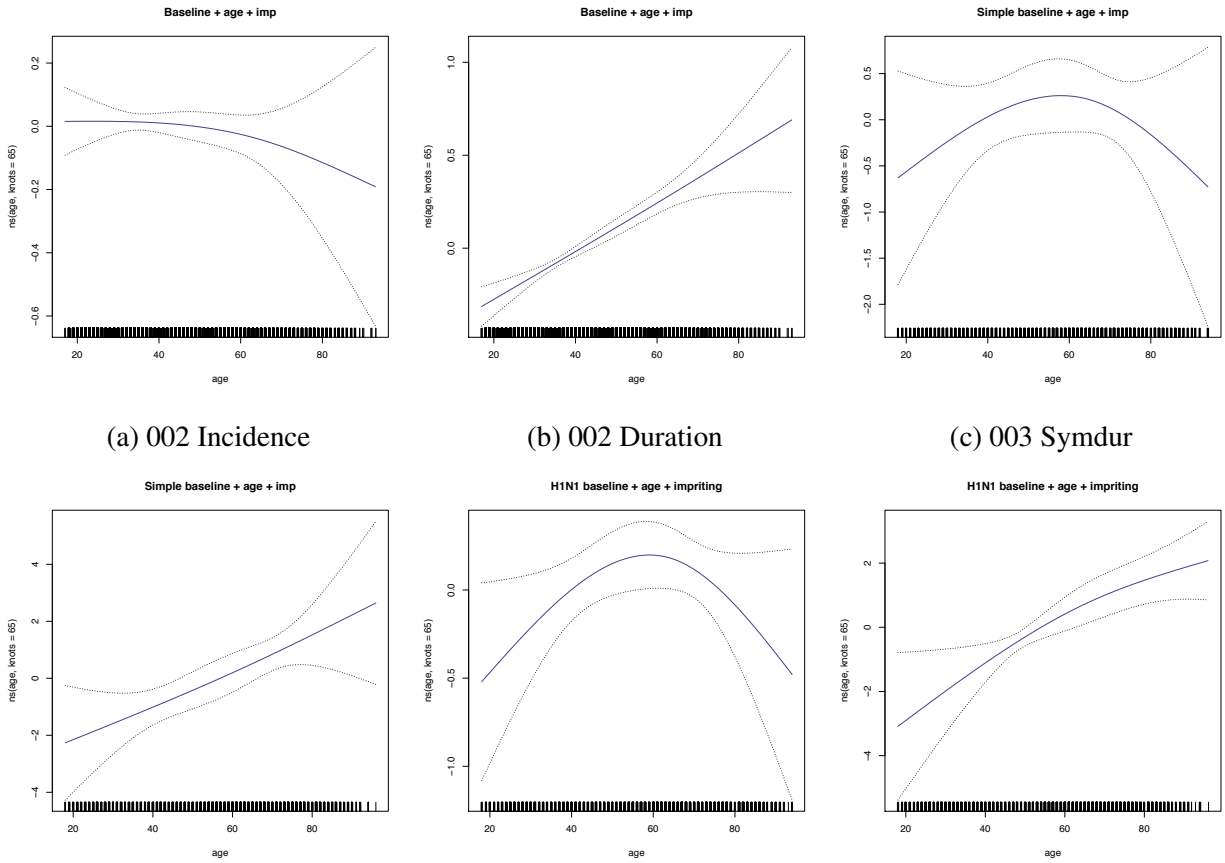
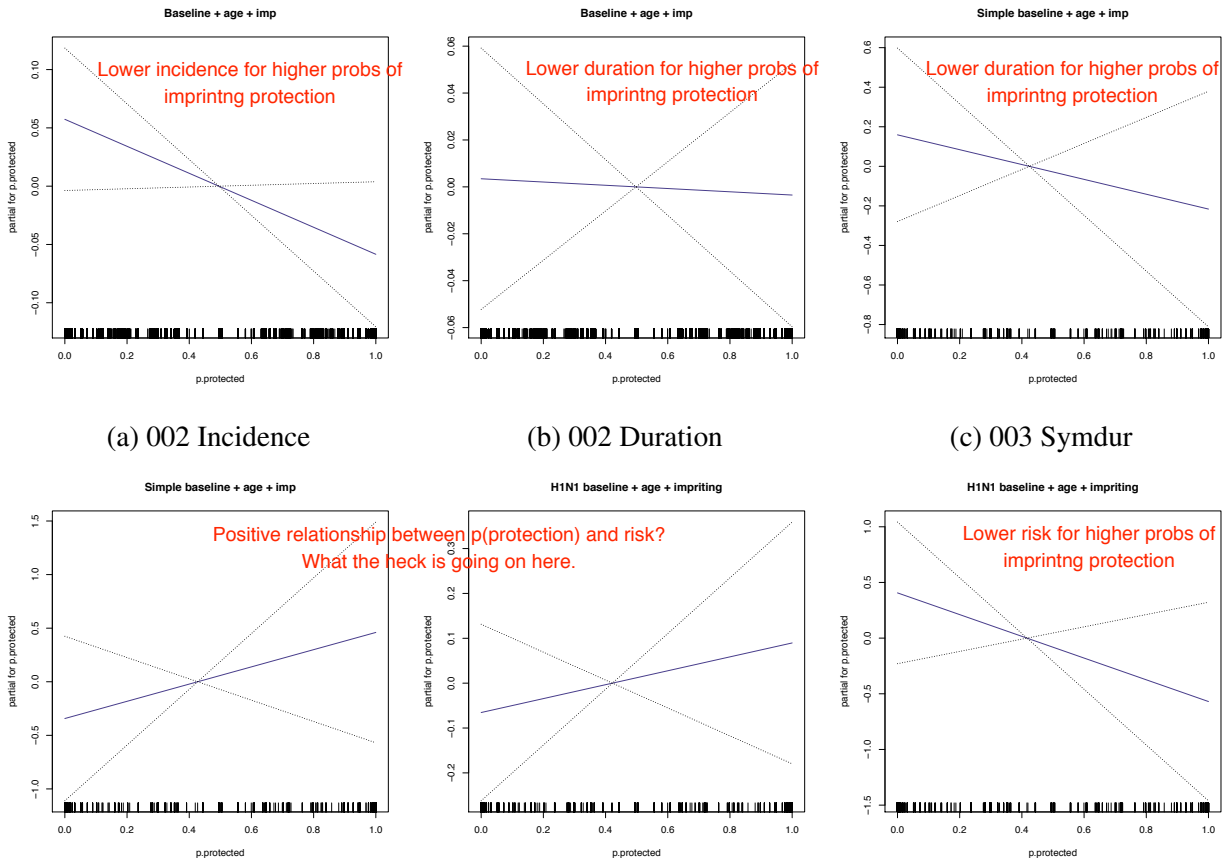


