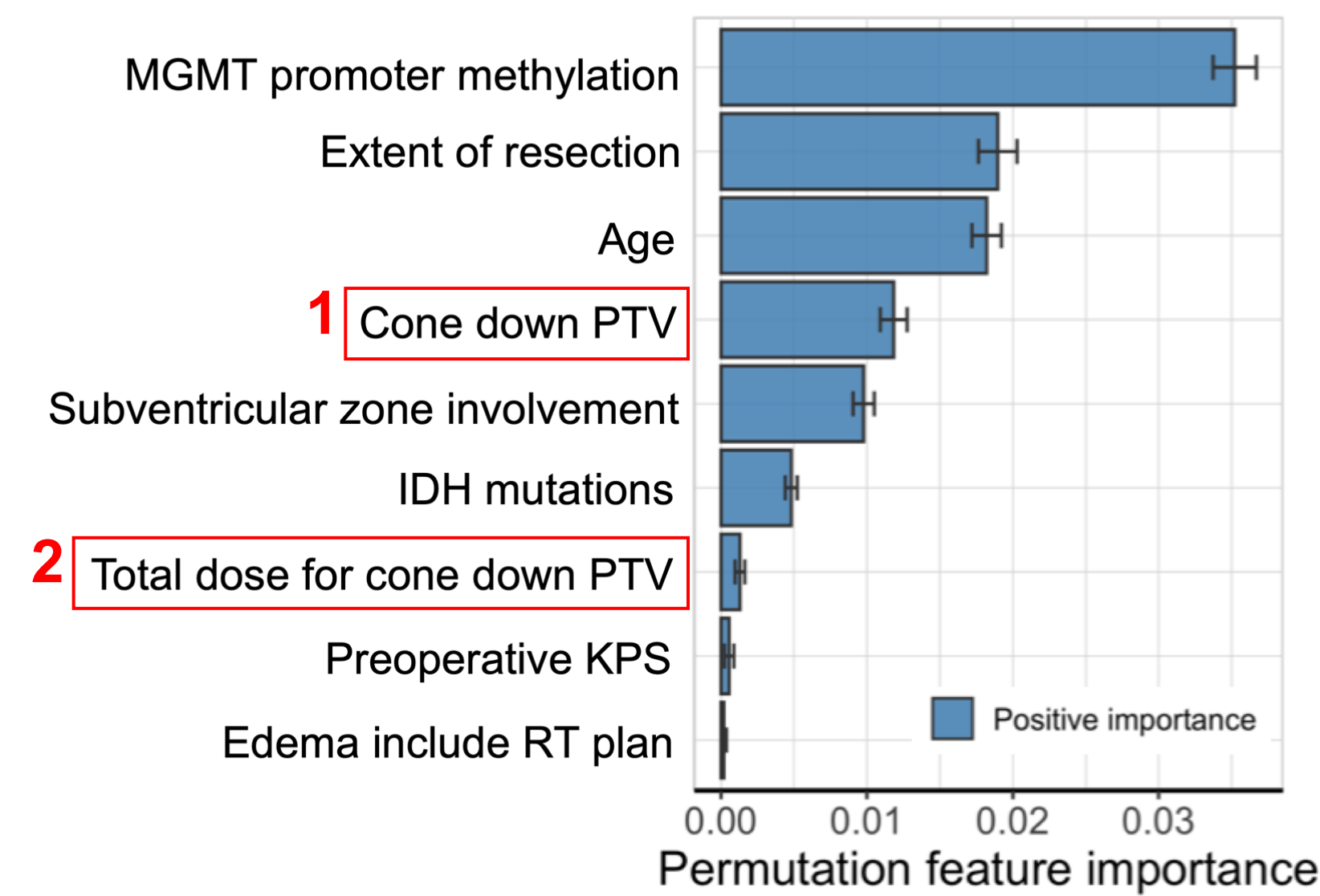
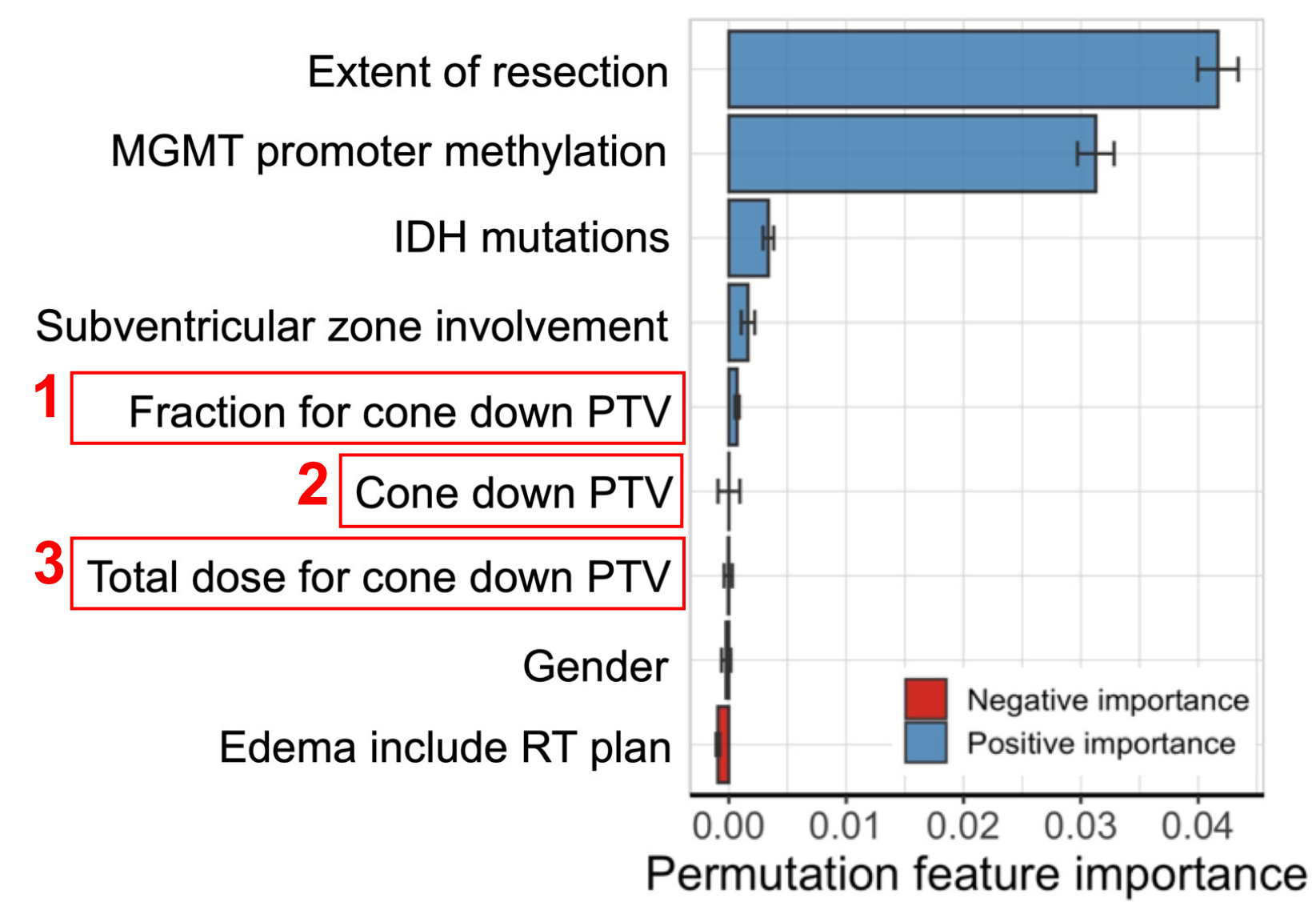


