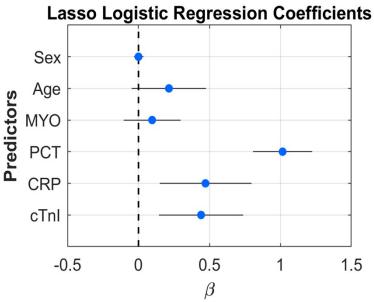
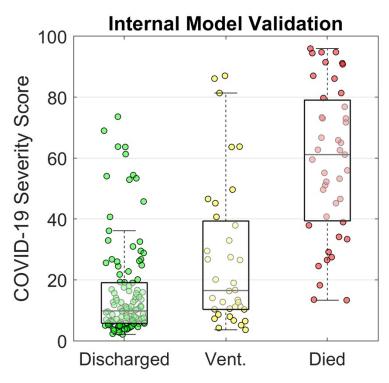
Electronic Supplementary Material (ESI) for Lab on a Chip. This journal is © The Royal Society of Chemistry 2020

## **Supplemental Figures and Tables**



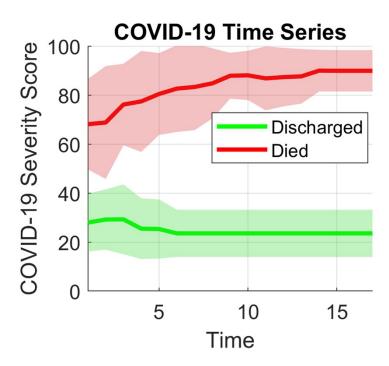
**Figure S1.** Lasso logistic regression coefficients for the COVID-19 Severity Score model. Coefficients are represented as mean (SD) from 5-fold cross-validation across 10 imputed datasets.



**Figure S2.** COVID-19 Severity Scores from internal model validation. A model was trained on data from hospitalized COVID-19 patients of which 117 were discharged and 43 died. Out of the total 160 patients, 36 received either invasive or noninvasive ventilation ("Vent."). The COVID-19 Severity Score is a numerical index between 0 and 100 that indicates the probability of COVID-19 mortality. Individual patient scores are represented as scatter dots with overlaid boxplots showing the population distribution.

**Table S1.** Diagnostic performance of the COVID-19 Severity Score, relevant patient characteristics, and biomarkers.

	AUC (95% CI)
COVID-19 Severity Score	0.94 (0.89–0.99)
Age	0.74 (0.65–0.83)
Sex	0.63 (0.53–0.73)
cTnl, pg/mL	0.94 (0.86–1.00)
CK-MB, ng/mL	0.64 (0.53–0.74)
MYO, ng/mL	0.84 (0.76–0.93)
CRP, mg/L	0.91 (0.85–0.97)
PCT, ng/mL	0.88 (0.80–0.95)



**Figure S3.** A selection of patients with multiple time course biomarker measurements were analyzed for their COVID-19 Severity Score. Solid lines represent the average scores for all patients in the group, and shaded regions show one standard deviation above and below the mean. The unit of time is arbitrary with 1 being the first measurement after admission and 17 being the last. Missing biomarker values were imputed according to their value at the previous time point.