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# eTable 1 PS model for LOS in ICU

|  |  |  |
| --- | --- | --- |
| Covariates |  Before PS matching  |  After PS matchingb  |
| **With VAE (n=1,803)** | **Without VAE (n=4,623)** | **Standardized****Differencea** | **With VAE (n=1,800)** | **Without VAE (n=2,297)** | **Standardized****Difference** |
| Age (y), median (IQR) | 59 (47-71) | 60 (48-72) | -0.045 | 59 (47-71) | 59 (47-71) | -0.008 |
| APACHE II score on ICU admission, mean ± SD | 20.4 **±** 7.3 | 19.0 **±** 8.1 | 0.075 | 20.3 ± 7.2 | 20.1 ± 7.5 | 0.032 |
| Sex, No. male (%) | 1,156 (64.1) | 2,895 (62.6) | 0.031 | 1,153 (64.1) | 1,436 (62.5) | -0.032 |
| Chronic lower respiratory diseases, No. (%) | 251 (13.9) | 764 (16.5) | -0.073 | 251 (13.9) | 346 (15.1) | -0.021 |
| Malignancies, No. (%) | 186 (10.3) | 541 (11.7) | -0.004 | 186 (10.3) | 252 (11.0) | -0.014 |
| Hypertension, No. (%) | 628 (34.8) | 1,617 (35.0) | -0.003 | 627 (34.8) | 816 (35.5) | -0.010 |
| ARDS, No. (%) | 77 (4.3) | 215 (4.7) | -0.019 | 77 (4.3) | 103 (4.5) | -0.009 |
| Gastrointestinal bleeding, No. (%) | 117 (6.5) | 299 (6.5) | 0.001 | 116 (6.4) | 153 (6.7) | -0.032 |
| Shock, No. (%) | 251 (13.9) | 633 (13.7) | 0.007 | 251 (13.9) | 346 (15.1) | 0.044 |
| Surgical operation, No. (%) | 1,388 (77.0) | 3,227 (69.8) | 0.163 | 1,385 (76.9) | 1,724 (75.1) | 0.053 |
| Blood transfusion, No. (%) | 1,195 (66.3) | 2,655 (57.4) | 0.183 | 1,192 (66.2) | 1,463 (63.7) | 0.033 |
| Central line catheters, No. (%) | 1,404 (77.9) | 3,241 (70.1) | 0.178 | 1,401 (77.8) | 1,756 (76.4) | 0.053 |
| Onset of IMV in ICU, No. (%) | 132 (7.3) | 385 (8.3) | -0.037 | 132 (7.3) | 192 (8.4) | -0.038 |

Note. PS, propensity score; LOS, length of stay; ICU, intensive care unit; VAE, ventilator-associated event; IQR, interquartile range; APACHE, Acute Physiology and Chronic Health Evaluation; SD, standard deviation; ARDS, acute respiratory distress syndrome; IMV, invasive mechanical ventilation.

a An absolute value ≤ 0.1 indicates a negligible difference in the mean or prevalence of a covariate between groups.

b Matching scale is 1:2, calipers value is 0.02.

# eTable 2 PS model for LOS in hospital

|  |  |  |
| --- | --- | --- |
| Covariates |  Before PS matching  |  After PS matchingb  |
| **With VAE (n=1,803)** | **Without VAE (n=4,623)** | **Standardized****Differencea** | **With VAE (n=1,802)** | **Without VAE (n=2,280)** | **Standardized****Difference** |
| Age (y), median (IQR) | 59 (47-71) | 60 (48-72) | -0.045 | 59 (47-71) | 60 (48-72) | -0.034 |
| APACHE II score on ICU admission, mean ± SD | 20.4 **±** 7.3 | 19.0 **±** 8.1 | 0.075 | 20.4 ± 7.3 | 20.1 ± 7.4 | 0.041 |
| Sex, No. male (%) | 1,156 (64.1) | 2,895 (62.6) | 0.031 | 1,155 (64.1) | 1,430 (62.5) | 0.029 |
| Diabetes, No. (%) | 299 (16.6) | 788 (17.0) | -0.012 | 298 (16.5) | 380 (16.7) | -0.003 |
| Gastrointestinal bleeding, No. (%) | 117 (6.5) | 299 (6.5) | 0.001 | 117 (6.5) | 146 (6.4) | 0.004 |
| Shock, No. (%) | 251 (13.9) | 633 (13.7) | 0.007 | 251 (13.9) | 294 (12.9) | 0.030 |
| Multiple organ failure, No. (%) | 248 (13.8) | 686 (14.8) | -0.031 | 248 (13.8) | 316 (13.9) | -0.003 |
| Surgical operation, No. (%) | 1,388 (77.0) | 3,227 (69.8) | 0.163 | 1,387 (77.0) | 1,715 (75.2) | 0.041 |
| Blood transfusion, No. (%) | 1,195 (66.3) | 2,655 (57.4) | 0.183 | 1,194 (66.3) | 1,425 (62.5) | 0.079 |
| Immunity inhibitors, No. (%) | 1,239 (68.7) | 2,983 (64.5) | 0.089 | 1,238 (68.7) | 1,525 (66.9) | 0.039 |
| HAIs other than PVAP No. (%) | 267 (14.8) | 367 (7.9) | 0.218 | 266 (14.8) | 265 (11.6) | 0.093 |
| Central line catheters, No. (%) | 1,404 (77.9) | 3,241 (70.1) | 0.178 | 1,403 (77.9) | 1,711 (75.0) | 0.066 |
| Onset of IMV in ICU, No. (%) | 132 (7.3) | 385 (8.3) | -0.037 | 132 (7.3) | 170 (7.5) | -0.005 |

