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| **Predictors of MRSA detection and coverage.**Bivariate Model is shown using 38,473 hospitalizations at 128 hospitals during the years 2009-2010. Risk ratios of detection and coverage with 95% confidence intervals are shown. Coverage : culture ratios were calculated by the % covered:% detected. |
|  | **%(N) Detected** | **Detection Risk Ratio** | **%(N) Covered** | **Coverage Risk Ratio** | **Coverage: Culture Ratio** |
| **Patient-level Factors** |
| Age |
|  <= 60 | 2.3 (453) | Reference | 23.8 (4720) | Reference | 10.40 |
| 61-70 | 2.1 (539) | 0.94 (0.83, 1.06) | 26.0 (6538) | 1.09 (1.05, 1.13) | 12.10 |
| 71-80 | 2.2 (484) | 0.94 (0.83, 1.07) | 23.7 (5308) | 0.99 (0.96, 1.03) | 11.00 |
| >80 | 2.2 (629) | 0.98 (0.87, 1.11) | 23.6 (6623) | 0.99 (0.95, 1.03) | 10.50 |
| Acute Care Exposures in last 90 days |
| No | 1.7 (1131) | Reference | 17.4 (11948) | Reference | 10.60 |
| Yes | 3.6 (974) | 2.18 (2.00, 2.38) | 41.6 (11238) | 2.39 (2.32, 2.45) | 11.50 |
| Number of Days hospitalized in previous 90 days |
| 0-1 | 1.7 (1131) | Reference | 17.4 (11948) | Reference | 10.60 |
| 2-14 | 2.9 (607) | 1.78 (1.62, 1.97) | 38.5 (7928) | 2.21 (2.14, 2.27) | 13.10 |
| >14 | 5.7 (367) | 3.47 (3.08, 3.90) | 51.6 (3310) | 2.96 (2.85, 3.08) | 9.00 |
| Long-term care Exposures in last 90 days |
| No | 2.0 (1823) | Reference | 22.5 (20278) | Reference | 11.10 |
| Yes | 5.1 (282) | 2.52 (2.23, 2.86) | 52.7 (2908) | 2.34 (2.25, 2.43) | 10.30 |
| Number of days in long-term care in previous 90 days |
| 0-1  | 2.0 (1823) | Reference | 22.5 (20278) | Reference | 11.10 |
| 1-28 | 4.4 (104) | 2.18 (1.79, 2.66) | 50.1 (1179) | 2.22 (2.10, 2.36) | 11.30 |
| >28  | 5.6 (178) | 2.78 (2.38, 3.24) | 54.7 (1729) | 2.43 (2.31, 2.55) | 9.70 |
| History of MRSA-positive Cultures |
| No | 1.7 (1479) | Reference | 22.7 (20348) | Reference | 13.80 |
| Yes | 10.6 (626) | 6.41 (5.84, 7.04) | 48.0 (2841) | 2.11 (2.03, 2.20) | 4.50 |
| History of PAER-positive Cultures |
| No | 2.0 (1771) | Reference | 23.1 (20735) | Reference | 11.70 |
| Yes | 5.8 (334) | 2.95 (2.62, 3.31) | 42.7 (2454) | 1.85 (1.77, 1.93) | 7.30 |
| **Facility-level factors** |
| Rural |  |  |  |  |  |
| No | 2.2 (1883) | Reference | 26.1 (21899) | Reference | 11.60 |
| Yes | 1.9 (222) | 0.85 (0.74, 0.98) | 11.1 (1290) | 0.43 (0.40, 0.45) | 5.80 |
| Census Regions |  |  |  |  |
| Northeast | 2.1 (377) | Reference | 22.8 (4051) | Reference | 10.70 |
| Midwest | 2.0 (562) | 0.93 (0.81, 1.05) | 24.5 (7004) | 1.07 (1.03, 1.12) | 12.50 |
| South | 2.4 (791) | 1.14 (1.01, 1.29) | 25.8 (8396) | 1.13 (1.09, 1.17) | 10.60 |
| West | 2.3 (375) | 1.06 (0.92, 1.22) | 22.5 (3738) | 0.98 (0.94, 1.03) | 10.00 |
| Complexity score |
| 1a | 2.4 (922) | Reference | 29.2 (11335) | Reference | 12.30 |
| 1b | 2.5 (314) | 1.04 (0.91, 1.18) | 27.3 (3473) | 0.93 (0.90, 0.97) | 11.10 |
| 1c | 2.1 (305) | 0.89 (0.78, 1.01) | 25.3 (3654) | 0.86 (0.83, 0.90) | 12.00 |
| 2 | 416 (2.1) | 0.87 (0.78, 0.98) | 20.5 (4109) | 0.70 (0.68, 0.73) | 9.90 |
| 3 | 1.6 (148) | 0.65 (0.55, 0.78) | 6.5 (618) | 0.22 (0.20, 0.24) | 4.20 |
| Hospital prevalence of MRSA-positive cultures in pneumonia cases (%) |
| <1.5% | 1.4 (100) | Reference | 27.5 (1989) | Reference | 19.90 |
| 1.5-<2.5% | 1.8 (338) | 1.29 (1.03, 1.61) | 29.4 (5554) | 1.07 (1.01, 1.12) | 16.40 |
| 2.5%-<3.5% | 2.3 (193) | 1.68 (1.32, 2.14) | 32.8 (2719) | 1.19 (1.13, 1.26) | 14.10 |
| 3.5%-<4.5% | 3.7 (120) | 2.69 (2.06, 3.51) | 34.2 (1103) | 1.24 (1.16, 1.34) | 9.20 |