(a) 002 Incidence (b) 002 Duration (c) 003 Symdur

(d) 003 Hospdays (e) 003 ICU (f) 003 Death

Figure 1: Age effects

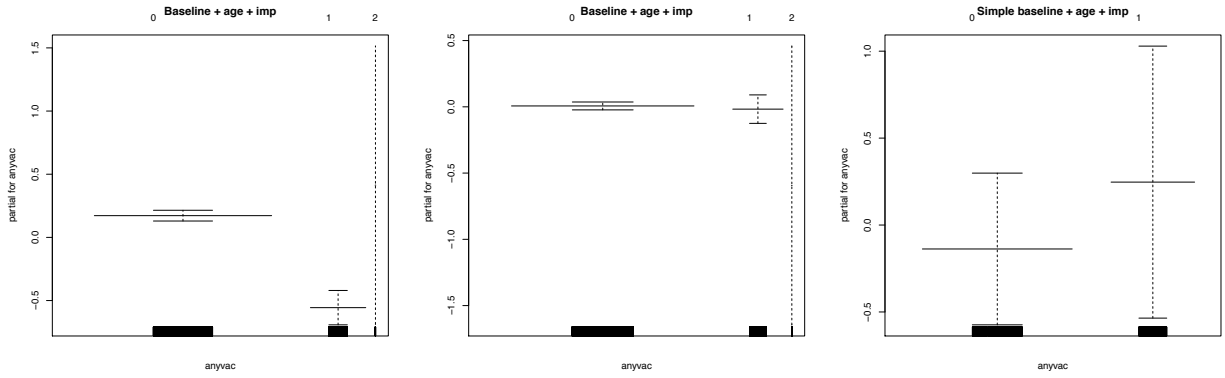
X-axis shows age [18 -> 100], Y-axis represents risk (higher values = higher risk of outcome)