Note. PS, propensity score; LOS, length of stay; VAE, ventilator-associated event; IQR, interquartile range; APACHE, Acute Physiology and Chronic Health Evaluation; ICU, intensive care unit; SD, standard deviation; HAI, healthcare-associated infection; PVAP, possible ventilator-associated pneumonia; IMV, invasive mechanical ventilation.

a An absolute value ≤ 0.1 indicates a negligible difference in the mean or prevalence of a covariate between groups.

b Matching scale is 1:2, calipers value is 0.02.

# eTable 3 PS model for hospitalization costs

|  |  |  |
| --- | --- | --- |
| Covariates |  Before PS matching  |  After PS matchingb  |
| **With VAE (n=1,803)** | **Without VAE (n=4,623)** | **Standardized****Differencea** | **With VAE (n=1,800)** | **Without VAE (n=2,255)** | **Standardized****Difference** |
| Age (y), median (IQR) | 59 (47-71) | 60 (48-72) | -0.045 | 59 (47-71) | 59 (48-71) | -0.013 |
| APACHE II score on ICU admission, mean ± SD | 20.4 **±** 7.3 | 19.0 **±** 8.1 | 0.075 | 20.3 ± 7.2 | 20.0 ± 7.6 | 0.047 |
| Sex, No. male (%) | 1,156 (64.1) | 2,895 (62.6) | 0.031 | 1,153 (64.1) | 1,426 (63.2) | 0.017 |
| Chronic heart diseases, No. (%) | 145 (8.0) | 371 (8.0) | 0.001 | 145 (8.1) | 183 (8.1) | -0.002 |
| Chronic lower respiratory diseases, No. (%) | 251 (13.9) | 764 (16.5) | -0.073 | 251 (13.9) | 300 (13.3) | 0.019 |
| Malignancies, No. (%) | 186 (10.3) | 541 (11.7) | -0.044 | 186 (10.3) | 268 (11.9) | -0.049 |
| Hypertension, No. (%) | 628 (34.8) | 1,617 (35.0) | -0.003 | 627 (34.8) | 781 (34.6) | 0.004 |
| ARDS, No. (%) | 77 (4.3) | 215 (4.7) | -0.018 | 77 (4.3) | 87 (3.9) | 0.021 |
| Shock, No. (%) | 251 (13.9) | 633 (13.7) | 0.007 | 251 (13.9) | 304 (13.5) | 0.013 |
| Surgical operation, No. (%) | 1,388 (77.0) | 3,227 (69.8) | 0.163 | 1,385 (76.9) | 1,698 (75.3) | 0.039 |
| Blood transfusion, No. (%) | 1,195 (66.3) | 2,655 (57.4) | 0.183 | 1,192 (66.2) | 1,447 (64.2) | 0.043 |
| Central line catheters, No. (%) | 1,404 (77.9) | 3,241 (70.1) | 0.178 | 1,401 (77.8) | 1,702 (75.5) | 0.056 |
| Onset of IMV in ICU, No. (%) | 132 (7.3) | 385 (8.3) | -0.037 | 132 (7.3) | 179 (7.9) | -0.023 |

Note. PS, propensity score; VAE, ventilator-associated event; IQR, interquartile range; APACHE, Acute Physiology and Chronic Health Evaluation; ICU, intensive care unit; SD, standard deviation; ARDS, acute respiratory distress syndrome; IMV, invasive mechanical ventilation.

a An absolute value ≤ 0.1 indicates a negligible difference in the mean or prevalence of a covariate between groups.

b Matching scale is 1:2, calipers value is 0.02.

