

Table A1: General model equations for 30 day mortality

Centred variables		KEY ln = natural log	
Age_cent	= Age – 64	Creatinine_cent	= ln(Creatinine) - 4
Pulse_cent	= Pulse - 91	Urea_cent	= ln(Urea) - 1.9
SystolicBP_cent	= Systolic BP – 127	Potassium_cent	= Potassium - 4
Sodium_cent	= Sodium - 123	WBC_cent	= WBC - 13

Category definitions

- Respiratory[2] = Dyspnoea on exertion or CXR
- Respiratory[3] = Dyspnoea limiting exertion & at rest
- Cardiac[2] = Diuretic, digoxin, antihypertensive therapy
- Cardiac[3] = Peripheral oedema, warfarin therapy or CXR
- Cardiac[4] = Raised jugular venous pressure or CXR

CALCULATE for all patients

$$\begin{aligned}
 \text{PartA} = & 0.03200 \times \text{Female} \\
 & + 0.08938 \times \text{Cardiac}[2] + 0.3259647 \times \text{Cardiac}[3] + 0.24444 \times \text{Cardiac}[4] \\
 & - 0.11484 \times \text{Urgency}[6-18\text{hrs}] + 0.01322 \times \text{Urgency}[2-6\text{hrs}] + 0.42474 \times \text{Urgency}[<2\text{hrs}] \\
 & + 0.16550 \times \text{AF rate}[60-90] + 0.21009 \times \text{AF rate}[>90 / \text{abnormal rhythm}] \\
 & - 0.30646 \times \text{Operations}[n=2] - 0.31247 \times \text{Operations}[n>2] \\
 & + 0.14551 \times \text{Operative severity}[\text{Major+}] + 0.01149 \times \text{Blood loss}[101-500\text{ml}] \\
 & + 0.04770 \times \text{Blood loss}[501-999\text{ml}] - 0.12317 \times \text{Blood loss}[\geq 1000\text{ml}] \\
 & + 0.19592 \times \text{Soiling}[\text{Serous fluid}] - 0.00964 \times \text{Soiling}[\text{Localised pus}] \\
 & + 0.35131 \times \text{Soiling}[\text{Free bowel content, pus or blood}] \\
 & + 0.09954 \times \text{Malignancy}[\text{Primary only}] + 0.44169 \times \text{Malignancy}[\text{Nodal metastases}] \\
 & + 1.17612 \times \text{Malignancy}[\text{Distant metastases}] \\
 & + 0.60558 \times \text{Glasgow coma score}[9-12] + 0.82952 \times \text{Glasgow coma score}[3-8] \\
 & + 0.01170 \times \text{Pulse_cent} - 0.0001129 \times \text{Pulse_cent}^2 \\
 & - 0.00782 \times \text{SystolicBP_cent} + 0.0001201 \times \text{SystolicBP_cent}^2 \\
 & - 0.25180 \times \text{Creatinine_cent} + 0.2250538 \times \text{Creatinine_cent}^2 \\
 & - 0.11405 \times \text{Potassium_cent} + 0.2394057 \times \text{Potassium_cent}^2 \\
 & + 0.32310 \times \text{Urea_cent} - 0.0406424 \times \text{Urea_cent}^2 \\
 & - 0.00062 \times \text{WBC_cent} + 0.0009041 \times \text{WBC_cent}^2 \\
 & - 0.00082 \times \text{Sodium_cent}^3 + 0.0002584 \times [\text{Sodium_cent}^3 \times \ln(\text{Sodium_cent})]
 \end{aligned}$$

For patients with ASA	Calculate Log odds of 30 day mortality as:
1-2	Log (odds) = PartA -4.11832 + 0.0556509 x Age_cent + 0.0003635 x Age_cent ² + 0.7285072 x Respiratory[2] + 1.251223 x Respiratory[3]
3	Log (odds) = PartA -4.11832 + 0.8959784 + (0.0556509-0.0163981) x Age_cent + (0.0003635 - 0.0002042) x Age_cent ² + (0.7285072 - 0.382044) x Respiratory[2] + (1.251223 - 0.597705) x Respiratory[3]
4	Log (odds) = PartA -4.11832 + 1.822416 + (0.0556509-0.0253105) x Age_cent + (0.0003635 - 0.0000425) x Age_cent ² + (0.7285072 - 0.5330661) x Respiratory[2] + (1.251223 - 0.8656163) x Respiratory[3]
5	Log (odds) = PartA -4.11832 + 2.8656163 + (0.0556509 - 0.0270848) x Age_cent + (0.0003635 - 0.0002982) x Age_cent ² + (0.7285072 - 0.8290239) x Respiratory[2] + (1.251223 - 1.107162) x Respiratory[3]