

Table A1: Percentage of models considered implausible according to each threshold of plausibility and excluded from analysis in 10,000 runs.

Scenario	Threshold of plausibility from underlying RMST			Scenario	Threshold of plausibility from underlying RMST		
	+/- 50%	+/- 25%	+/- 15%		+/- 50%	+/- 25%	+/- 15%
Dacomitinib - Exponential	Exp: 0% Wei: 0% Lnorm: 17% Llog: 2% Gam: 0.0% GenG: 6% Gomp: 6% GenF: 32% Whole Runs: 0%	Exp: 1% Wei: 4% Lnorm: 82% Llog: 51% Gam: 2% GenG: 29% Gomp: 29% GenF: 59% Whole Runs: 0%	Exp: 10% Wei: 21% Lnorm: 96% Llog: 81% Gam: 16% GenG: 54% Gomp: 56% GenF: 75% Whole Runs: 2%	Pertuzumab - Exponential	Exp: 0% Wei: 0% Lnorm: 0% Llog: 0% Gam: 0% GenG: 9% Gomp: 16% GenF: 85% Whole Runs: 0%	Exp: 0% Wei: 1% Lnorm: 60% Llog: 0% Gam: 0% GenG: 28% Gomp: 65% GenF: 90% Whole Runs: 0%	Exp: 0% Wei: 12% Lnorm: 99% Llog: 19% Gam: 7% GenG: 56% Gomp: 80% GenF: 95% Whole Runs: 0%
Dacomitinib - Weibull	Exp: 7% Wei: 0% Lnorm: 33% Llog: 7% Gam: 0% GenG: 3% Gomp: 0% GenF: 38% Whole Runs: 0%	Exp: 76% Wei: 1% Lnorm: 90% Llog: 69% Gam: 5% GenG: 14% Gomp: 1% GenF: 56% Whole Runs: 0%	Exp: 95% Wei: 9% Lnorm: 98% Llog: 92% Gam: 21% GenG: 36% Gomp: 36% GenF: 69% Whole Runs: 0%	Pertuzumab - Weibull	Exp: 0% Wei: 0% Lnorm: 0% Llog: 0% Gam: 0% GenG: 12% Gomp: 42% GenF: 86% Whole Runs: 0%	Exp: 0% Wei: 3% Lnorm: 96% Llog: 8% Gam: 1% GenG: 46% Gomp: 80% GenF: 93% Whole Runs: 0%	Exp: 29% Wei: 20% Lnorm: 100% Llog: 42% Gam: 13% GenG: 70% Gomp: 89% GenF: 97% Whole Runs: 3%
Dacomitinib - Generalised gamma	Exp: 39% Wei: 0% Lnorm: 78% Llog: 40% Gam: 1% GenG: 4% Gomp: 0% GenF: 49% Whole Runs: 0%	Exp: 97% Wei: 11% Lnorm: 99% Llog: 97% Gam: 31% GenG: 14% Gomp: 0% GenF: 64% Whole Runs: 0%	Exp: 100% Wei: 35% Lnorm: 100% Llog: 100% Gam: 67% GenG: 27% Gomp: 5% GenF: 72% Whole Runs: 2%	Pertuzumab - Generalised gamma	Exp: 0% Wei: 0% Lnorm: 2% Llog: 0% Gam: 0% GenG: 13% Gomp: 42% GenF: 87% Whole Runs: 0%	Exp: 1% Wei: 4% Lnorm: 98% Llog: 12% Gam: 2% GenG: 48% Gomp: 81%	Exp: 44% Wei: 21% Lnorm: 100% Llog: 50% Gam: 15% GenG: 70% Gomp: 89% GenF: 97% Whole Runs: 5%

						GenF: 93% Whole Runs: 0%	
