

Table S1 Univariate analysis of potential risk factors for readmission

Variables	Crude HRs (95% CI)	p value
Age (per year)	1.02 (0.99 to 1.05)	0.126
Male sex	0.74 (0.44 to 1.24)	0.252
On home oxygen before index admission	1.44 (0.93 to 1.29)	0.100
BMI (per kg/m ²)	0.96 (0.91 to 1.01)	0.153
MRC score 4–5	1.47 (0.96 to 2.25)	0.080
Katz ADL score 0–4	2.04 (1.31 to 3.17)	0.002#
Charlson’s co-morbidity score 2 or above	0.98 (0.62 to 1.53)	0.912
Current smoker	0.53 (0.21 to 1.30)	0.166
Smoking history (pack-year)	0.99 (0.99 to 1.00)	0.702
History of previous intubation	0.71 (0.39 to 1.29)	0.260
History of previous NIV	1.42 (0.91 to 2.21)	0.128
FEV ₁ (% predicted)	0.99 (0.98 to 1.01)	0.434
Do-not-intubate status	1.60 (1.01 to 2.54)	0.046*
Hospitalized days in previous year >21	1.99 (1.28 to 3.09)	0.002#
Baseline respiratory rate per minute	0.98 (0.94 to 1.02)	0.249
Presence of pneumonia	1.29 (0.80 to 2.07)	0.296
Haemoglobin (per g/dl)	0.90 (0.80 to 1.02)	0.100
White cell count (per 1×10 ⁹ /mm ³)	0.99 (0.95 to 1.03)	0.654
Albumin (per g/dL)	0.97 (0.93 to 1.02)	0.187
Cor pulmonale by ECG	0.88 (0.56 to 1.39)	0.577
APACHE II score (per 5 units increase)	1.03 (0.84 to 1.25)	0.803
Highest IPAP required (per 1 ♣cm H ₂ O)	1.01 (0.93 to 1.09)	0.903
Highest EPAP required (per 1 ♣cm H ₂ O)	1.03 (0.94 to 1.13)	0.539
Duration of NIV (per day)	1.02 (0.95 to 1.10)	0.572

*Statistically significant at p<0.05; #statistically significant at p<0.01.

HR, Hazard ratio; CI, confidence interval.

Table S2 Multivariate analysis of potential risk factors for readmission

Multivariate models	Adjusted HRs (95% CI)	p value
Model 1		
Katz ADL score 0–4	1.75 (1.10 to 2.76)	0.018*
Hospitalised days in previous year >21	1.74 (1.11 to 2.74)	0.016*
Model 2		
Katz ADL score 0–4	1.66 (1.03 to 2.70)	0.039*
Hospitalised days in previous year >21	1.69 (1.07 to 2.69)	0.025*
Do-not-intubate status	1.18 (0.71 to 1.95)	0.527

*Statistically significant at $p < 0.05$.

HR, Hazard ratio; CI, confidence interval.

Table S3 Univariate analysis of potential risk factors for recurrent life-threatening event (recurrent acute hypercapnic respiratory failure requiring assisted ventilation death)

Variables	Crude HRs (95% CI)	p value
Age (per year)	1.01 (0.99 to 1.04)	0.326
Male sex	1.42 (0.79 to 2.53)	0.235
On home oxygen before index admission	2.12 (1.34 to 3.35)	0.001#
BMI (per kg/m ²)	0.93 (0.88 to 0.99)	0.026*
MRC score 4–5	2.03 (1.29 to 3.19)	0.002#
Katz ADL score 0–4	1.64 (1.04 to 2.59)	0.034*
Charlson’s co-morbidity score 2 or above	1.02 (0.63 to 1.62)	0.952
Current smoker	0.79 (0.35 to 1.83)	0.589
Smoking history (pack-year)	0.99 (0.99 to 1.01)	0.753
History of previous intubation	1.61 (0.89 to 2.94)	0.118
History of previous NIV	1.37 (0.87 to 2.16)	0.180
FEV ₁ (% predicted)	0.99 (0.97 to 1.00)	0.116
Do-not-intubate status	2.41 (1.52 to 3.79)	0.003#
Hospitalised days in previous year >21	1.95 (1.24 to 3.07)	0.004#
Baseline respiratory rate per minute	1.02 (0.98 to 1.06)	0.308
Presence of pneumonia	0.98 (0.59 to 1.63)	0.940
Haemoglobin (per g/dl)	0.89 (0.78 to 1.02)	0.083
White cell count (per 1×10 ⁹ /mm ³)	0.99 (0.95 to 1.03)	0.570
Albumin (per g/dl)	0.97 (0.93 to 1.02)	0.291
Cor pulmonale by ECG	1.07 (0.67 to 1.72)	0.769
APACHE II score (per 5 units increase)	1.26 (1.03 to 1.54)	0.028*
Highest IPAP required (per 1♣cm H ₂ O)	1.01 (0.93 to 1.09)	0.808
Highest EPAP required (per 1♣cm H ₂ O)	1.01 (0.92 to 1.12)	0.813
Duration of NIV (per day)	1.09 (1.02 to 1.19)	0.027*

*Statistically significant at p<0.05; #statistically significant at p<0.01.