# eTable 4 PS model for days on IMV & days on IMV ≥ 9d

|  |  |  |
| --- | --- | --- |
| Covariates |  Before PS matching  |  After PS matchingb  |
| **With VAE (n=1,803)** | **Without VAE (n=4,623)** | **Standardized****Differencea** | **With VAE (n=1,802)** | **Without VAE (n=2,315)** | **Standardized****Difference** |
| Age (y), median (IQR) | 59 (47-71) | 60 (48-72) | -0.045 | 59 (47-71) | 60 (47-71) | -0.010 |
| APACHE II score on ICU admission, mean ± SD | 20.4 **±** 7.3 | 19.0 **±** 8.1 | 0.075 | 20.4 ± 7.3 | 20.1 ± 7.5 | 0.015 |
| Sex, No. male (%) | 1,156 (64.1) | 2,895 (62.6) | 0.031 | 1,156 (64.2) | 1,465 (63.3) | 0.018 |
| Chronic lower respiratory diseases, No. (%) | 251 (13.9) | 764 (16.5) | -0.073 | 250 (13.9) | 331 (14.3) | -0.012 |
| Malignancies, No. (%) | 186 (10.3) | 541 (11.7) | -0.044 | 185 (10.3) | 253 (10.9) | -0.022 |
| Hypertension, No. (%) | 628 (34.8) | 1,617 (35.0) | -0.003 | 627 (34.8) | 830 (35.9) | -0.022 |
| ARDS, No. (%) | 77 (4.3) | 215 (4.7) | -0.018 | 77 (4.3) | 94 (4.1) | 0.011 |
| Blood transfusion, No. (%) | 1,195 (66.3) | 2,655 (57.4) | 0.183 | 1,195 (66.3) | 1,465 (63.3) | 0.064 |
| Immunity inhibitors, No. (%) | 1,239 (68.7) | 2,983 (64.5) | 0.089 | 1,239 (68.8) | 1,546 (66.8) | 0.042 |
| Central line catheters, No. (%) | 1,404 (77.9) | 3,241 (70.1) | 0.178 | 1,404 (77.9) | 1,725 (74.5) | 0.080 |

Note. PS, propensity score; IMV, invasive mechanical ventilation; VAE, ventilator-associated event; IQR, interquartile range; APACHE, Acute Physiology and Chronic Health Evaluation; ICU, intensive care unit; SD, standard deviation; ARDS, acute respiratory distress syndrome;.

a An absolute value ≤ 0.1 indicates a negligible difference in the mean or prevalence of a covariate between groups.

b Matching scale is 1:2, calipers value is 0.02.

# eTable 5 PS model for failure in estuation of IMV

|  |  |  |
| --- | --- | --- |
| Covariates |  Before PS matching  |  After PS matchingb  |
| **With VAE (n=1,803)** | **Without VAE (n=4,623)** | **Standardized****Differencea** | **With VAE (n=1,801)** | **Without VAE (n=2,281)** | **Standardized****Difference** |
| Age (y), median (IQR) | 59 (47-71) | 60 (48-72) | -0.045 | 59 (47-71) | 60 (48-72) | -0.023 |
| APACHE II score on ICU admission, mean ± SD | 20.4 **±** 7.3 | 19.0 **±** 8.1 | 0.075 | 20.4 ± 7.3 | 20.4 ± 7.5 | -0.002 |
| Sex, No. male (%) | 1,156 (64.1) | 2,895 (62.6) | 0.031 | 1,155 (64.1) | 1,454 (63.7) | 0.008 |
| Malignancies, No. (%) | 186 (10.3) | 541 (11.7) | -0.044 | 185 (10.3) | 262 (11.5) | -0.039 |
| Gastrointestinal bleeding, No. (%) | 117 (6.5) | 299 (6.5) | 0.001 | 117 (6.5) | 141 (6.2) | 0.013 |
| Surgical operation, No. (%) | 1,388 (77.0) | 3,227 (69.8) | 0.163 | 1,387 (77.0) | 1,703 (74.7) | 0.055 |
| Blood transfusion, No. (%) | 1,195 (66.3) | 2,655 (57.4) | 0.183 | 1,194 (66.3) | 1,457 (63.9) | 0.051 |
| Immunity inhibitors, No. (%) | 1,239 (68.7) | 2,983 (64.5) | 0.089 | 1,238 (68.7) | 1,546 (67.8) | 0.021 |
| Central line catheters, No. (%) | 1,404 (77.9) | 3,241 (70.1) | 0.178 | 1,403 (77.9) | 1,709 (74.9) | 0.070 |
| Onset of IMV in ICU, No. (%) | 132 (7.3) | 385 (8.3) | -0.037 | 132 (7.3) | 183 (8.0) | -0.026 |