Pembrolizumab - Exponential	Exp: 0% Wei: 0% Lnorm: 66% Llog: 94% Gam: 0% GenG: 0% Gomp: 6% GenF: 7% Whole Runs: 0%	Exp: 0% Wei: 0% Lnorm: 97% Llog: 100% Gam: 0% GenG: 1% Gomp: 10% GenF: 16% Whole Runs: 0%	Exp: 3% Wei: 4% Lnorm: 99% Llog: 100% Gam: 4% GenG: 8% Gomp: 17% GenF: 27% Whole Runs: 2%	Venetoclax - Exponential	Exp: 0% Wei: 1% Lnorm: 0% Llog: 0% Gam: 2% GenG: 14% Gomp: 22% GenF: 52% Whole Runs: 0%	Exp: 0% Wei: 14% Lnorm: 5% Llog: 6% Gam: 11% GenG: 32% Gomp: 57% GenF: 60% Whole Runs: 0%	Exp: 7% Wei: 35% Lnorm: 35% Llog: 26% Gam: 31% GenG: 59% Gomp: 79% GenF: 79% Whole Runs: 2%
Pembrolizumab - Weibull	Exp: 0% Wei: 0% Lnorm: 92% Llog: 99% Gam: 0% GenG: 0% Gomp: 61% GenF: 14% Whole Runs: 0%	Exp: 0% Wei: 1% Lnorm: 100% Llog: 100% Gam: 0% GenG: 3% Gomp: 70% GenF: 26% Whole Runs: 0%	Exp: 9% Wei: 8% Lnorm: 100% Llog: 100% Gam: 6% GenG: 14% Gomp: 75% GenF: 38% Whole Runs: 1%	Venetoclax - Weibull	Exp: 0% Wei: 0% Lnorm: 0% Llog: 0% Gam: 1% GenG: 28% Gomp: 5% GenF: 50% Whole Runs: 0%	Exp: 4% Wei: 3% Lnorm: 0% Llog: 1% Gam: 3% GenG: 30% Gomp: 10% GenF: 51% Whole Runs: 0%	Exp: 34% Wei: 10% Lnorm: 2% Llog: 6% Gam: 11% GenG: 37% Gomp: 28% GenF: 53% Whole Runs: 0%
Pembrolizumab - Generalised gamma	Exp: 97% Wei: 95% Lnorm: 44% Llog: 8% Gam: 97% GenG: 8% Gomp: 80% GenF: 14% Whole Runs: 0%	Exp: 100% Wei: 100% Lnorm: 100% Llog: 95% Gam: 100% GenG: 38% Gomp: 90% GenF: 44% Whole Runs: 25%	Exp: 100% Wei: 100% Lnorm: 100% Llog: 99% Gam: 100% GenG: 60% Gomp: 94% GenF: 64% Whole Runs: 50%	Venetoclax - Generalised gamma	Exp: 0% Wei: 0% Lnorm: 0% Llog: 0% Gam: 1% GenG: 28% Gomp: 5% GenF: 51% Whole Runs: 0%	Exp: 2% Wei: 3% Lnorm: 0% Llog: 1% Gam: 3% GenG: 30% Gomp: 10% GenF: 51% Whole Runs: 0%	Exp: 27% Wei: 11% Lnorm: 4% Llog: 6% Gam: 11% GenG: 39% Gomp: 42% GenF: 56% Whole Runs: 0%

Exp, Exponential; Gam, Gamma; GenF, Generalised F; GenG, Generalised gamma; Gomp, Gompertz; Llog, Log-logistic; Lnorm, Log normal; Wei, Weibull

Table A2: Comparison of single model selection methods when varying the plausibility threshold

Drug/ Trial/ Outcome/ Source distribution	True RMST (+/- 10%)	Measure	Results											
			No Threshold*			Threshold +/- 50%			Threshold +/- 25%			Threshold +/- 15%		
			AIC	BIC	Log-likelihood	AIC	BIC	Log-likelihood	AIC	BIC	Log-likelihood	AIC	BIC	Log-likelihood
Dacomitinib/ ARCHER 1050/ OS/ Exponential	50.8 (45.7 - 55.9)	Mean (5%, 95%)	53.28 [+2.44, +5%] (39.59, 71.68)	51.51 [+0.67, +1%] (43.33, 61.05)	57.26 [+6.42, +13%] (36.10, 79.68)	52.91 [+2.07, +4%] (39.59, 69.83)	51.36 [+0.52, +1%] (43.33, 60.78)	55.94 [+5.10, +10%] (36.10, 73.67)	51.72 [+0.87, +2%] (42.10, 61.46)	51.04 [+0.20, +0%] (43.55, 59.27)	52.52 [+1.68, +3%] (39.69, 62.66)	51.16 [+0.31, +1%] (44.55, 57.49)	50.86 [+0.02, +0%] (44.64, 57.20)	51.55 [+0.71, +1%] (43.95, 57.91)