(a) 002 Incidence (b) 002 Duration (c) 003 Symdur

(d) 003 Hospdays (e) 003 ICU (f) 003 Death

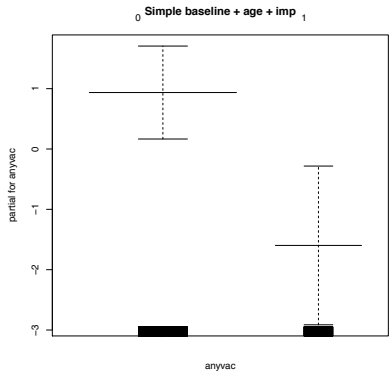
Figure 2: Imprinting effects



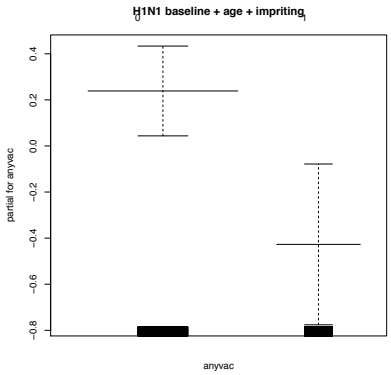
(a) 002 Incidence

(b) 002 Duration

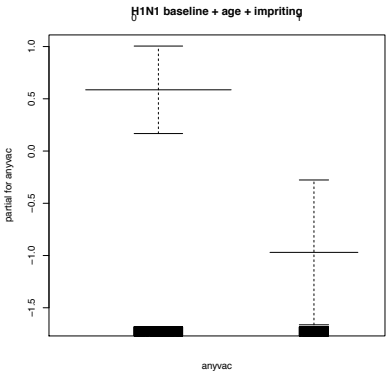
(c) 003 Symdur



(d) 003 Hospdays



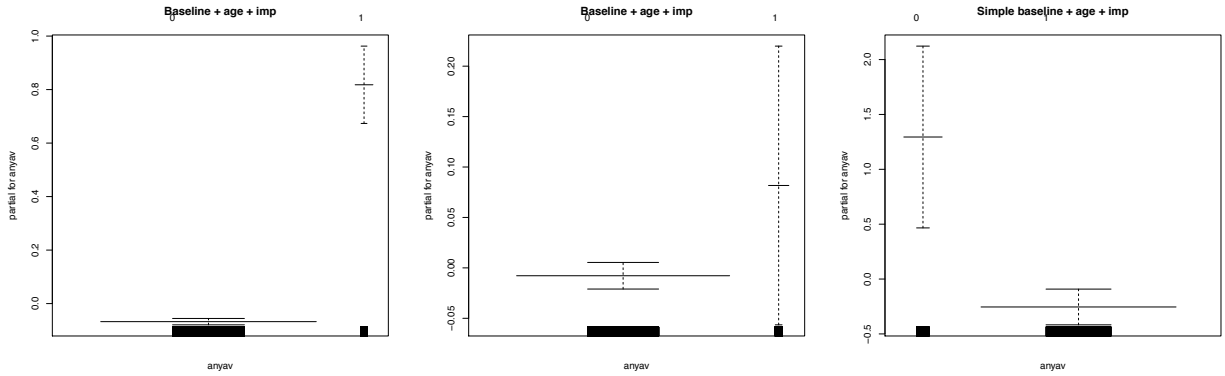
(e) 003 ICU



(f) 003 Death

Figure 3: Constrained vaccine effects

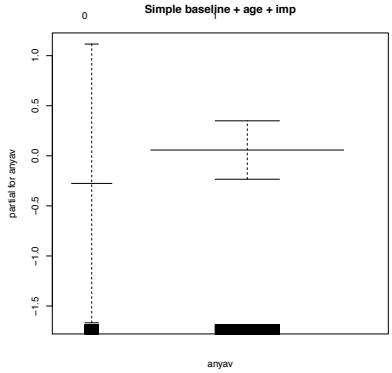
Unvaccinated individuals (left) are at higher risk of every outcome except 002 prolonged infection (an outcome that uses crappy data).