Feature importance for the selected input features

→ Overall Survival



→ Progression Free Survival

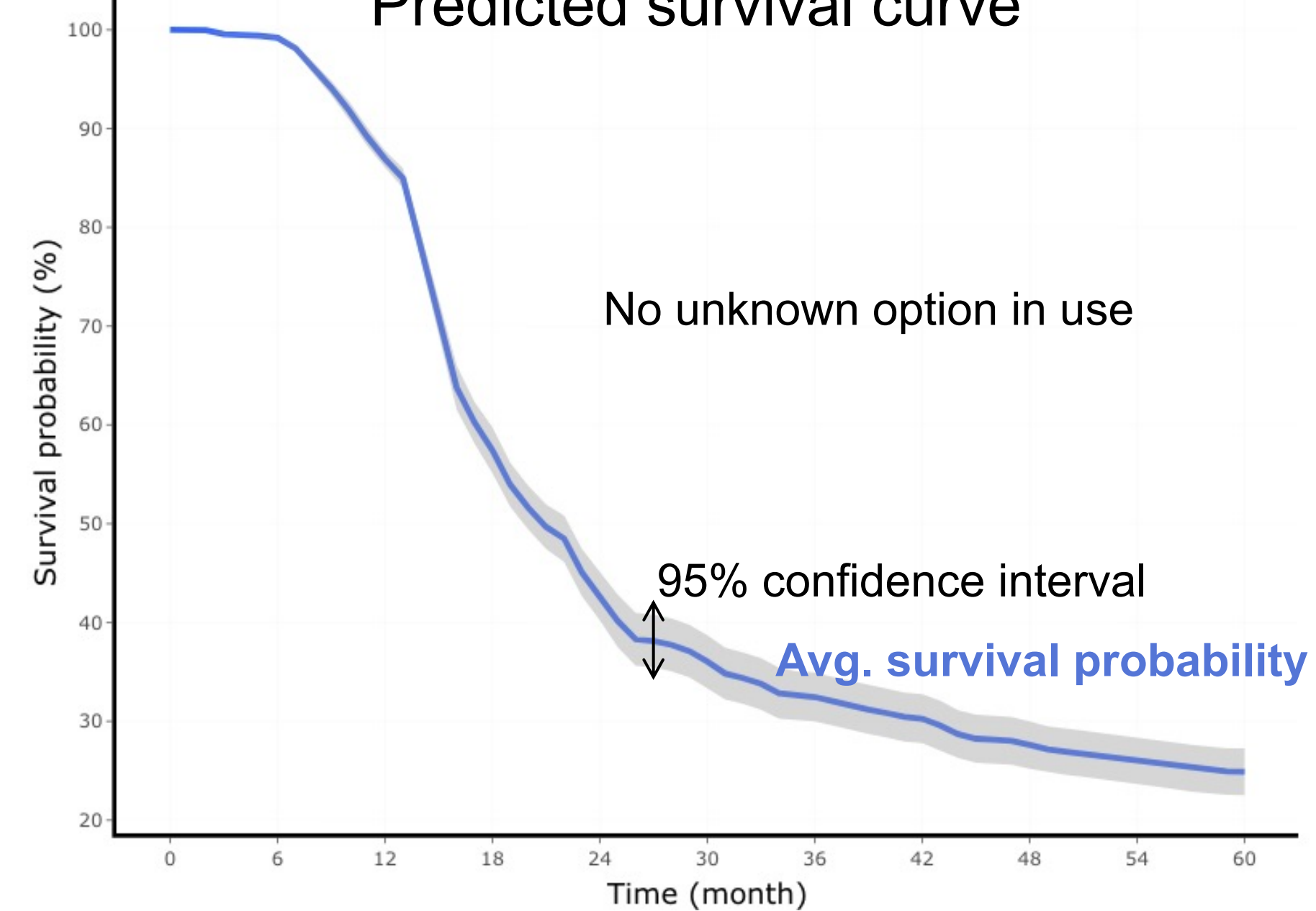


Prior unknown option (draw type #)	Substituted value for OS prediction			Selected unknown options			Substituted value for PFS prediction			Prior unknown option (draw type #)
	Cone down PTV	Total dose for cd PTV	Fractions for cd PTV	Cone down PTV	Total dose for cd PTV	Fractions for cd PTV	Cone down PTV	Total dose for cd PTV	Fractions for cd PTV	
Cone down PTV (1)	Min ~ Max (6 ~ 760 cm ²)		Not a selected feature for OS prediction.	O			Min ~ Max (6 ~ 760 cm ²)			Cone down PTV (2)