		Median	51.94 [+1.09, +2%]	50.99 [+0.15, +0%]	57.39 [+6.55, +13%]	51.94 [+1.09, +2%]	50.98 [+0.13, +0%]	57.06 [+6.22, +12%]	51.63 [+0.78, +2%]	50.91 [+0.07, +0%]	53.78 [+2.94, +6%]	51.25 [+0.41, +1%]	50.88 [+0.04, +0%]	52.02 [+1.18, +2%]
		MSE	93.55	39.17	227.10	75.28	32.22	168.20	32.96	22.40	59.30	15.65	14.36	21.06
		MCSE	0.09	0.06	0.14	0.08	0.06	0.12	0.06	0.05	0.08	0.04	0.04	0.05
		EmpSE	9.36	6.22	13.63	8.43	5.65	11.92	5.67	4.73	7.52	3.94	3.79	4.53
% within 10%	54%	69%	22%	54%	69%	23%	61%	71%	34%	75%	79%	62%		
Dacomitinib/ ARCHER 1050/ OS/ Weibull	39.3 (35.4 - 43.2)	Mean (5%, 95%)	42.93 [+3.60, +9%] (32.52, 58.25)	42.90 [+3.57, +9%] (32.61, 57.48)	45.45 [+6.12, +16%] (32.10, 65.80)	42.43 [+3.10, +8%] (32.52, 55.91)	42.57 [+3.24, +8%] (32.61, 55.98)	43.47 [+4.14, +11%] (32.10, 56.79)	40.41 [+1.08, +3%] (32.58, 47.91)	40.45 [+1.11, +3%] (32.66, 47.95)	40.64 [+1.31, +3%] (32.17, 48.30)	39.70 [+0.37, +1%] (34.46, 44.59)	39.71 [+0.38, +1%] (34.50, 44.58)	39.69 [+0.36, +1%] (34.06, 44.71)
		Median	41.01 [+1.68, +4%]	41.02 [+1.69, +4%]	43.36 [+4.03, +10%]	40.98 [+1.65, +4%]	41.01 [+1.68, +4%]	42.63 [+3.30, +8%]	40.60 [+1.26, +3%]	40.61 [+1.28, +3%]	41.02 [+1.69, +4%]	39.71 [+0.38, +1%]	39.71 [+0.38, +1%]	39.87 [+0.53, +1%]
		MSE	78.53	73.89	150.44	60.60	62.79	79.18	22.61	22.60	28.48	9.70	9.62	11.90
		MCSE	0.08	0.08	0.11	0.07	0.07	0.08	0.05	0.05	0.05	0.03	0.03	0.03
		EmpSE	8.10	7.82	10.63	7.14	7.23	7.88	4.63	4.62	5.17	3.09	3.08	3.43
% within 10%	45%	45%	31%	45%	45%	33%	55%	55%	44%	74%	74%	65%		
Dacomitinib/ ARCHER 1050/ OS/ Generalised gamma	35.7 (32.1 - 39.3)	Mean (5%, 95%)	39.16 [+3.43, +10%] (31.32, 54.22)	39.41 [+3.68, +10%] (31.38, 55.11)	41.08 [+5.35, +15%] (31.05, 61.25)	38.46 [+2.73, +8%] (31.32, 49.17)	38.65 [+2.92, +8%] (31.38, 50.11)	38.93 [+3.20, +9%] (31.05, 51.16)	37.32 [+1.60, +4%] (31.30, 43.56)	37.36 [+1.63, +5%] (31.37, 43.57)	36.98 [+1.26, +4%] (31.04, 43.81)	36.33 [+0.60, +2%] (31.56, 40.56)	36.33 [+0.61, +2%] (31.64, 40.54)	36.00 [+0.28, +1%] (31.31, 40.57)