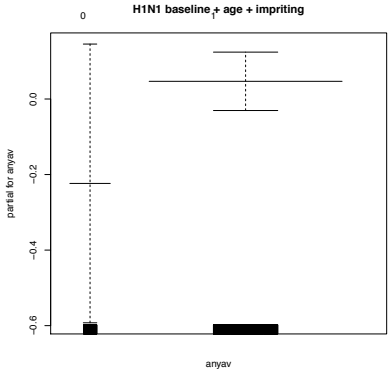
(a) 002 Incidence

(b) 002 Duration

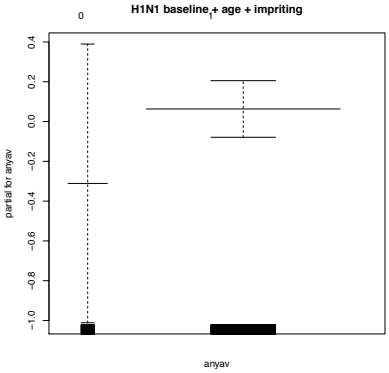
(c) 003 Symdur



(d) 003 Hospdays



(e) 003 ICU

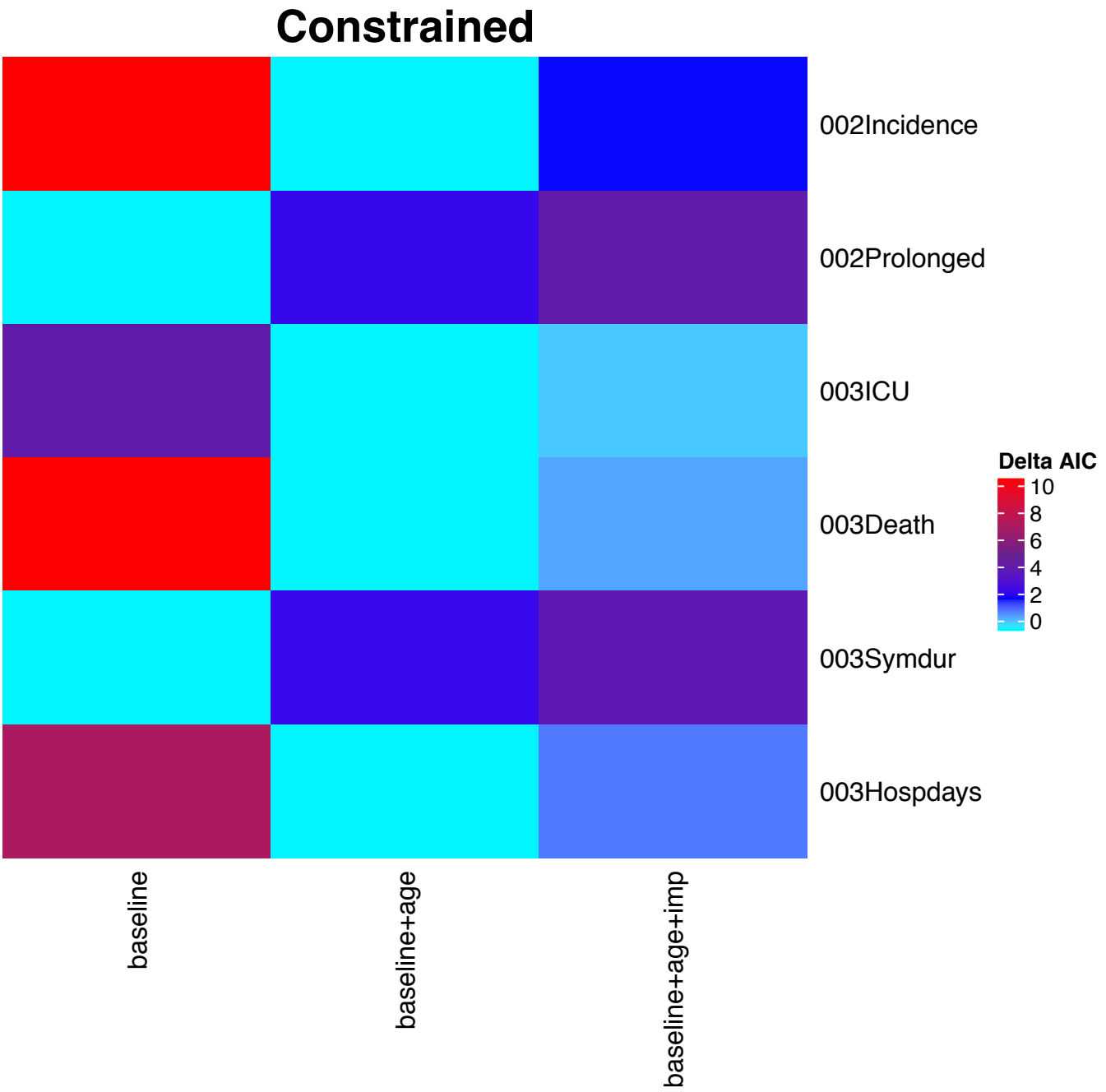


(f) 003 Death

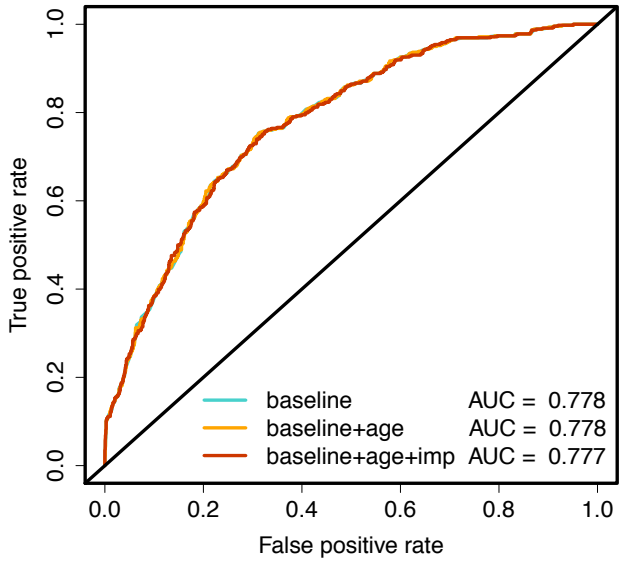
Figure 4: Antiviral effects

Antiviral use is associated with higher risk everywhere but 003 symdur. Might reflect the fact that people who are sicker get treated with antivirals.

