Supplementary file 3. Sensitivity analyses.

1. The regression analysis of table 2 without the patients in whom the performance measures “mean arterial pressure (MAP) above 65 mmHg within 6 hours, no unanticipated transfer from ward to ICU, and ICU consultation, were not achieved.

Sensitivity analysis: Multivariable logistic regression analysis for in-hospital mortality

Variable	β	Adjusted OR (95%-CI)
PIRO 0-8		1
PIRO 9-17	1.29	3.64 (1.90–6.97)
PIRO ≥18	2.40	10.97 (4.83-24.92)
All performance measures achieved (= full compliance)	-1.01	0.36 (0.22-0.60)
Admission to ICU and/or MCU	1.68	5.34 (3.23-8.81)
Treatment at academic medical centre	-0.47	0.626 (0.39-1.00)

Abbreviations: PIRO= predisposition, infection, response and organ failure illness severity score. ICU = intensive care unit. MCU = medium care unit. OR= Odds ratio. CI= Confidence interval

For exact definition of quality of care indicators see text. All variables were significantly associated with in-hospital mortality except location of treatment.

For all variables β-coefficients and adjusted ORs with 95%-CIs are shown.

Hosmer-Lemeshow goodness of fit test was P=0.173.

2. The regression analysis of table 3 without the patients in whom the performance measures “mean arterial pressure (MAP) above 65 mmHg within 6 hours, no unanticipated transfer from ward to ICU, and ICU consultation, were not achieved.

Sensitivity analysis: Multivariable logistic regression analysis for in-hospital mortality with individual quality of care indicators

Variable	β	Adjusted OR (95%-CI)
PIRO 0-8		1
PIRO 9-17	1.37	3.93 (1.85-8.37)
PIRO ≥18	2.39	10.95 (4.19-28.57)
Admission to ICU/MCU	1.46	4.29 (2.42-7.58)
Treatment at academic medical centre	-0.49	0.61 (0.37-1.03)
Correct suspected source of infection	-0.72	0.59 (0.27-0.89)
Lactate measured within 6 hours	-0.18	0.83 (0.36-1.94)
Blood cultures drawn before antibiotics administration	-0.71	0.49 (0.16-1.49)
Antibiotics administration within 3 hours	0.35	1.41 (0.60-3.30)
Adequate fluid resuscitation when systolic blood pressure <90 or lactate >4mmol/L	-0.72	0.49 (0.17-1.39)
Appropriate antibiotics administered in ED	-0.928	0.40 (0.24-0.66)

Abbreviations: PIRO= predisposition, infection, response and organ failure illness severity score. ICU

= intensive care unit. MCU = medium care unit. OR= Odds ratio. CI= Confidence interval.

For exact definition of quality of care indicators see text. Treatment in the University Medical Centre was compared with treatment in an urban hospital. The quality of care indicator 'appropriate ICU consultation in ED' was excluded from the model because of co-linearity with ICU/MUC admission.

For all variables β-coefficients and adjusted odds ratios with 95%-CI are shown.

Hosmer-Lemeshow goodness of fit test was P=0.209.

Similar results were obtained with the sensitivity analysis of table 2 and 3 where MAP>65 and "no unanticipated transfer and "ICU consultation if indicated" were not considered to be a performance measure and therefore were no goals that needed to be achieved (data not shown).

3. DNR status included in multiple regression analysis revealed similar the same results with regards to the corrected odds ratio (OR) of the impact of achievement of all performance measures (full compliance).

Sensitivity analysis. Multivariable logistic regression analysis for in-hospital mortality

Variable	β	Adjusted OR (95%-CI)
PIRO 0-8		1
PIRO 9-17	1.29	3.62 (1.98-6.6)
PIRO ≥18	1.74	5.68 (2.63-12.27)
DNR status	1.46	4.30 (2.80-6.60)
All quality of care indicators attained (full	-1.19	0.31 (0.19-0.49)

compliance)		
Admission to ICU and/or MCU	1.65	5.21 (3.25-8.33)
Treatment at academic medical centre	0.038	1.04 (0.67-1.60)

Abbreviations: PIRO= predisposition, infection, response and organ failure illness severity score. ICU = intensive care unit. MCU = medium care unit. OR= Odds ratio. CI= Confidence interval

For exact definition of quality of care indicators see text. All variables were significantly associated with in-hospital mortality except location of treatment.

For all variables β-coefficients and adjusted ORs with 95%-CIs are shown.

Hosmer-Lemeshow goodness of fit test was P=0.122.

4. Propensity score analysis as an alternative analysis to investigate the impact of achievement of all performance measures on in-hospital mortality.

Sensitivity analysis: Propensity score analysis.

Variable	β	Adjusted OR
All quality of care indicators attained (full compliance)	-1.081	0.339
Propensity score	1.721	5.589
Constant	-2.874	0.056

We used logistic regression to calibrate a propensity model for the probability to attain quality of care by regressing the observed quality of care status on triage status, admission to ICU or MCU, treating physician (medical, surgical, ED physician) and PIRO score (categorized into the categories 0-8,9-17 and >17). The effect of quality-of-care on mortality outcome was then assessed from a logistic regression model using the quality of care status as predictor after adjusting for the propensity to

achieve quality of care.