Figure 1.

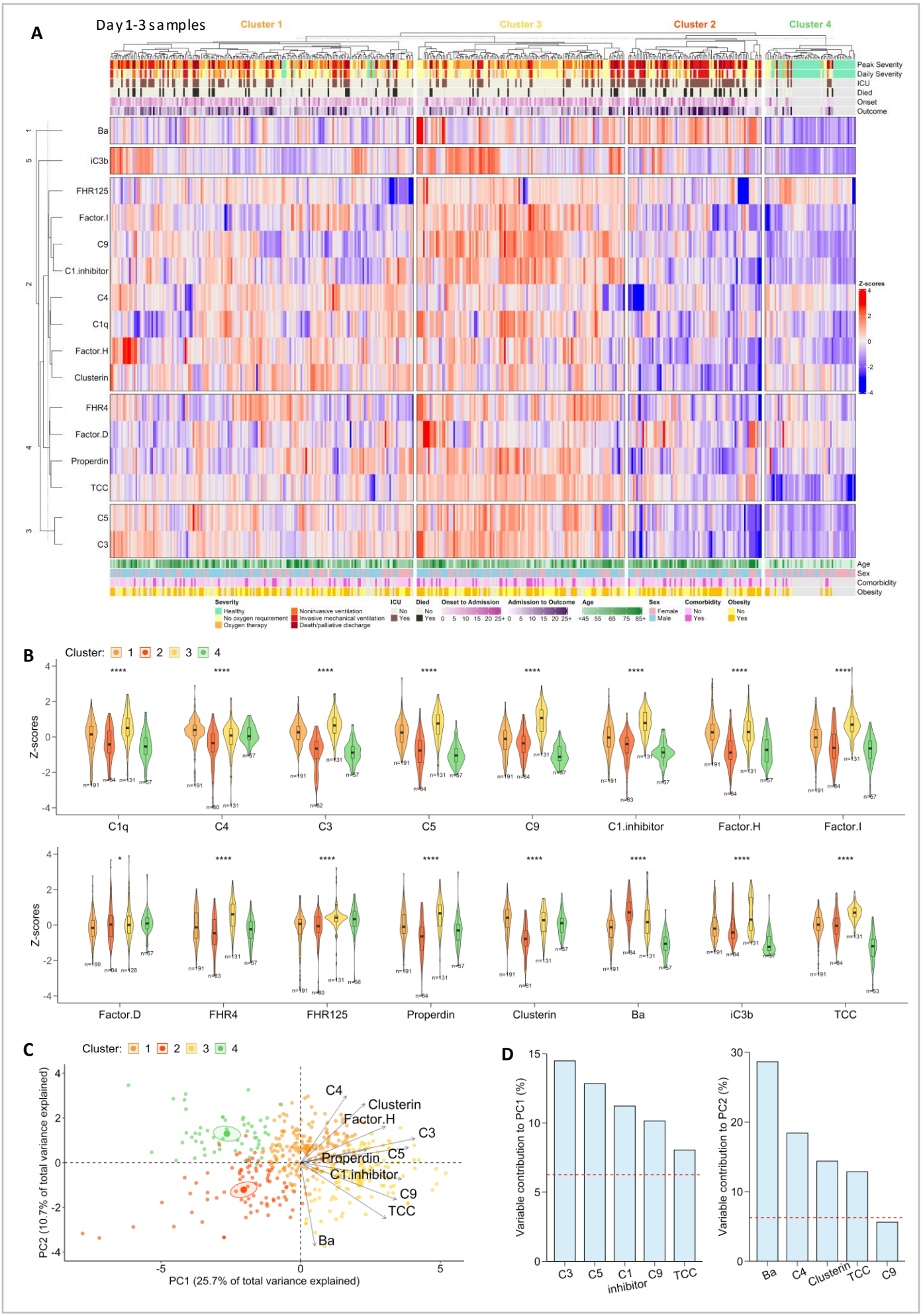

A
Day 1-3 samples
Cluster 1
Cluster 3
Cluster 2
Cluster 4
Peak Severity
Daily Severity
ICU
Died
Onset
Outcome
Ba
iC3b
FHR125
Factor.I
C9
C1.inhibitor
C4
C1q
Factor.H
Clusterin
FHR4
Factor.D
Properdin
TCC
C5
C3
Z-scores
Age
Sex
Comorbidity
Obesity
Severity
Healthy
No oxygen requirement
Oxygen therapy
Noninvasive ventilation
Invasive mechanical ventilation
Death/palliative discharge
ICU
No
Yes
Died
No
Yes
Onset to Admission
Admission to Outcome
Age
<45 55 65 75 85+
Sex
Female
Male
Comorbidity
No
Yes
Obesity
No
Yes
B
Cluster: 1 2 3 4
Z-scores
C1q
C4
C3
C5
C9
C1.inhibitor
Factor.H
Factor.I
Factor.D
FHR4
FHR125
Properdin
Clusterin
Ba
iC3b
TCC
C
Cluster: 1 2 3 4
PC2 (10.7% of total variance explained)
PC1 (25.7% of total variance explained)
C4
Clusterin
Factor.H
C3
Properdin
C5
C1.inhibitor
C9
TCC
Ba
D
Variable contribution to PC1 (%)
C3
C5
C1 inhibitor
C9
TCC
Variable contribution to PC2 (%)
Ba
C4
Clusterin
TCC
C9

Figure 2.

