**Supplemental Table 1. Facility Characteristics**

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| --- | --- | --- | --- | --- | --- | --- |
|  | **Facility 1** | **Facility 2** | **Facility 3** | **Facility 4** | **Facility 5** | **Facility 6** |
| Number of beds | 74 | 143 | 103 | 72 | 133 | 102 |
| Ownership | For-Profit | For-Profit | For-Profit | For-Profit | For-Profit | For-Profit |
| Star rating(Nursing Home Compare, 2013) | 5 | 2 | 4 | 4 | 4 | 3 |
| Number of patients eligible | 260 | 195 | 356 | 290 | 132 | 151 |
| No. (%) enrolled | 132 (50.8) | 82 (42.1) | 169 (47.5) | 137 (47.2) | 54 (40.9) | 76 (50.3) |
| No. (%) male  | 60 (45.5) | 31 (37.8) | 68 (40.2) | 47 (34.3) | 29 (53.7) | 39 (51.3) |
| No. (%) admitted following acute care hospital stay | 127 (96.2) | 77 (93.9) | 161 (95.3) | 129 (94.2) | 54 (100.0) | 69 (90.8) |
| Mean (SD) days follow-up per patient | 20.3 (39.0) | 42.7 (56.3) | 26.0 (40.5) | 25.9 (36.7) | 30.0 (35.6) | 39.0 (56.9) |

**Supplemental Table 2. Predictors of MDRO colonization among patients enrolled within 3 days of admission (N=175)**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Patient Colonizationa** |  |
| No Colonization[*n*=277]  | No Hand Colonization, Other Body Site(s) Colonized[*n*=204]  | Hands Colonized[*n*=164] (%) |
| **Characteristic** | *n* (%) | *n* (%) | MultivariateRRR (95% CI) | *n* (%) | MultivariateRRR (95% CI) |
| Age, mean (SD) | 72.9 (12.7) | 75.9 (9.2)\* | 1.02 (1.00-1.05)\*\* | 74.9 (10.2) | 1.02 (0.99-1.05) |
| Male | 31 (39.2) | 24 (42.9) | 1.23 (0.66-2.31) | 26 (65.0)\* |  3.28 (2.15-5.00) \*\* |
| Charlson Comorbidity Score, mean(SD) | 2.5 (2.2) | 2.6 (2.1) | NA | 3.1 (2.2) | NA |
| Cognitive Sum Score, mean(SD)b d | 13.9 (2.1) | 14.1 (1.7) | 1.11 (0.87-1.42) | 12.8 (3.7)\* | 0.97 (0.91-1.04) |
| Physical Self Maintenance Score, mean (SD)c | 12.4 (3.4) | 13.3 (4.1) | 1.03 (0.95-1.12) | 15.0 (4.5) \* | 1.19 (1.12-1.27) \*\* |
| Feeding Disability | 1 (1.3) | 4 (7.1) | NA | 0 (0) | NA |
| Bathing Disability | 29 (36.7) | 25 (44.6) | 1.23 (0.60-2.53) | 21 (52.5) \* | 1.80 (0.81-3.99) |
| Ambulation Disability | 41 (51.9) | 29 (51.8) | 0.95 (0.54-1.69) | 30 (75.0) \* | 3.38 (2.38-4.80) \*\* |
| Toileting Disability | 10 (12.7) | 12 (21.4) \* | 1.23 (0.59-2.58) | 16 (40.0) \* | 4.29 (2.01-9.15) \*\* |
| Dressing Disability | 40 (50.6) | 31 (55.4) | 1.05 (0.67-1.64) | 27 (67.5) \* | 1.99 (1.60-2.47) \*\* |
| Grooming Disability | 12 (15.2) | 7 (12.5) | 0.60 (0.31-1.15) | 12 (30.0) \* | 1.73 (0.71-4.25) |
| Urinary Catheter | 3 (3.8) | 6 (10.7) | 2.16 (0.41-11.49) | 6 (15.0) \* | 1.32 (0.22-7.83) |
| Feeding Tube | 1 (1.3) | 2 (3.6) | NA | 0 (0) | NA |
| Peripherally-inserted central venous catheter | 10 (12.7) | 8 (14.3) | 1.03 (0.17-6.21) | 6 (15.0) \* | 1.39 (0.28-6.98) |
| Antibiotic Use in previous 30 daysd | 43 (56.6) | 38 (69.1) | 1.79 (0.83-3.86) | 28 (71.8) \* | 2.00 (1.33-3.00)\*\*  |
| Diabetes | 35 (44.3) | 25 (44.6) | NA | 23 (57.5) | NA |
| Dementiad | 6 (7.6) | 5 (8.9) | NA | 7 (17.5) | NA |
| Prolonged Hospital Stay (>2 weeks) | 4 (5.1) | 3 (5.4) | 0.98 (0.17-5.69) | 5 (12.5) \* | 2.95 (0.72-12.07) |

a *N*=175

b Possible Cognitive Sum Score range, 0 to 15, higher scores indicating higher cognitive function.

c Possible Physical Self Maintenance Score range, 6 to 30, higher scores indicating more functional disability.

d These variables had missing data. The totals for each are: cognitive sum score, *n*=166; antibiotic use, *n*=170. For multivariate analyses, missing values were assigned as the population average (cognitive score) or zero (antibiotic use), and missing controls were added.

\* These variables were significant at *P* < .05 in clustered univariate analysis and included in the adjusted model. Disability variables are collinear; adjusted RRRs for these do not include other disability variables.

\*\* These variables were significant at *P* < .05 in clustered multivariate analysis.

**Supplemental Table 3. Fluidity of colonization among patients with ≥60 days of follow-up (N=93)**

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| --- | --- | --- | --- |
|  | MRSA | VRE | RGNB |
| **Patients with hand colonization, N(%)** | **30 (32.3)** | **37 (39.8)** | **26 (28.0)** |
|  Patients with pre-existing hand colonization, n(%) |  10 (33.3) |  22 (59.5) |  6 (23.1) |
|  Persistenta, n(%) |  4 (40.0) |  5 (22.7) |  0 (0) |
|  Intermittentb, n(%) |  6 (60.0) |  17 (77.3) |  6 (100) |
|  Patients with acquired hand colonization, n(%) |  20 (66.7) |  15 (40.5) |  20 (76.9) |
|  Persistenta, n(%) |  8 (40.0) |  5 (33.3) |  3 (15.0) |
|  Intermittentb, n(%) |  12 (60.0) |  10 (66.7) |  17 (85.0) |

a Colonization was considered persistent if one or less negative hand swabs between positive swabs.

b Colonization was considered intermittent if positive swabs were separated by at least two negative samples.