Note. PS, propensity score; IMV, invasive mechanical ventilation; VAE, ventilator-associated event; IQR, interquartile range; APACHE, Acute Physiology and Chronic Health Evaluation; ICU, intensive care unit; SD, standard deviation.

a An absolute value ≤ 0.1 indicates a negligible difference in the mean or prevalence of a covariate between groups.

b Matching scale is 1:2, calipers value is 0.02.

# eTable 6 PS model for deaths in ICU & predicted deaths

|  |  |  |
| --- | --- | --- |
| Covariates |  Before PS matching  |  After PS matchingb  |
| **With VAE (n=1,803)** | **Without VAE (n=4,623)** | **Standardized****Differencea** | **With VAE (n=1,803)** | **Without VAE (n=2,319)** | **Standardized****Difference** |
| Age (y), median (IQR) | 59 (47-71) | 60 (48-72) | -0.045 | 59 (47-71) | 60 (48-71) | -0.023 |
| APACHE II score on ICU admission, mean ± SD | 20.4 **±** 7.3 | 19.0 **±** 8.1 | 0.075 | 20.4 ± 7.3 | 20.0 ± 7.5 | 0.046 |
| Chronic heart diseases, No. (%) | 145 (8.0) | 371 (8.0) | 0.001 | 145 (8.0) | 179 (7.7) | 0.012 |
| Chronic lower respiratory diseases, No. (%) | 251 (13.9) | 764 (16.5) | -0.073 | 251 (13.9) | 335 (14.4) | -0.015 |
| Malignancies, No. (%) | 186 (10.3) | 541 (11.7) | -0.044 | 186 (10.3) | 262 (11.3) | -0.032 |
| Gastrointestinal bleeding, No. (%) | 117 (6.5) | 299 (6.5) | 0.001 | 117 (6.5) | 141 (6.1) | 0.017 |
| Pneumonia, No. (%) | 872 (48.4) | 2,204 (47.7) | 0.014 | 872 (48.4) | 1,100 (47.4) | 0.019 |
| Multiple organ failure, No. (%) | 248 (13.8) | 686 (14.8) | -0.031 | 248 (13.8) | 311 (13.4) | 0.010 |
| Surgical operation, No. (%) | 1,388 (77.0) | 3,227 (69.8) | 0.163 | 1,388 (77.0) | 1,741 (75.1) | 0.045 |
| Blood transfusion, No. (%) | 1,195 (66.3) | 2,655 (57.4) | 0.183 | 1,195 (66.3) | 1,441 (62.1) | 0.086 |
| Immunity inhibitors, No. (%) | 1,239 (68.7) | 2,983 (64.5) | 0.089 | 1,239 (68.7) | 1,555 (67.1) | 0.036 |
| Central line catheters, No. (%) | 1,404 (77.9) | 3,241 (70.1) | 0.178 | 1,404 (77.9) | 1,739 (75.0) | 0.068 |
| Onset of IMV in ICU, No. (%) | 132 (7.3) | 385 (8.3) | -0.037 | 132 (7.3) | 181 (7.8) | -0.018 |

Note. PS, propensity score; ICU, intensive care unit; VAE, ventilator-associated event; IQR, interquartile range; APACHE, Acute Physiology and Chronic Health Evaluation; SD, standard deviation; IMV, invasive mechanical ventilation; predicted deaths included deaths in ICU and patients discharged from ICU against medical advice because of critical conditions and the desire to pass away at home.

a An absolute value ≤ 0.1 indicates a negligible difference in the mean or prevalence of a covariate between groups.

b Matching scale is 1:2, calipers value is 0.02.