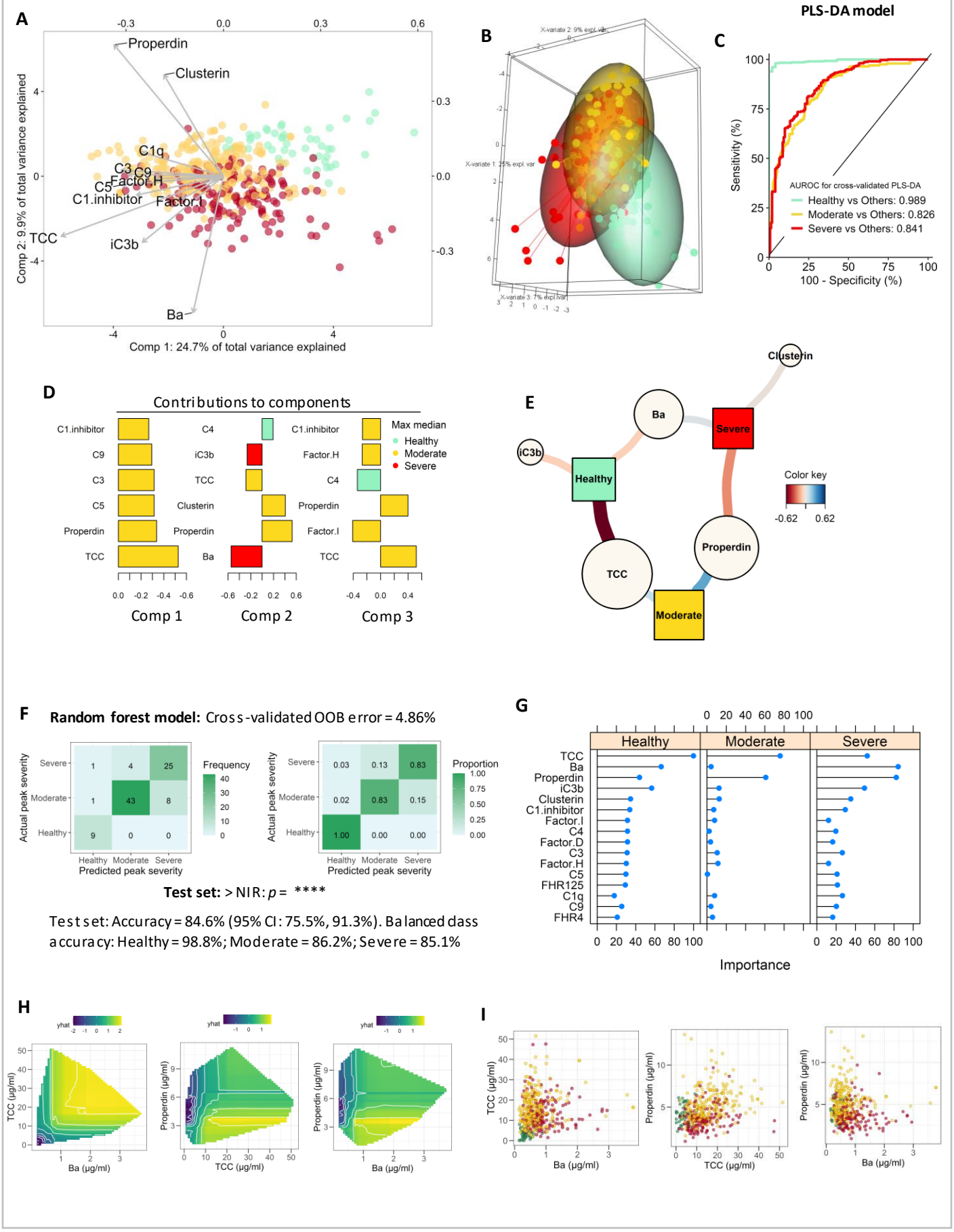
