**Supplement Figure 1:** The four states model and the possible movements between states. Patients allocate to prone or supine position based on their position after ECMO initiation. Patients can move interchangeably between “ECMO & supine” and “ECMO & prone” states. Patient eventually move from either position to hospital discharge or death. If patient comes off ECMO in prone position will remain in that position, similarly if come off ECMO in supine position will remain supine. ECMO = Extracorporeal Membrane Oxygenation

**Supplement Figure 2:** Numbers of Extracorporeal Membrane Oxygenation (ECMO) patients in both supine and prone position during ECMO support over calendar time. The top plot shows the total number of patients on ECMO every day, and the number of ECMO patients in prone position. The bottom plot shows the daily percent of patients on ECMO (black line) and a smoothed estimate of the percent (blue line). The proportion of ECMO patients in prone position has decreased over time. The increase in the smoothed estimate to October is based on very few patients.

**Supplement Figure 3:** Plot of predicted probabilities over time for the four states. There is relatively little change in patients’ states after day 40. ECMO = Extracorporeal Membrane Oxygenation

**Supplement Figure 4:** Plot of predicted cumulative probabilities of death and hospital discharge over time for cumulative regression model for patients in prone and supine position. The plots above show the cumulative predicted probabilities of death and discharge for a patient of average age and BMI. By the end of the follow-up time (day 80) there are very large gaps in the predicted probability of both death and discharge for patients in supine and prone position.

**Supplement Figure 5:** Cumulative probabilities over time of moving to prone, discharge and death states. Many patients were already prone on the day ECMO started. There is steady accumulation of death or hospital discharge up to 40 days from ECMO initiation. ECMO = Extracorporeal Membrane Oxygenation

**Supplement Figure 6:** ICU effects from the Weibull survival model for prone position. The plot shows the mean hazard ratio per ICU (circle) and 95% credible interval (horizontal line) for the 67 ICUs. The dotted vertical line is at a hazard ratio of 1 and indicates no change in hazard. ICUs below the line have a decreased hazard of prone position, whilst ICUs above the line have an increased hazard. ICUs with a lower limit above the line have been colored red. ICUs have been ordered using their mean hazard ratio. The wide credible intervals indicate large uncertainty in most ICUs, and this is because of the small number of patients in most ICUs. The hazard ratio is on a log scale (base 10).

**Supplement Figure 7:** ICU effects from the Weibull survival model for death and hospital discharge. The hazard ratio axis is on log scale (base 10). Each row is an ICU and there are two estimates per ICU: one for death and one for discharge.