Cox PH

1 Model Output

Table 1: Example Model Output

Variable	Parameter Estimate β	Standard Error *SE*	$\Pr > \chi^2$ *p-value*	Hazard Ratio *HR*	95% Conf. Interval	
age2	0.04687	0.51864	0.9280	1.048	0.379	2.896
age3	0.98560	0.44537	0.0269	2.679	1.119	6.414
age4	1.26299	0.41554	0.0024	3.536	1.566	7.984

Hazard Ratio:	$\exp(\beta)$	$e^{0.047} = 1.048$	for a (0,1) exposure variable (no interaction)
95% CI for $\boldsymbol{\beta}$:	$\beta \pm 1.96 \cdot SE$	$0.047 \pm 1.96 \cdot 0.519 = [-0.970, 1.063]$	(not shown above)
95% CI for *HR*:	$\exp(\beta \pm 1.96 \cdot SE)$	$[e^{-0.970}, e^{1.063}] = [0.379, 2.896]$	

Questions
Do the confidence intervals contain 1? *or* Is the *p-value* significant?
How wide are the confidence intervals?

2 Cox Model Formulas

$h(t, \boldsymbol{X}) = h_0(t) \exp(\sum_{i=0}^{p} \beta_i X_i)$ where $\boldsymbol{X} = (X_1, X_2, ..., X_p)$ are the *time-independent* predictors.