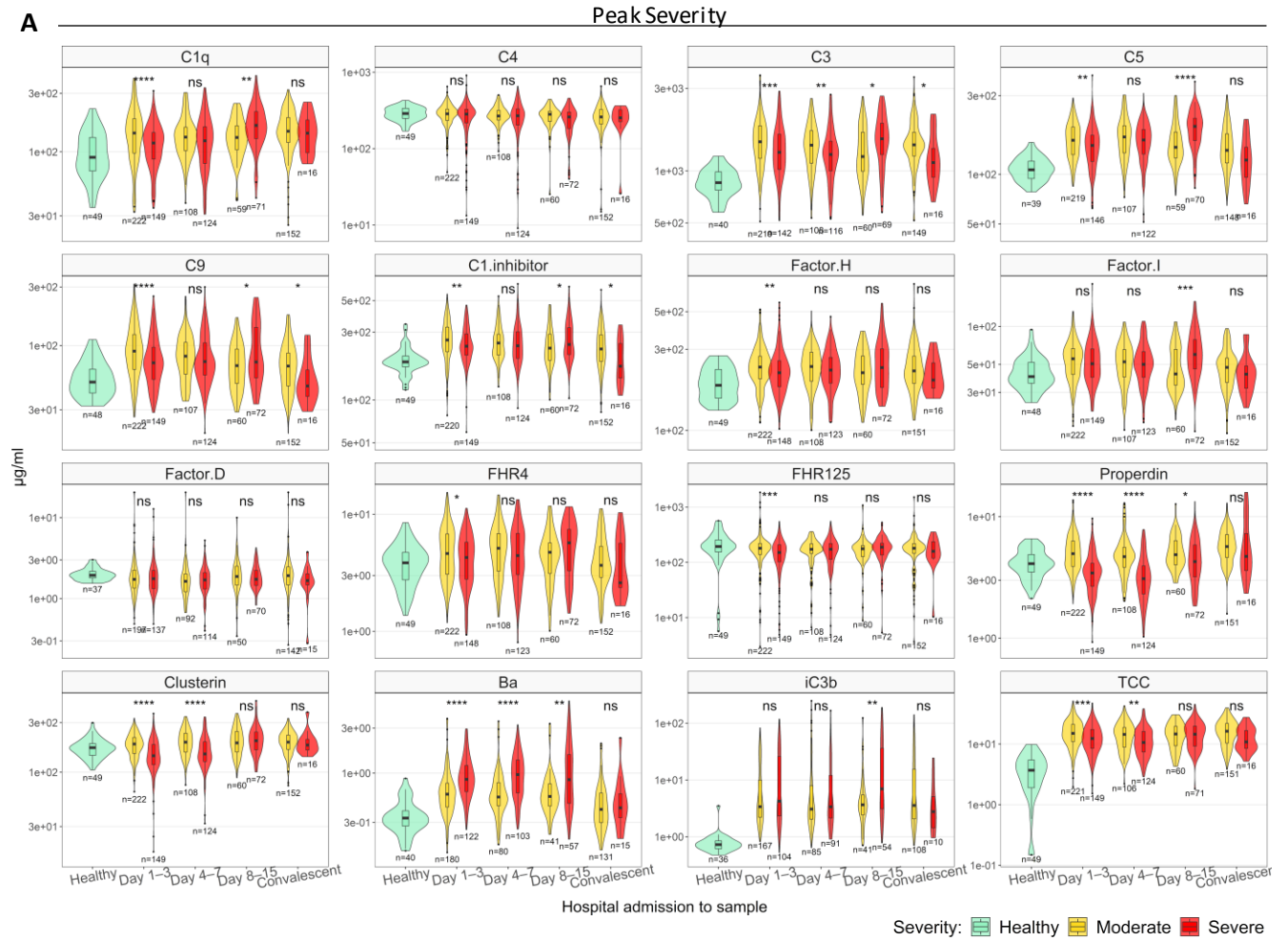