Cone down PTV (1)	Min ~ Max (6 ~ 760 cm ²)	Median (60 Gy)		O	O		Median (121 cm ²)	Median (60 Gy)		Cone down PTV (2)
Cone down PTV (1)	Min ~ Max (6 ~ 760 cm ²)	Median (60 Gy)		O	O	O	Median (121 cm ²)	Median (60 Gy)	Min ~ Max (30 ~ 35 #)	Fractions for cd PTV (1)
Cone down PTV (1)	Min ~ Max (6 ~ 760 cm ²)			O		O	Median (121 cm ²)		Min ~ Max (30 ~ 35 #)	Fractions for cd PTV (1)
Total dose for cd PTV (2)		Min ~ Max (54 ~ 70 Gy)			O	O		Median (60 Gy)	Min ~ Max (30 ~ 35 #)	Fractions for cd PTV (1)
Total dose for cd PTV (2)		Min ~ Max (54 ~ 70 Gy)			O			Min ~ Max (54 ~ 70 Gy)		Total dose for cd PTV (3)
-						O			Min ~ Max (30 ~ 35 #)	Fractions for cd PTV (1)

(b)

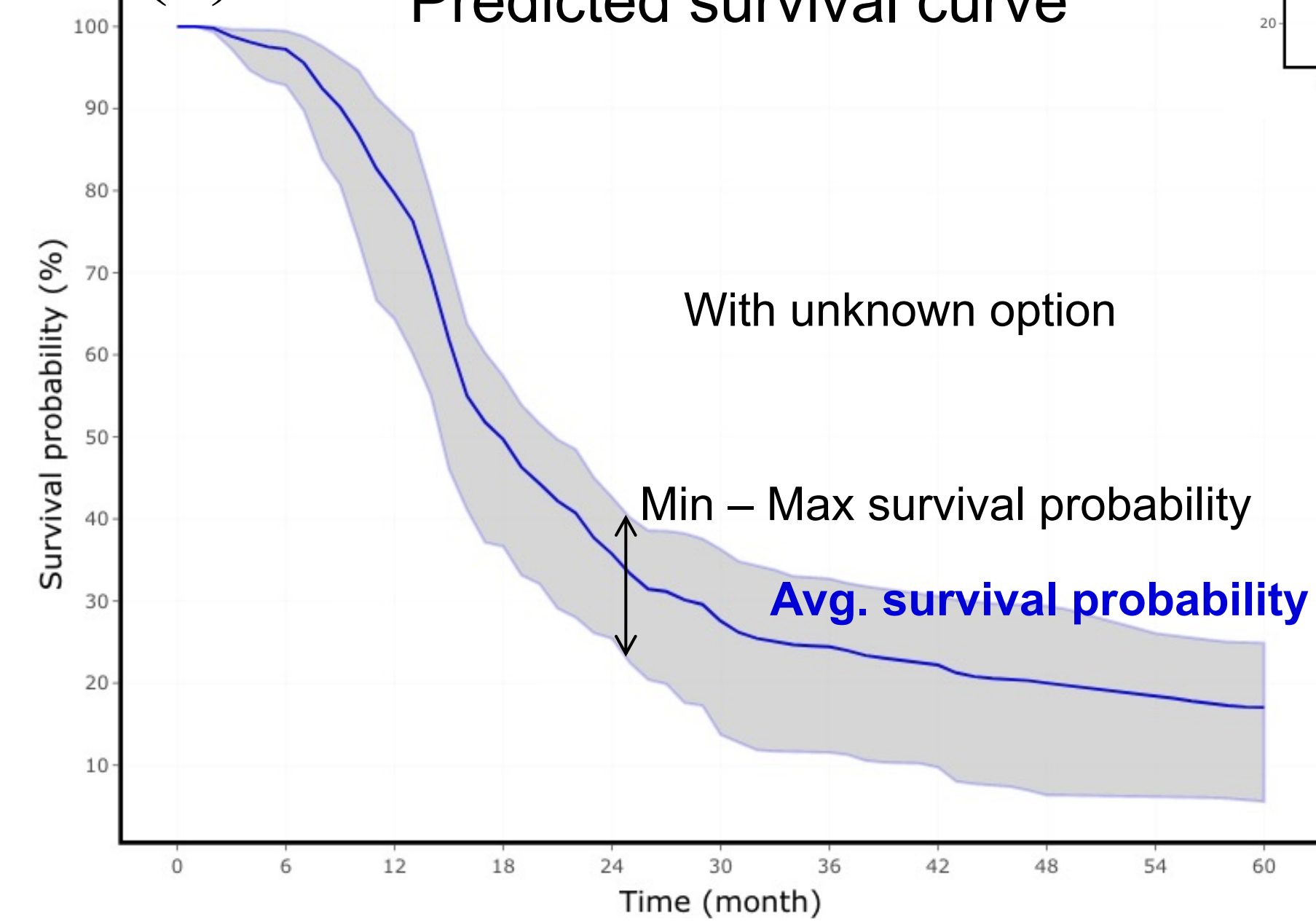
(c)