		Median	37.62 [+1.90, +5%]	37.67 [+1.94, +5%]	37.64 [+1.92, +5%]	37.58 [+1.86, +5%]	37.66 [+1.93, +5%]	37.27 [+1.54, +4%]	37.41 [+1.68, +5%]	37.44 [+1.71, +5%]	36.49 [+0.76, +2%]	36.48 [+0.76, +2%]	36.46 [+0.74, +2%]	36.07 [+0.34, +1%]
		MSE	60.94	64.73	122.43	37.25	40.49	50.35	17.57	17.49	18.15	8.26	8.07	8.57
		MCSE	0.07	0.07	0.10	0.05	0.06	0.06	0.04	0.04	0.04	0.03	0.03	0.03
		EmpSE	7.01	7.15	9.68	5.46	5.65	6.33	3.87	3.85	4.07	2.81	2.78	2.91
% within 10%	51%	51%	45%	52%	51%	48%	56%	57%	57%	73%	74%	72%		
Pembrolizumab / KEYNOTE 045/ PFS/ Exponential	5.6 (5.0 - 6.2)	Mean (5%, 95%)	5.97 [+0.37, +7%] (4.98, 8.75)	5.74 [+0.14, +3%] (5.00, 6.37)	6.17 [+0.57, +10%] (5.03, 8.58)	5.68 [+0.08, +1%] (4.98, 6.55)	5.62 [+0.02, +0%] (5.00, 6.31)	5.96 [+0.36, +6%] (5.03, 7.53)	5.63 [+0.03, +0%] (4.98, 6.40)	5.61 [+0.01, +0%] (5.00, 6.29)	5.80 [+0.20, +4%] (5.03, 6.73)	5.60 [-0.00, -0%] (5.03, 6.25)	5.60 [-0.00, -0%] (5.02, 6.23)	5.71 [+0.11, +2%] (5.03, 6.35)
		Median	5.62 [+0.02, +0%]	5.60 [-0.00, -0%]	5.83 [+0.23, +4%]	5.61 [+0.01, +0%]	5.60 [-0.00, -0%]	5.81 [+0.21, +4%]	5.60 [-0.00, -0%]	5.59 [-0.01, -0%]	5.76 [+0.16, +3%]	5.58 [-0.02, -0%]	5.59 [-0.01, -0%]	5.71 [+0.11, +2%]
		MSE	3.05	1.90	1.91	0.29	0.17	0.68	0.18	0.15	0.30	0.14	0.13	0.17
		MCSE	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00
		EmpSE	1.71	1.37	1.26	0.53	0.42	0.74	0.42	0.39	0.51	0.37	0.36	0.40
% within 10%	77%	84%	61%	80%	85%	63%	82%	85%	70%	85%	87%	79%		
Pembrolizumab / KEYNOTE 045/ PFS/ Weibull	5.8 (5.2 - 6.4)	Mean (5%, 95%)	8.12 [+2.28, +39%] (5.08, 22.58)	7.79 [+1.95, +33%] (5.00, 23.65)	6.99 [+1.15, +20%] (5.14, 11.27)	5.93 [+0.08, +1%] (5.06, 7.17)	5.76 [-0.08, -1%] (4.98, 6.70)	6.27 [+0.43, +7%] (5.13, 8.01)	5.85 [+0.01, +0%] (5.05, 6.81)	5.74 [-0.10, -2%] (4.98, 6.65)	6.05 [+0.21, +4%] (5.12, 7.07)	5.82 [-0.02, -0%] (5.11, 6.57)	5.74 [-0.10, -2%] (5.07, 6.51)	5.94 [+0.10, +2%] (5.16, 6.63)
		Median	5.92 [+0.08, +1%]	5.77 [-0.08, -1%]	6.23 [+0.39, +7%]	5.84 [-0.01, -0%]	5.70 [-0.14, -2%]	6.11 [+0.27, +5%]	5.81 [-0.03, -1%]	5.70 [-0.14, -2%]	6.02 [+0.17, +3%]	5.81 [-0.04, -1%]	5.71 [-0.14, -2%]	5.96 [+0.11, +2%]
		MSE	46.29	47.98	8.89	0.44	0.30	0.90	0.28	0.26	0.39	0.19	0.20	0.22
		MCSE	0.06	0.07	0.03	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00
		EmpSE				0.66	0.55	0.85	0.53	0.50	0.59	0.44	0.43	0.45
% within 10%			71%	74%	56%	73%	74%	64%	78%	77%	74%			