| >4.5% | 4.6 (38) | 3.29 (2.27, 4.78) | 30.1 (251) | 1.09 (0.96, 1.25) | 6.60 |

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| **Predictors of *P. aeruginosa* detection and coverage*.*** Bivariate Model is shown using 38,473 hospitalizations at 128 hospitals during the years 2009-2010. Risk ratios of detection and coverage with 95% confidence intervals are shown. Coverage:culture ratios were calculated by the % covered:% detected. |
|  | **%(N) Detected** | **Detection Risk Ratio** | **%(N) Covered** | **Coverage Risk Ratio** | **Coverage: Culture Ratio** |
| Patient-level Factors |
| Age |
|  <= 60 | 1.7 (332) | Reference | 26.1 (5169) | Reference | 15.60 |
| 61-70 | 2.2 (565) | 1.34 (1.17, 1.54) | 30.2 (7605) | 1.16 (1.12, 1.20) | 13.50 |
| 71-80 | 2.4 (548) | 1.46 (1.27, 1.67) | 28.5 (6386) | 1.09 (1.05, 1.13) | 11.70 |
| >80 | 1.5 (431) | 0.92 (0.79, 1.06) | 28.7 (8077) | 1.10 (1.07, 1.14) | 18.70 |
| Acute Care Exposures in last 90 days |
| No | 1.5 (1002) | Reference | 20.5 (14074) | Reference | 14.00 |
| Yes | 3.2 (874) | 2.21 (2.02, 2.42) | 48.7 (13160) | 2.37 (2.32, 2.43) | 15.10 |
| Number of Days hospitalized in previous 90 days |
| 0-1 | 1.5 (1002) | Reference | 20.5 (14074) | Reference | 14.00 |
| 2-14 | 2.7 (560) | 1.86 (1.68, 2.06) | 45.4 (9342) | 2.21 (2.15, 2.27) | 16.70 |
| >14 | 4.9 (314) | 3.35 (2.95, 3.80) | 59.6 (3818) | 2.90 (2.80, 3.00) | 12.20 |
| Long-term care Exposures in last 90 days |
| No | 1.9 (1692) | Reference | 26.5 (23853) | Reference | 14.10 |
| Yes | 3.3 (184) | 1.77 (1.52, 2.07) | 61.3 (3381) | 2.31 (2.23, 2.40) | 18.40 |
| Number of days in long-term care in previous 90 days |
| 0-1  | 1.9 (1692) | Reference | 26.5 (23853) | Reference | 14.10 |
| 1-28 | 4.1 (97) | 2.19 (1.79, 2.69) | 58.8 (1383) | 2.22 (2.10, 2.34) | 14.30 |
| >28 days | 2.8 (87) | 1.46 (1.18, 1.82) | 63.2 (1998) | 2.38 (2.28, 2.50) | 23.00 |
| History of MRSA-positive Cultures |
| No | 1.8 (1600) | Reference | 27.2 (24392) | Reference | 15.20 |
| Yes | 4.7 (276) | 2.61 (2.30, 2.97) | 48.1 (2845) | 1.77 (1.70, 1.84) | 10.30 |
| History of PAER-positive Cultures |
| No | 1.3 (1137) | Reference | 26.9 (24136) | Reference | 21.20 |
| Yes | 12.9 (739) | 10.2 (9.26,11.14) | 54.0 (3101) | 2.0 (1.93, 2.08) | 4.20 |
| Facility-level factors |
| Rural |
| No | 2.0 (1645) | Reference | 30.0 (25165) | Reference | 15.30 |
| Yes | 2.0 (231) | 1.02 (0.89, 1.17) | 17.9 (2072) | 0.60 (0.57, 0.62) | 9.00 |
| Census Region |  |  |  |  |  |
| Northeast | 1.8 (312) | Reference | 24.4 (4322) | Reference | 13.90 |
| Midwest | 2.1 (588) | 1.17 (1.02, 1.34) | 29.9 (8540) | 1.23 (1.18, 1.27) | 14.50 |
| South | 2.1 (675) | 1.18 (1.03, 1.35) | 30.4 (9897) | 1.25 (1.20, 1.29) | 14.70 |
| West | 1.8 (301) | 1.03 (0.88, 1.21) | 26.9 (4478) | 1.10 (1.06, 1.15) | 14.90 |
| Complexity score |
| 1a | 2.1 (804) | Reference | 31.4 (12176) | Reference | 15.10 |
| 1b | 1.9 (242) | 0.92 (0.79, 1.06) | 31.8 (4051) | 1.01 (0.98, 1.05) | 16.70 |
| 1c | 2.2 (324) | 1.08 (0.95, 1.23) | 30.1 (4353) | 0.96 (0.93, 0.99) | 13.40 |
| 2 | 1.7 (341) | 0.82 (0.72, 0.93) | 27.2 (5438) | 0.87 (0.84, 0.89) | 15.90 |
| 3 | 1.7 (165) | 0.83 (0.71, 0.99) | 12.8 (1219) | 0.41 (0.38, 0.43) | 7.40 |
| Hospital prevalence of MRSA-positive cultures in pneumonia cases (%) |
| <1.5% | 1.6 (169) | Reference | 30.3 (3258) | Reference | 19.30 |
| 1.5-<2.5% | 2.1 (402) | 1.32 (1.10, 1.58) | 33.4 (6469) | 1.10 (1.05, 1.15) | 16.10 |
| 2.5%-<3.5% | 2.8 (227) | 1.76 (1.44, 2.15) | 36.3 (2975) | 1.20 (1.14, 1.26) | 13.10 |
| 3.5%-<4.5% | 3.7 (6) | 2.32 (1.03, 5.25) | 40.9 (67) | 1.35 (1.06, 1.71) | 11.20 |