Predicted survival curve



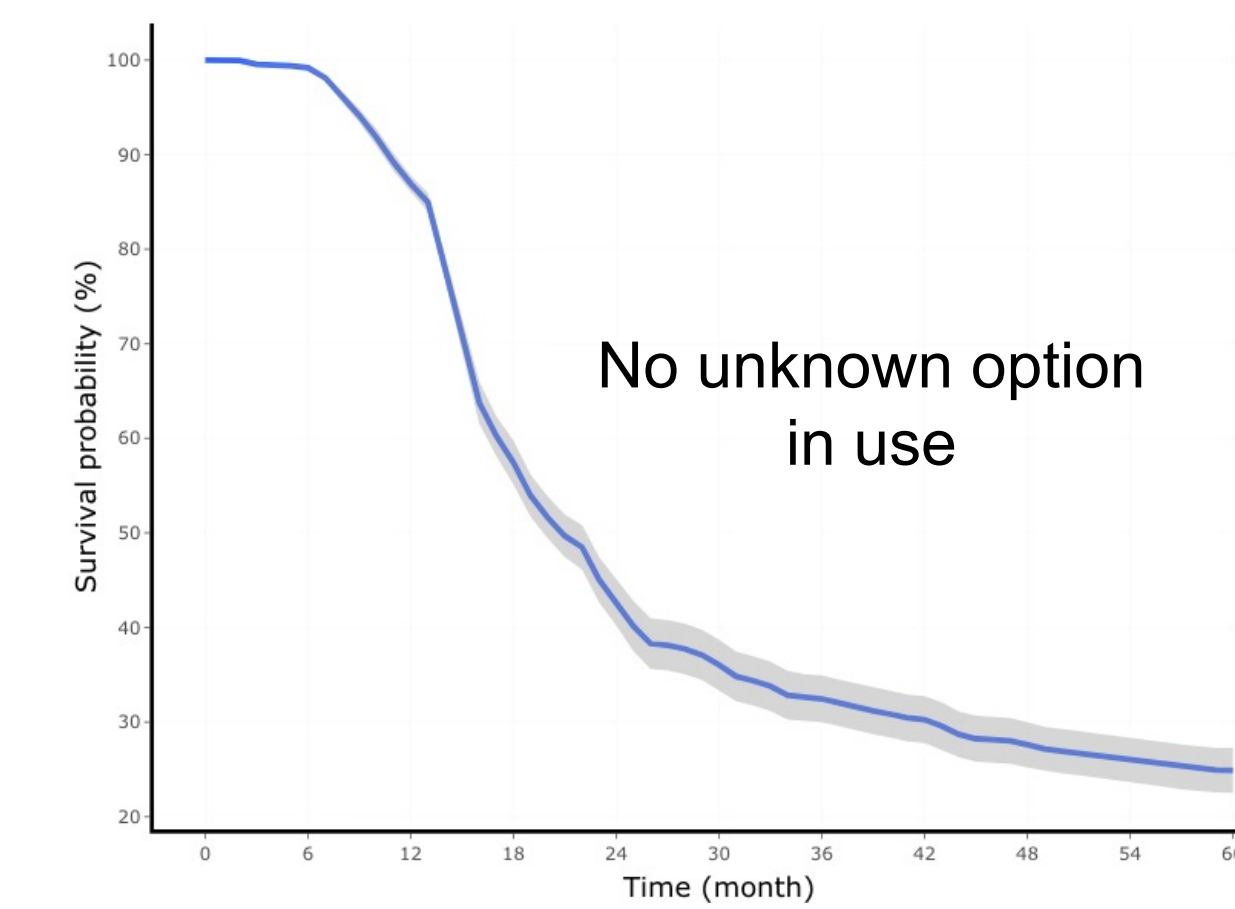
(d)