			6.41 60%	6.65 66%	2.75 49%										
Pembrolizumab / KEYNOTE 045/ PFS/ Generalised gamma	12.0 (10.8 - 13.2)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	12.83 [+0.84, +7%] (7.69, 19.93) 12.26 [+0.26, +2%] 15.30 0.04 3.82 25%	12.45 [+0.45, +4%] (6.27, 19.32) 12.08 [+0.08, +1%] 15.17 0.04 3.87 26%	13.48 [+1.48, +12%] (7.93, 20.82) 12.97 [+0.97, +8%] 18.41 0.04 4.03 24%	11.65 [-0.34, -3%] (7.03, 16.80) 11.55 [-0.45, -4%] 9.10 0.03 3.00 26%	11.44 [-0.56, -5%] (6.72, 16.64) 11.37 [-0.63, -5%] 9.67 0.03 3.06 26%	12.12 [+0.12, +1%] (7.10, 17.14) 12.11 [+0.12, +1%] 9.73 0.02 3.12 24%	11.65 [-0.35, -3%] (9.20, 14.57) 11.54 [-0.46, -4%] 3.05 0.02 1.71 39%	11.61 [-0.39, -3%] (9.19, 14.54) 11.47 [-0.53, -4%] 3.05 0.02 1.70 39%	11.95 [-0.05, -0%] (9.24, 14.67) 11.96 [-0.04, -0%] 3.06 0.01 1.75 39%	11.87 [-0.12, -1%] (10.34, 13.59) 11.82 [-0.18, -2%] 1.10 0.01 1.04 66%	11.87 [-0.12, -1%] (10.34, 13.59) 11.82 [-0.18, -2%] 1.10 0.01 1.04 66%	12.03 [+0.03, +0%] (10.38, 13.62) 12.04 [+0.04, +0%] 1.09 0.01 1.04 66%	
Pertuzumab/ APHINITY/ IDFS/ Exponential	376.8 (339.1 - 414.5)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	367.97 [-8.87, -2%] (117.63, 487.51) 379.14 [+2.30, +1%] 10148.39 1.00 100.35 67%	361.49 [-15.35, -4%] (241.18, 401.84) 376.04 [-0.80, -0%] 5463.82 0.72 72.31 93%	362.26 [-14.58, -4%] (117.63, 512.31) 396.59 [+19.74, +5%] 15976.12 0.48 125.56 26%	394.61 [+17.76, +5%] (342.46, 488.02) 381.31 [+4.47, +1%] 2574.31 0.18 47.53 73%	377.56 [+0.72, +0%] (353.15, 402.34) 377.21 [+0.37, +0%] 319.73 0.18 17.87 98%	389.62 [+12.78, +3%] (223.98, 512.27) 402.29 [+25.45, +7%] 7779.86 0.87 87.28 28%	385.92 [+9.08, +2%] (342.90, 458.14) 380.05 [+3.21, +1%] 1203.52 0.33 33.48 80%	377.32 [+0.48, +0%] (353.33, 401.88) 377.19 [+0.35, +0%] 241.63 0.55 15.54 98%	391.39 [+14.55, +4%] (298.19, 465.01) 401.66 [+24.82, +7%] 3186.65 0.20 54.55 33%	378.13 [+1.28, +0%] (347.67, 416.24) 377.38 [+0.53, +0%] 395.27 0.15 19.84 92%	377.16 [+0.32, +0%] (353.51, 401.61) 377.16 [+0.32, +0%] 215.33 0.33 14.67 99%	385.14 [+8.30, +2%] (328.26, 429.61) 391.08 [+14.24, +4%] 1161.16 0.33 33.05 63%	