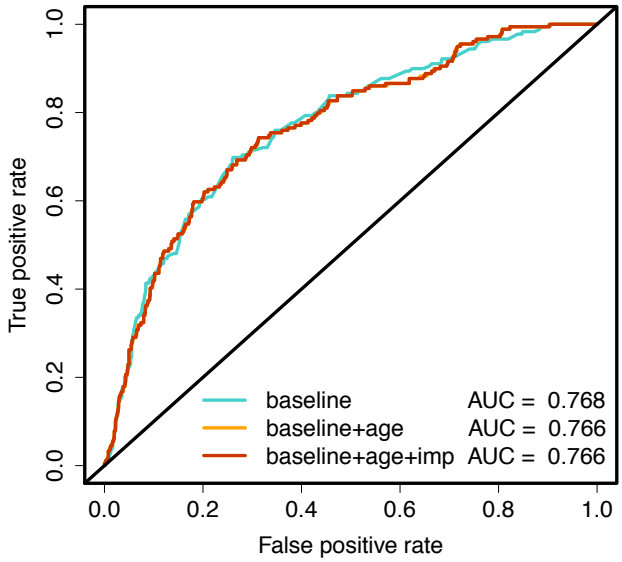
I fit to 90% of the data and held 10% of the data out as a validation set.
AIC measures fit to the 90% set (training data).
Baseline model: blocking variables only (season, country, av use, vaccination, underlying symptoms)
Baseline + age spline is usually the preferred model.
Baseline + age + imprinting is usually within 2 AIC units of Baseline+age (so imprinting improves the fit, but not enough to justify the additional paramter).



