 | 68.9 | (54.3–80.5) | 72.1 | (66.7–77.0) | 27.9 | (20.4–36.9) | 93.7 | (90.0–96.2) | 111 | (33.4) | 0.410 |
| ≥2 | 82.2 | (68.7–90.7) | 61.3 | (55.6–66.8) | 25.0 | (18.7–32.6) | 95.7 | (91.7–97.8) | 148 | (44.6) | 0.435 |
| ≥1 | 93.3 | (82.1–97.7) | 41.8 | (36.3–47.6) | 20.1 | (15.2–26.1) | 97.6 | (93.1–99.2) | 209 | (63.0) | 0.351 |
| Total case |
| ≥8 | 6.6 | (3.4–12.4) | 99.4 | (98.7–99.8) | 61.5 | (35.5–82.3) | 88.4 | (86.2–90.3) | 13 | (1.3) | 0.060 |
| ≥7 | 14.8 | (9.5–22.1) | 98.4 | (97.3–99.0) | 56.3 | (39.9–71.8) | 89.2 | (87.1–91.0) | 32 | (3.2) | 0.132 |
| ≥6 | 25.4 | (18.5–33.8) | 96.8 | (95.4–97.8) | 52.5 | (40.0–64.7) | 90.3 | (88.2–92.0) | 59 | (5.9) | 0.222 |
| ≥5 | 41.8 | (33.4–50.7) | 90.8 | (88.7–92.6) | 38.9 | (31.0–47.5) | 91.8 | (89.8–93.4) | 131 | (13.2) | 0.326 |
| ≥4 | 56.6 | (47.7–65.0) | 84.9 | (82.4–87.1) | 34.3 | (28.1–41.1) | 93.3 | (91.4–94.9) | 201 | (20.2) | 0.415 |
| ≥3 | 65.6 | (56.8–73.4) | 72.4 | (69.3–75.3) | 24.9 | (20.5–29.9) | 93.8 | (91.7–95.4) | 321 | (32.3) | 0.380 |
| ≥2 | 76.2 | (68.0–82.9) | 61.4 | (58.1–64.6) | 21.6 | (18.0–25.8) | 94.9 | (92.7–96.4) | 430 | (43.2) | 0.376 |
| ≥1 | 91.0 | (84.6–94.9) | 38.4 | (35.2–41.6) | 17.1 | (14.4–20.2) | 96.8 | (94.4–98.2) | 649 | (65.2) | 0.294 |