# eTable 7 Adjusting factors for the clinical outcomes of VAE in the PS-matched cohorts

|  |  |  |
| --- | --- | --- |
| Outcomes | Adjusted β or OR | Adjusting factorsa |
| Logarithmic value of LOS in ICU  | β = 0.14 | Diabetes, chronic heart diseases, chronic renal disease, multiple organ failure, pneumonia, surgical operation, blood transfusion, HAIs other than PVAP and central line catheters |
| Logarithmic value of LOS in hospital  | β = 0.06 | Chronic heart diseases, chronic lower respiratory diseases, chronic renal disease, malignancies, hypertension, ARDS, pneumonia, surgical operation, blood transfusion, HAIs other than PVAP and central line catheters |
| Logarithmic value of hospitalization costs | β = 0.09 | Diabetes, chronic renal disease, gastrointestinal bleeding, multiple organ failure, immunity inhibitors, pneumonia, surgical operation, blood transfusion, HAIs other than PVAP and central line catheters  |
| Days on IMV ≥ 9d | OR = 3.86 | Diabetes, chronic heart diseases, chronic renal disease, gastrointestinal bleeding, shock, multiple organ failure, pneumonia, surgical operation, blood transfusion, onset of IMV in ICU, HAIs other than PVAP and central line catheters |
| Failure in estuation of IMV | OR = 1.68 | Diabetes, chronic heart diseases, chronic lower respiratory diseases, chronic renal disease, hypertension, ARDS, shock, multiple organ failure, pneumonia, surgical operation, blood transfusion, HAIs other than PVAP and central line catheters |
| Death in ICU | OR = 1.62 | Sex, diabetes, chronic renal disease, hypertension, ARDS, shock, surgical operation, blood transfusion, HAIs other than PVAP and central line catheters |
| Predicted deathsb | OR = 1.80 |

NOTE. VAE, ventilator-associated event; PS, propensity score; OR: odds ratio; LOS, length of stay; ICU, intensive care unit; β, unstandardized coefficients; HAI, healthcare-associated infection; PVAP, possible ventilator-associated pneumonia; ARDS, acute respiratory distress syndrome; IMV, invasive mechanical ventilation;

a There was no multicollinearity within the variables in each of the final models.

b Predicted deaths included deaths in ICU and patients discharged from ICU/hospital against medical advice because of critical conditions and the desire to pass away at home.

# eTable 8 Outcomes of patients with different VAEs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Outcomes | Patients with VAC (n=1,052) | Patients with IVAC (n=496) | Patients without PVAP (n=166) | *p* value\* |
| LOS in ICU (days), median (IQR) | 17 (10-29) | 19 (12-28) | 20 (13-28) | **0.021** |
| LOS in hospital (days), median (IQR) | 26 (16-40) | 28 (17-41) | 26 (19-40) | 0.203 |
| Hospitalization costs (CNY), median (IQR) | 149,605 (98,239-241,325) | 177,256 (121,336-253,401) | 197,814 (133,342-293,081) | **< 0.001** |
| Days on IMV, median (IQR) | 12 (7-19) | 14 (9-20) | 17 (10-22) | **< 0.001** |
| Days on IMV ≥ 9d, No. (%) | 716 (68.1) | 393 (79.2) | 141 (84.9) | **< 0.001** |
| Days on IMV after the VAE date, median (IQR) | 6 (2-12) | 7 (4-13) | 7 (4-13) | **< 0.001** |
| Days on IMV after the VAE date ≥ 7d, No. (%) | 477 (45.3) | 267 (53.8) | 97 (58.4) | **< 0.001** |
| Failure in estuation of IMV, No. (%) | 445 (42.3) | 197 (39.7) | 75 (45.2) | 0.412 |
| Deaths in ICU (mortality) | 200 (19.0) | 83 (16.7) | 31 (18.7) | 0.553 |
| Predicted deaths† (predicted mortality) | 440 (41.8) | 197 (39.7) | 74 (44.6) | 0.511 |

NOTE. VAE, ventilator-associated event; VAC, ventilator-associated condition; IVAC, infection-related ventilator-associated complication; PVAP, possible ventilator-associated pneumonia; LOS, length of stay; ICU, intensive care unit; IQR, interquartile range; CNY, China Yuan; IMV, invasive mechanical ventilation.

\* *p* values < 0.05 are shown in bold.

† Predicted deaths included deaths in ICU and patients discharged from ICU against medical advice because of critical conditions and the desire to pass away at home.