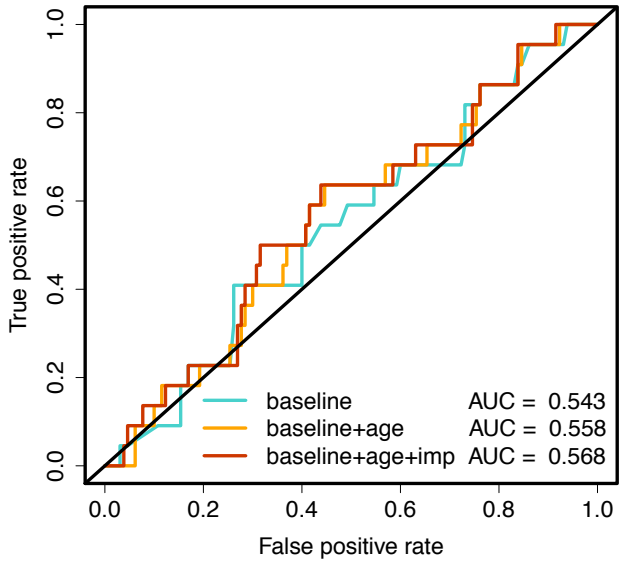
ROC curves and AUC calculated using the validation set (10% of data not used for model fitting).
—> We can do a pretty good job predicting these outcomes using just the baseline model (country, season, vaccination status, antivial use and underlying sx).
—> Addition of age and imprinting patterns doesn't really improve prediction accuracy above and beyond the baseline model.



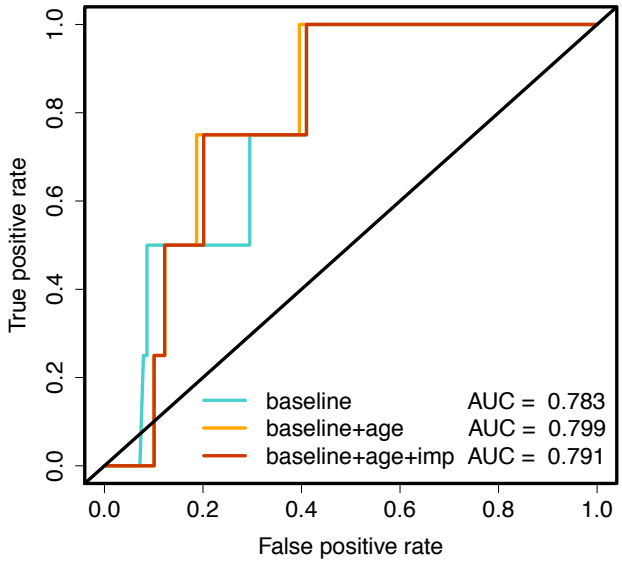
(a) 002 Incidence



(b) 002 Duration



(c) 003 ICU



(d) 003 Death

Figure 5: ROC curve and AUC Values

Tentative conclusions:
—> We often, but not always find a negative relationship between imprinting protection and risk.
—> But this relationship is not universal. E.g. positive relationship between imprinting protection and ICU risk.
—> Neither AIC nor cross-validation (AUC) points to inclusion of imprinting in the best model. While we can't rule out some imprinting effects, they don't seem to be strong predictors of incidence or severity outcomes.