A
Properdin
Clusterin
C1q
C3
C9
Factor.H
C5
C1.inhibitor
Factor.I
TCC
iC3b
Ba
Comp 2: 9.9% of total variance explained
Comp 1: 24.7% of total variance explained
B
C
PLS-DA model
Sensitivity (%)
100 - Specificity (%)
AUROC for cross-validated PLS-DA
Healthy vs Others: 0.989
Moderate vs Others: 0.826
Severe vs Others: 0.841
D
Contributions to components
Max median
Healthy
Moderate
Severe
Comp 1
Comp 2
Comp 3
E
Clusterin
Ba
Severe
iC3b
Healthy
Color key
-0.62
0.62
Properdin
TCC
Moderate
F
Random forest model: Cross-validated OOB error = 4.86%
Actual peak severity
Predicted peak severity
Frequency
Proportion
Test set: > NIR: p = ****
Test set: Accuracy = 84.6% (95% CI: 75.5%, 91.3%). Balanced class accuracy: Healthy = 98.8%; Moderate = 86.2%; Severe = 85.1%
G
Healthy
Moderate
Severe
TCC
Ba
Properdin
iC3b
Clusterin
C1.inhibitor
Factor.I
C4
Factor.D
C3
Factor.H
C5
FHR125
C1q
C9
FHR4
Importance
H
yhat
TCC (µg/ml)
Properdin (µg/ml)
Ba (µg/ml)
I
TCC (µg/ml)
Properdin (µg/ml)
Ba (µg/ml)

Figure 3.


A
Peak Severity
C1q
C4
C3
C5
C9
C1.inhibitor
Factor.H
Factor.I
Factor.D
FHR4
FHR125
Properdin
Clusterin
Ba
iC3b
TCC
µg/ml
Healthy
Day 1–3
Day 4–7
Day 8–15
Convalescent
Hospital admission to sample
Severity: Healthy Moderate Severe