Predicted survival curve

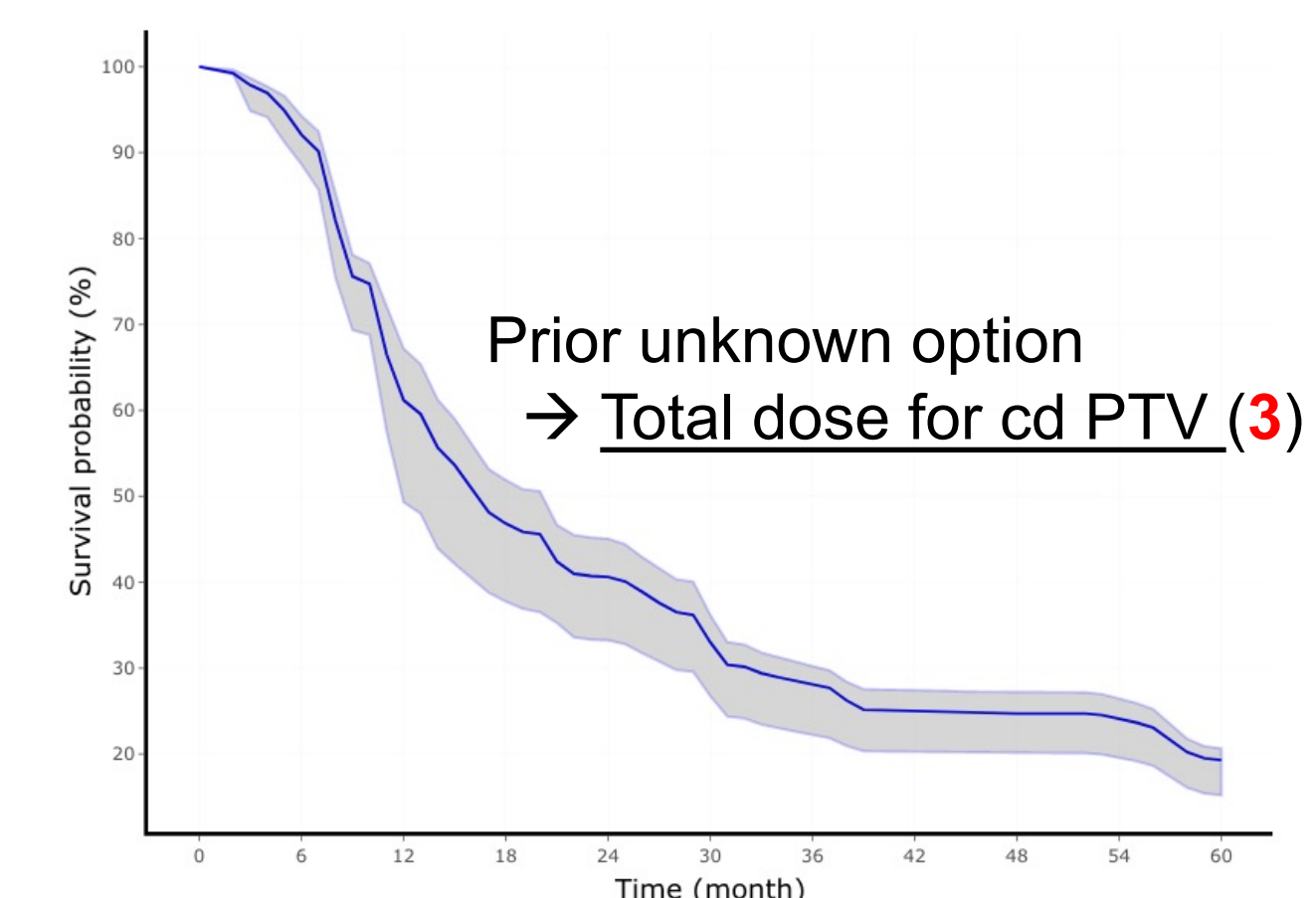
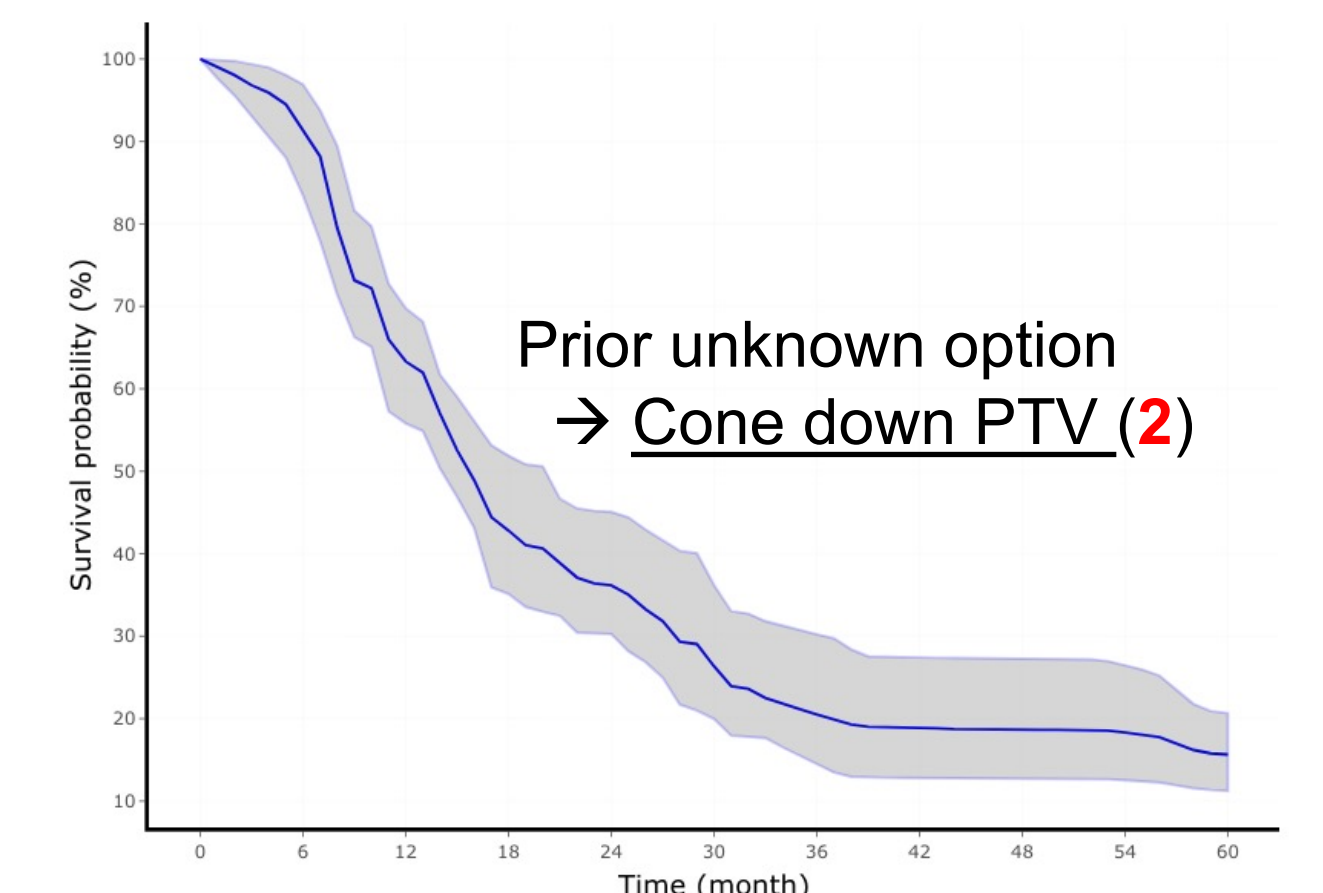
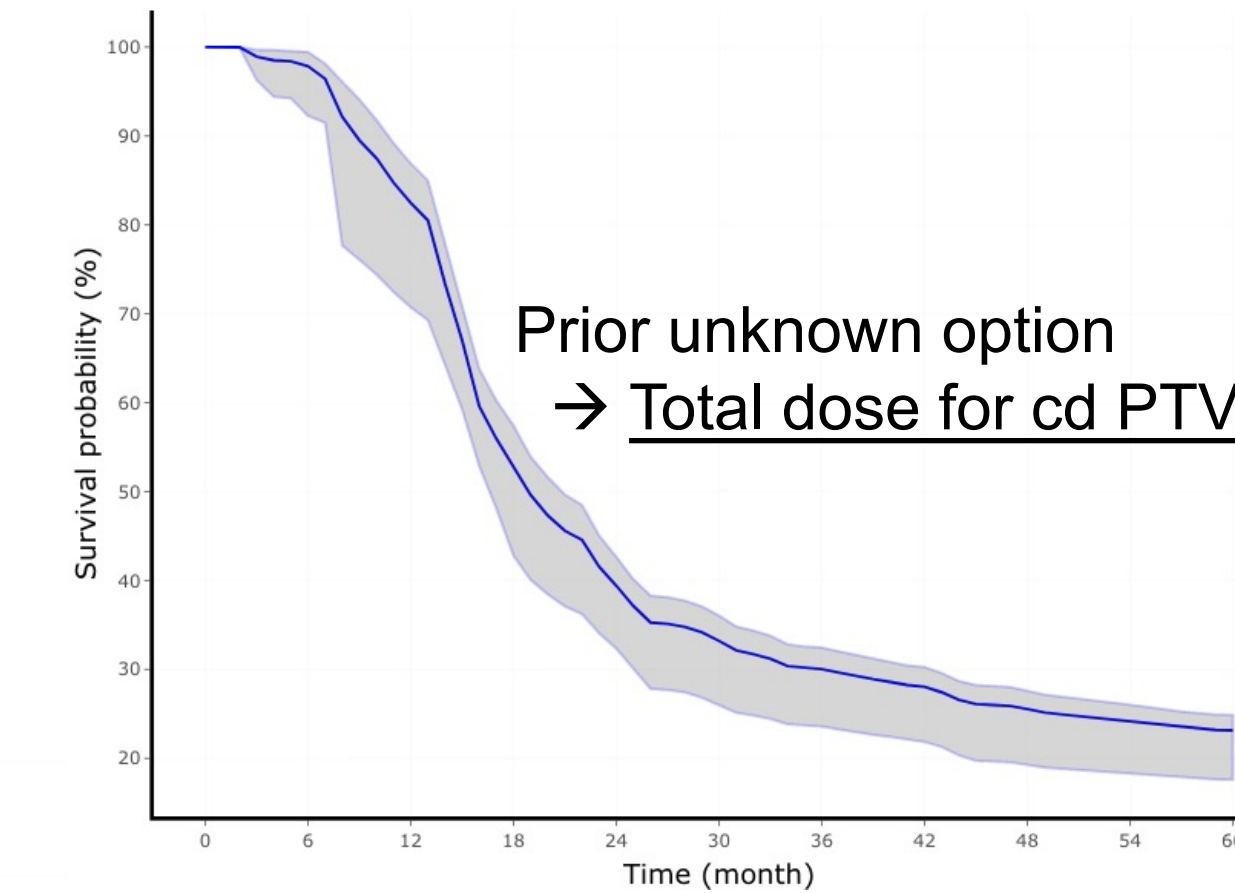
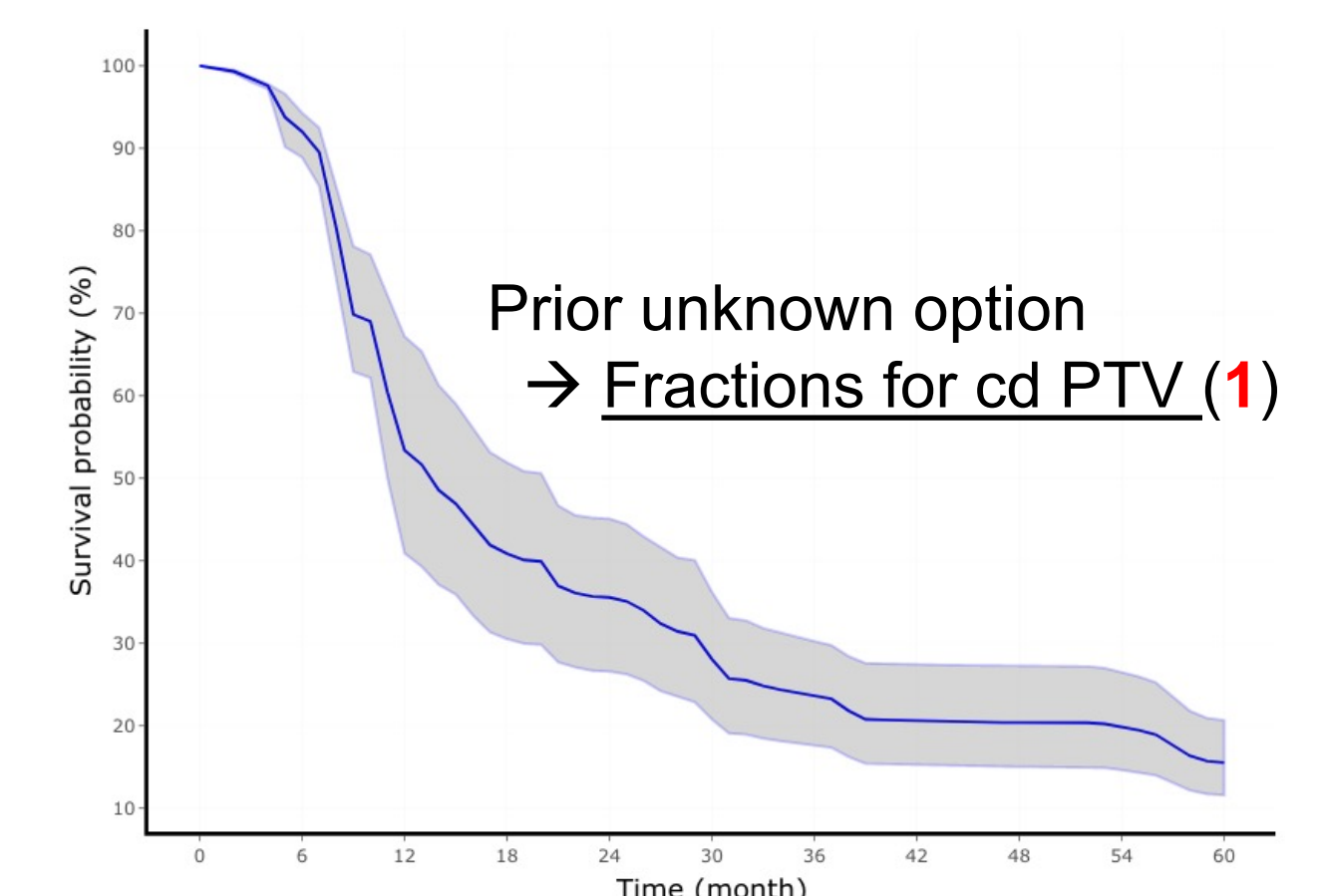
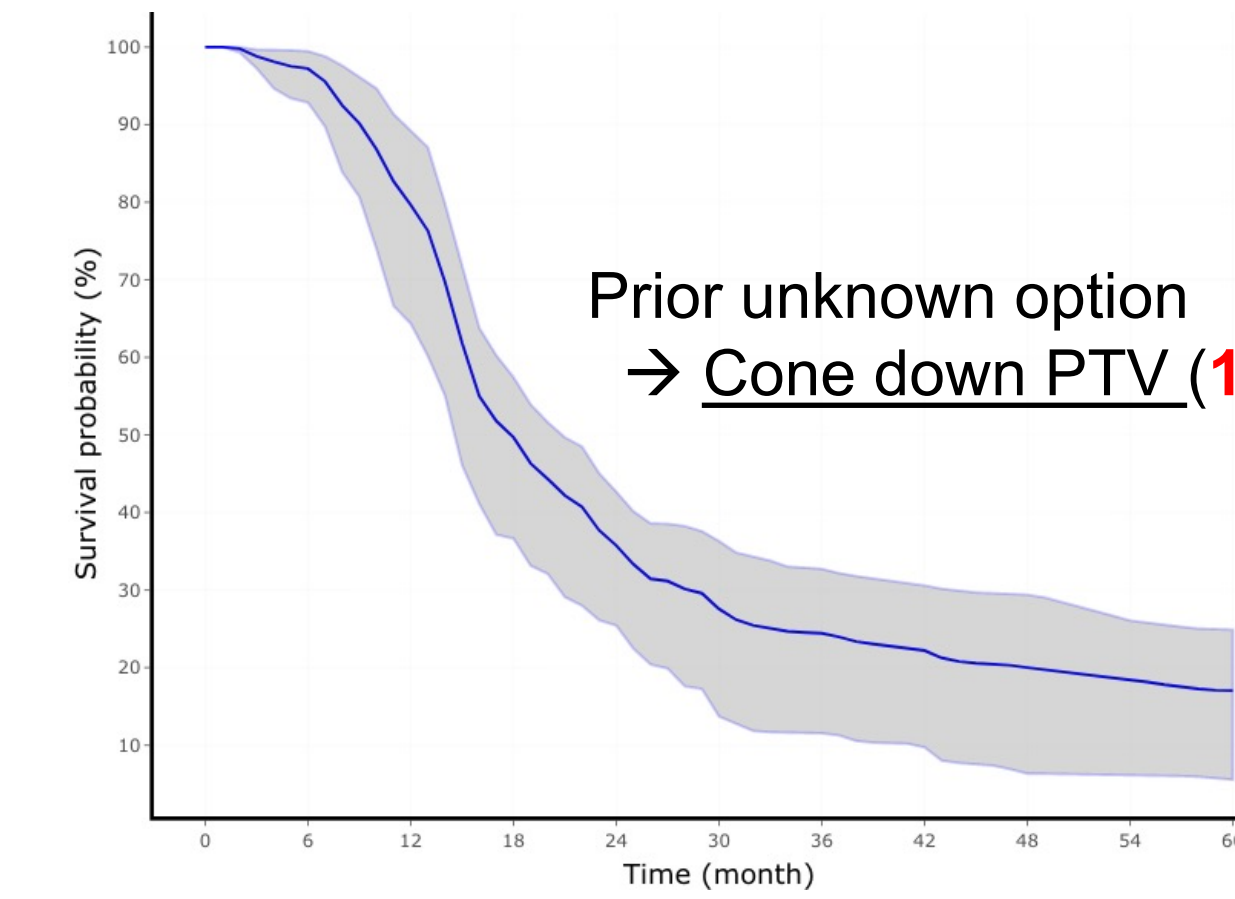
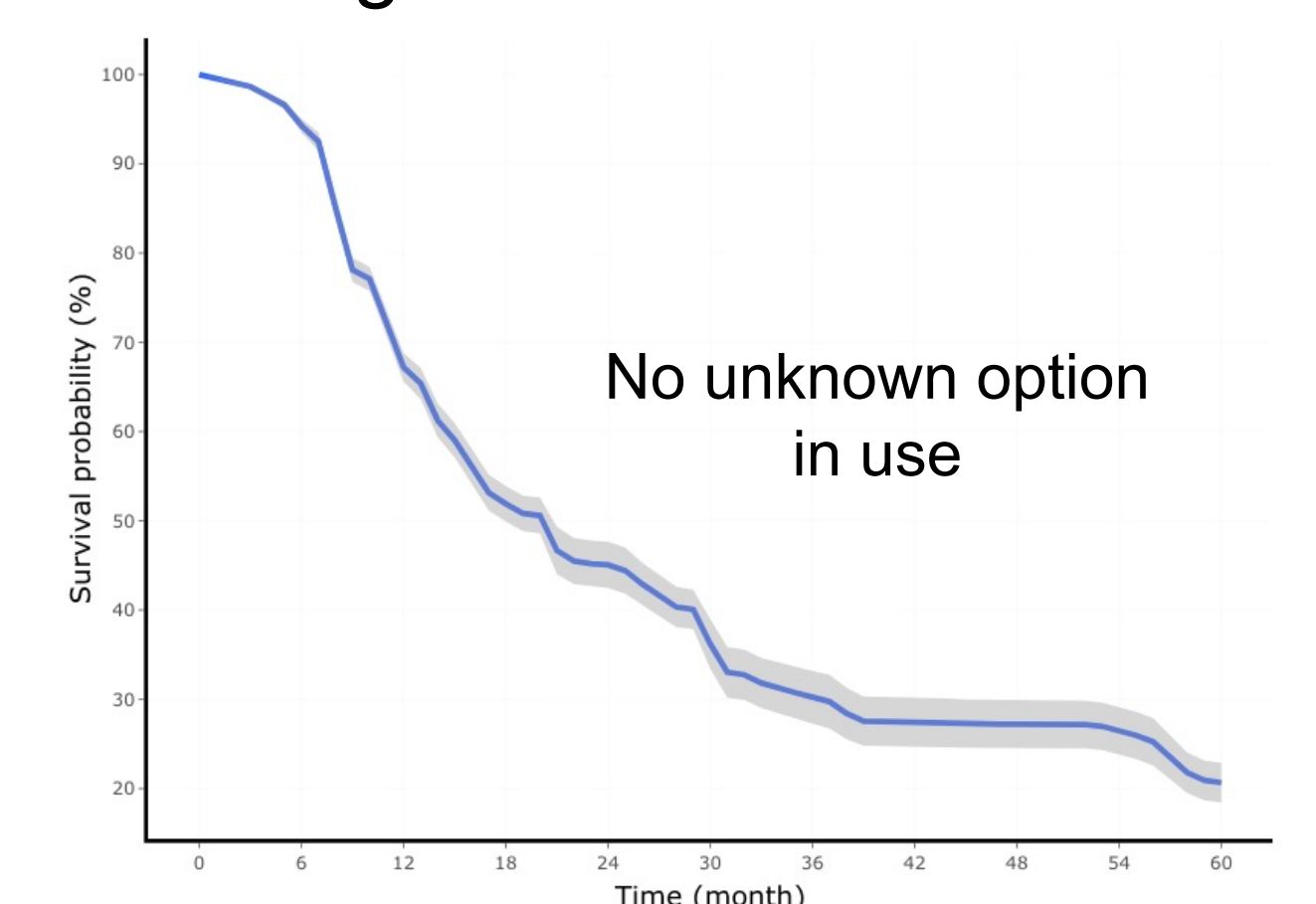


(e)

Overall Survival



Progression Free Survival



Supplementary Figure 10. Unknown option for radiotherapy details (cone down PTV, total dose for cd PTV, fractions for cd PTV) and the predicted survival curves using our final model in the web application. When the user selects unknown options, we substitute a range of five values uniformly extracted from the patient population with the most important - the higher permutation feature importance - prior unknown feature, and the median value for the remaining unknown features (a). Based on the prior unknown feature selected through the web application interface (b), the final model provides a 95 percent confidence interval for the average survival probability of up to five years if no unknown option is selected (c), and a minimum to the maximum range when an unknown option is selected (d). As a result, the user can obtain the predicted overall survival curve (e) and progression-free survival curve (f) based on the selected unknown option. Abbreviations: OS: overall survival, PFS: progression free survival, cd PTV: cone down planning target volume, Avg.: average.