# eTable 9 Adjusting factors for the clinical outcomes of different VAE types in the multivariate analyses

|  |  |
| --- | --- |
| Outcomes | Adjusting factorsa |
| Logarithmic value of LOS in ICU  | Sex, age, APACHE II score on ICU admission, gastrointestinal bleeding, multiple organ failure, surgical operation, blood transfusion, immunity inhibitors, HAIs other than PVAP and central line catheters |
| Logarithmic value of hospitalization costs | Sex, age, APACHE II score on ICU admission, chronic lower respiratory diseases, ARDS, pneumonia, surgical operation, blood transfusion, immunity inhibitors, onset of IMV in ICU, HAIs other than PVAP and central line catheters |
| Days on IMV ≥ 9d | Sex, age, APACHE II score on ICU admission, chronic lower respiratory diseases, malignancies, pneumonia, blood transfusion, immunity inhibitors, HAIs other than PVAP and central line catheters |
| Days on IMV after the VAE date ≥ 7d | Sex, age, APACHE II score on ICU admission, malignancies, pneumonia, blood transfusion, immunity inhibitors, HAIs other than PVAP and central line catheters |

NOTE. VAE, ventilator-associated event; LOS, length of stay; ICU, intensive care unit; APACHE, Acute Physiology and Chronic Health Evaluation; HAI, healthcare-associated infection; PVAP, possible ventilator-associated pneumonia; ARDS, acute respiratory distress syndrome; IMV, invasive mechanical ventilation;

a There was no multicollinearity within the variables in each of the final models.

# eTable 10 Optimal scaling regression results of logarithmic value of hospitalization costs for VAE types

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variables** | **β** | **df** | **F** | ***p* value** | **Importance** |
| **VAE types** | **0.091** | **2** | **19.029** | **< 0.001** | **0.042** |
| Sex (male) | 0.065 | 1 | 11.410 | 0.001 | 0.009 |
| Age | -0.066 | 1 | 7.633 | 0.006 | 0.028 |
| APACHE II score on ICU admission | -0.010 | 1 | 0.175 | 0.676 | 0.000 |
| Chronic lower respiratory diseases | 0.003 | 1 | 0.052 | 0.819 | -0.001 |
| ARDS | 0.017 | 1 | 1.115 | 0.291 | 0.004 |
| Pneumonia | 0.041 | 1 | 3.437 | 0.064 | 0.015 |
| Surgical operation | 0.250 | 1 | 109.602 | < 0.001 | 0.272 |
| Blood transfusion | 0.246 | 1 | 138.160 | < 0.001 | 0.282 |
| Immunity inhibitors | 0.054 | 1 | 6.947 | 0.008 | 0.024 |
| HAIs other than PVAP | 0.246 | 1 | 95.069 | < 0.001 | 0.262 |
| Central line catheters | 0.076 | 1 | 12.089 | 0.001 | 0.052 |
| Onset of IMV in ICU | 0.058 | 1 | 5.190 | 0.023 | 0.011 |

NOTE. VAE, ventilator-associated event; df, degree of freedom; APACHE, Acute Physiology and Chronic Health Evaluation; ICU, intensive care unit; ARDS, acute respiratory distress syndrome; HAI, healthcare-associated infection; PVAP, possible ventilator-associated pneumonia; IMV, invasive mechanical ventilation.

# eTable 11 Analysis of variance and LSD-t test results of logarithmic value of hospitalization costs for VAE types

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **VAE types** | **logarithmic value of hospitalization costs****(mean ± SD)** | **Fa** | ***p* valuea** | **Comparisonsb** | **Mean differenceb** | ***p* valueb** |
| **VAC** (n=1,052) | 5.181 ± 0.302 | 16.964 | **< 0.001** | VAC vs. IVAC | -0.065 | **< 0.001** |
| VAC vs. PVAP | -0.117 | **< 0.001** |
| **IVAC** (n=496) | 5.247 ± 0.266 | IVAC vs. VAC | 0.065 | **< 0.001** |
| IVAC vs. PVAP | -0.052 | **0.046** |
| **PVAP** (n=166) | 5.298 ± 0.263 | PVAP vs. VAC | 0.117 | **< 0.001** |
| PVAP vs. IVAC | 0.052 | **0.046** |

NOTE. LSD, Least—Significant Difference; VAE, ventilator-associated event; SD, standard deviation; VAC, ventilator-associated condition; IVAC, infection-related ventilator-associated complication; PVAP, possible ventilator-associated pneumonia.

a By analysis of variance.

b By LSD-t test.

**eFigures**

# eFigure 1 Frequency of isolates of PVAP pathogens



PVAP, possible ventilator-associated pneumonia; AB, *Acinetobacter baumannii*; KP, *K lebsiella pneumoniae*.