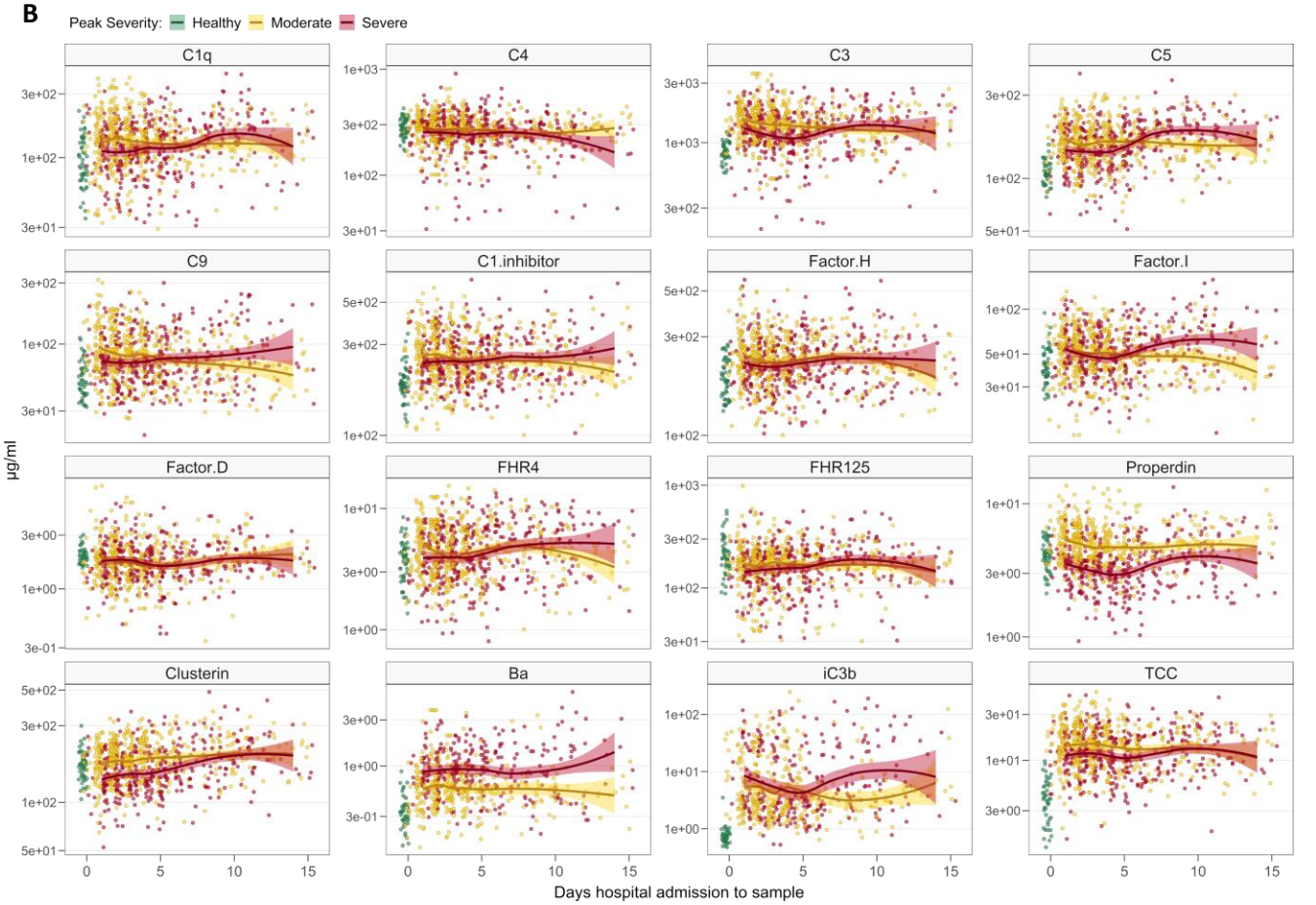
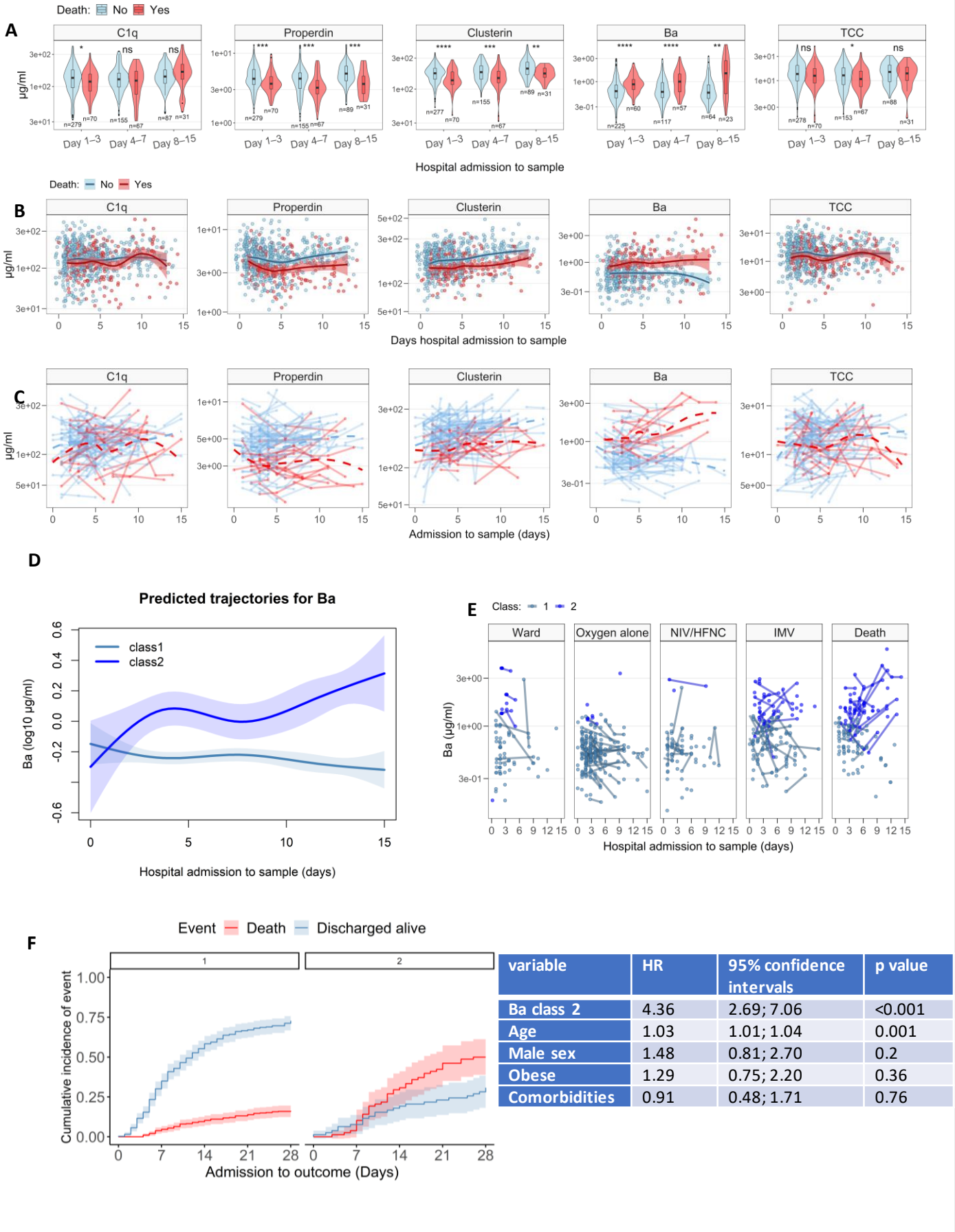
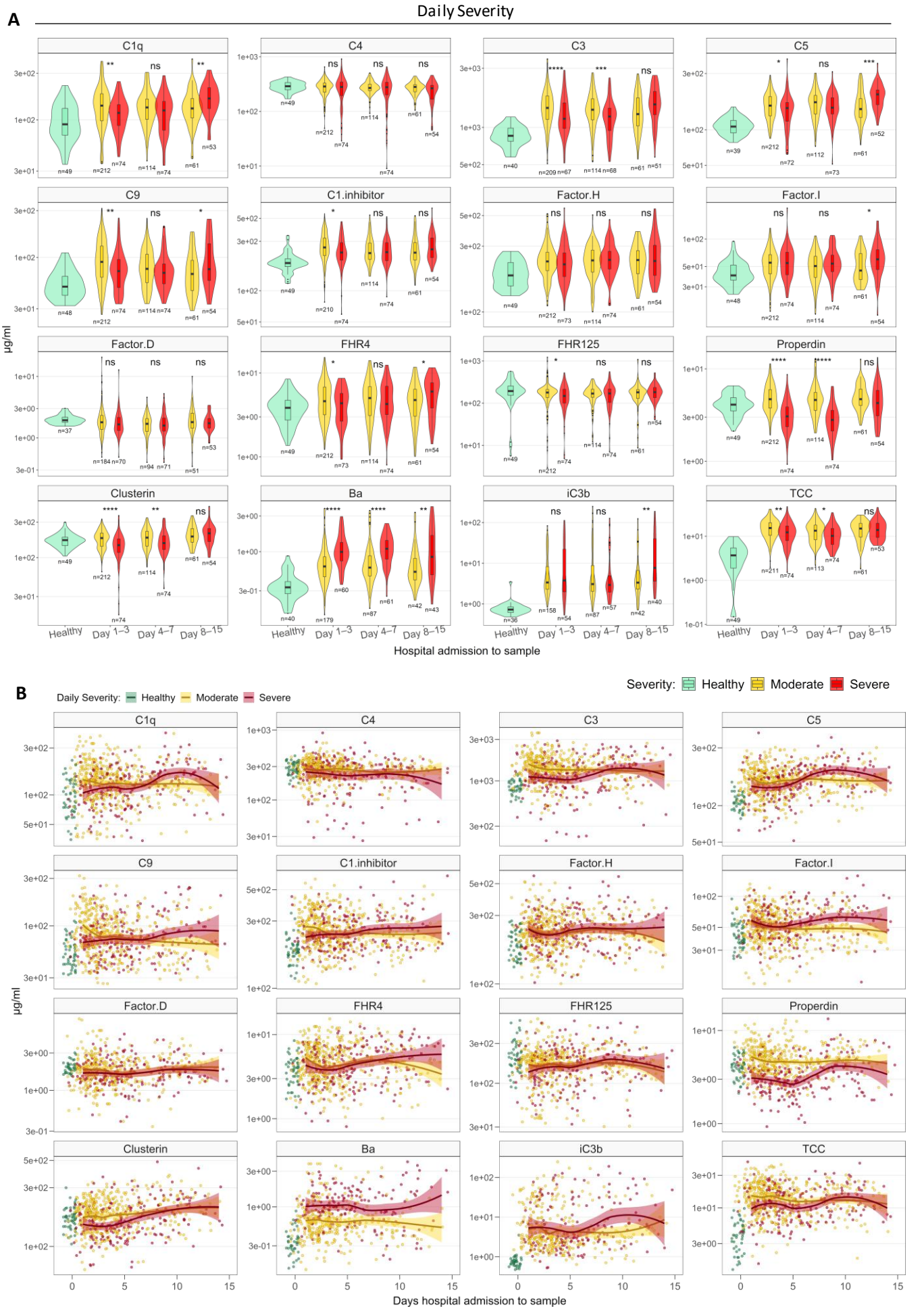
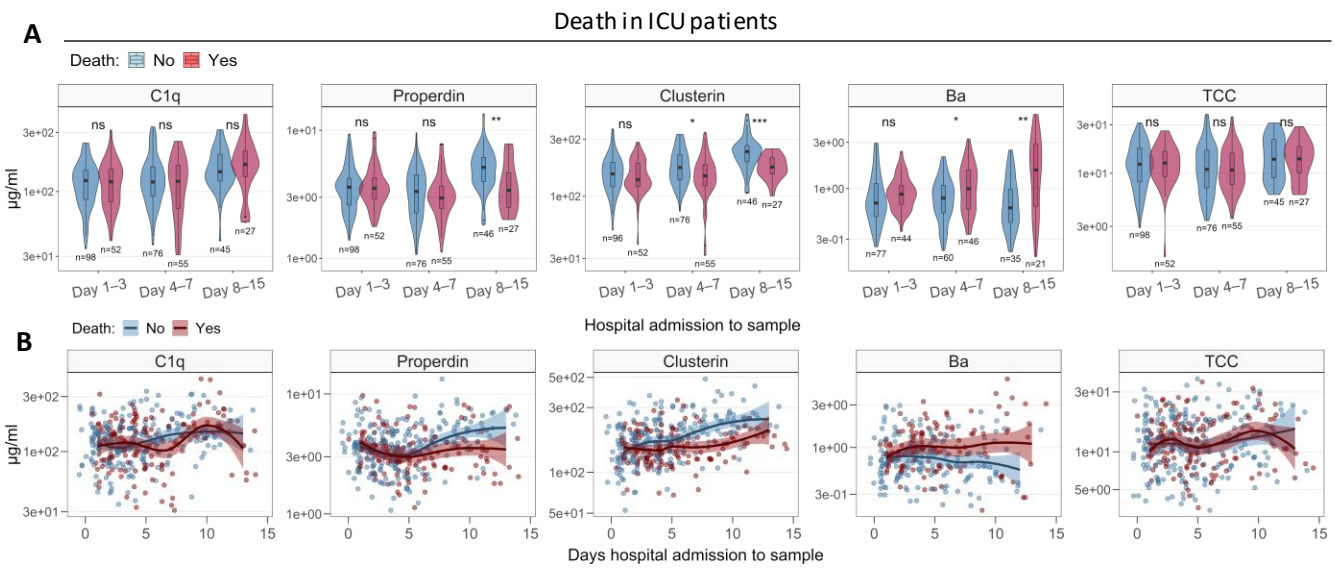

B
Peak Severity: Healthy Moderate Severe
C1q
C4
C3
C5
C9
C1.inhibitor
Factor.H
Factor.I
Factor.D
FHR4
FHR125
Properdin
Clusterin
Ba
iC3b
TCC
µg/ml
Days hospital admission to sample

Figure 4.



variable	HR	95% confidence intervals	p value
Ba class 2	4.36	2.69; 7.06	<0.001
Age	1.03	1.01; 1.04	0.001
Male sex	1.48	0.81; 2.70	0.2
Obese	1.29	0.75; 2.20	0.36
Comorbidities	0.91	0.48; 1.71	0.76

Supplementary Figure 1.



Supplementary Figure 2.