HR, Hazard ratio; CI, confidence interval.

Table S4 Multivariate analysis of potential risk factors for recurrent life-threatening event (recurrent acute hypercapnic respiratory failure requiring assisted ventilation death)

Multivariate models	Adjusted HRs (95% CI)	p value
Model 1		
On home oxygen before index admission	2.07 (1.30 to 3.30)	0.002#
APACHE II score (per 5 units increase)	1.34 (1.09 to 1.66)	0.006#
BMI (per kg/m ²)	0.93 (0.87 to 0.99)	0.041*
Model 2		
On home oxygen before index admission	1.79 (1.09 to 2.93)	0.021*
APACHE II score (per 5 units increase)	1.30 (1.06 to 1.60)	0.013*
BMI (per kg/m ²)	0.93 (0.87 to 0.99)	0.040*
MRC score 4–5	1.56 (0.96 to 2.53)	0.071
Model 3		
On home oxygen before index admission	1.86 (1.12 to 3.06)	0.016*
APACHE II score (per 5 units increase)	1.31 (1.06 to 1.62)	0.012*
BMI (per kg/m ²)	0.94 (0.88 to 1.00)	0.060
Hospitalised days in previous year >21	1.35 (0.82 to 2.22)	0.233
Model 4		
On home oxygen before index admission	1.82 (1.12 to 2.94)	0.016*
APACHE II score (per 5 units increase)	1.21 (0.96 to 1.51)	0.103
BMI (per kg/m ²)	0.93 (0.87 to 0.99)	0.036*
Do-not-intubate status	1.82 (1.09 to 3.02)	0.023*

*Statistically significant at p<0.05; #statistically significant at p<0.01.
HR, Hazard ratio; CI, confidence interval.

Table S5 Univariate analysis of potential risk factors for post-discharge death

Variables	Crude HRs (95% CI)	p value
Age (per year)	1.02 (0.99 to 1.06)	0.171
Male sex	1.29 (0.67 to 2.48)	0.447
On home oxygen before index admission	2.24 (1.30 to 3.84)	0.003#
BMI (per kg/m ²)	0.93 (0.86 to 1.00)	0.049*
MRC score 4–5	3.07 (1.75 to 5.41)	<0.001#
Katz ADL score 0–4	1.75 (1.05 to 2.93)	0.033*
Charlson’s co-morbidity score 2 or above	1.13 (0.67 to 1.91)	0.646
Current smoker	0.82 (0.29 to 2.26)	0.699
Smoking history (pack-year)	0.99 (0.99 to 1.00)	0.579
History of previous intubation	1.36 (0.69 to 2.68)	0.378
History of previous NIV	1.18 (0.69 to 1.99)	0.541
FEV ₁ (% predicted)	0.99 (0.98 to 1.01)	0.463
Do-not-intubate status	2.39 (1.44 to 3.99)	0.001#
Hospitalised days in previous year > 21	1.78 (1.05 to 3.01)	0.032*
Baseline respiratory rate per minute	1.01 (0.97 to 1.05)	0.736
Presence of pneumonia	1.23 (0.70 to 2.15)	0.474
Haemoglobin (per g/dl)	0.88 (0.76 to 1.01)	0.067
White cell count (per 1×10 ⁹ /mm ³)	0.99 (0.95 to 1.04)	0.772
Albumin (per g/dl)	0.96 (0.91 to 1.02)	0.182
Cor pulmonale by ECG	1.15 (0.68 to 1.96)	0.601
APACHE II score (per 5 units increase)	1.26 (0.99 to 1.61)	0.058
Highest IPAP required (per 1 ♣cm H ₂ O)	1.02 (0.93 to 1.12)	0.712
Highest EPAP required (per 1 ♣cm H ₂ O)	1.00 (0.89 to 1.13)	0.995
Duration of NIV (per day)	1.09 (0.99 to 1.19)	0.061

*Statistically significant at p<0.05; #statistically significant at p<0.01.

HR, Hazard ratio; CI, confidence interval.

Table S6 Multivariate analysis of potential risk factors for post-discharge death

Multivariate models	Adjusted HRs (95% CI)	p value
Model 1		
MRC score 4–5	3.07 (1.75 to 5.41)	<0.001#
Model 2		
MRC score 4–5	2.59 (1.43 to 4.73)	0.002#
On home oxygen before index admission	1.61 (0.91 to 2.85)	0.104
Model 3		
MRC score 4–5	2.53 (1.35 to 4.74)	0.004#
Do-not-intubate status	1.61 (0.91 to 2.85)	0.135
Model 4		
MRC score 4–5	3.02 (1.62 to 5.63)	0.001#
Katz ADL score 0–4	1.04 (0.59 to 1.83)	0.891
Model 5		
MRC score 4–5	2.83 (1.58 to 5.07)	<0.001#
Hospitalised days in previous year >21	1.35 (0.78 to 2.33)	0.282
Model 6		
MRC score 4–5	3.11 (1.76 to 5.48)	<0.001#
BMI (per kg/m ²)	0.92 (0.84 to 1.00)	0.050

*Statistically significant at p<0.05; #statistically significant at p<0.01.

HR, Hazard ratio; CI, confidence interval.