Pertuzumab/ APHINITY/ IDFS/ Weibull	338.7 (304.8 - 372.6)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	326.83 [-11.83, -3%] (54.09, 461.40) 373.29 [+34.63, +10%] 15028.77 1.22 122.03 23%	353.99 [+15.33, +5%] (54.09, 410.03) 379.16 [+40.51, +12%] 8354.30 0.90 90.11 25%	311.79 [-26.87, -8%] (54.09, 481.47) 356.16 [+17.50, +5%] 18870.91 1.26 134.73 14%	376.38 [+37.72, +11%] (285.23, 462.13) 378.39 [+39.73, +12%] 4060.17 0.51 51.35 31%	378.94 [+40.29, +12%] (349.69, 411.15) 380.96 [+42.30, +12%] 2345.44 0.27 26.88 27%	349.79 [+11.14, +3%] (194.41, 477.97) 368.58 [+29.92, +9%] 8748.00 0.93 92.87 17%	361.77 [+23.12, +7%] (286.66, 403.79) 371.99 [+33.33, +10%] 1786.22 0.35 22.99 28%	378.24 [+39.58, +12%] (348.56, 406.75) 380.61 [+41.88, +12%] 2095.15 0.23 50.51 32%	349.91 [+11.25, +3%] (266.25, 417.13) 359.83 [+21.17, +6%] 2677.42 0.51 50.51 32%	356.26 [+17.61, +5%] (299.43, 386.96) 366.00 [+27.34, +8%] 1083.30 0.28 27.81 55%	367.64 [+28.99, +9%] (320.02, 387.60) 373.01 [+34.35, +10%] 1231.96 0.20 19.79 47%	345.82 [+7.16, +2%] (294.61, 386.38) 351.35 [+12.69, +4%] 941.68 0.30 29.84 62%	
Pertuzumab/ APHINITY/ IDFS/ Generalised gamma	333.5 (300.2 - 366.9)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	325.00 [-8.54, -3%] (53.25, 462.89) 372.56 [+39.03, +12%] 15274.16 1.23 123.30 18%	352.75 [+19.22, +6%] (53.25, 409.24) 379.14 [+45.60, +14%] 8806.67 0.92 91.86 15%	309.11 [-24.42, -7%] (53.25, 483.50) 350.94 [+17.41, +5%] 19095.08 1.36 136.02 12%	375.84 [+42.31, +13%] (284.66, 462.71) 378.26 [+44.72, +13%] 4488.75 0.52 51.95 27%	378.92 [+45.38, +14%] (349.99, 410.35) 381.02 [+47.49, +14%] 2787.36 0.27 26.98 16%	347.47 [+13.93, +4%] (189.23, 477.15) 366.02 [+32.49, +10%] 9039.84 0.94 94.06 15%	360.34 [+26.81, +8%] (285.67, 402.90) 371.40 [+37.87, +11%] 2506.15 2008.97 0.36 35.92 34%	377.55 [+44.01, +13%] (346.54, 405.39) 380.34 [+46.81, +14%] 2506.15 0.24 23.85 30%	346.36 [+12.83, +4%] (262.95, 411.68) 357.66 [+24.13, +7%] 1230.43 0.50 50.08 30%	351.51 [+17.98, +5%] (295.04, 381.59) 360.97 [+27.44, +8%] 1083.15 0.28 27.57 53%	361.00 [+27.47, +8%] (310.88, 382.13) 368.17 [+34.64, +10%] 1230.43 0.22 21.82 44%	340.80 [+7.27, +2%] (290.41, 380.76) 346.00 [+12.47, +4%] 915.91 0.30 29.38 62%	
Venetoclax/ MURANO/ OS/ Exponential	169.4 (152.5 - 186.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	168.80 [-0.61, -0%] (65.28, 216.58) 171.74 [+2.33, +1%] 1229.46 0.35 35.06 58%	168.37 [-1.03, -1%] (142.23, 197.50) 169.49 [+0.08, +0%] 501.22 0.22 22.37 74%	169.50 [+0.09, +0%] (64.46, 218.82) 188.49 [+19.08, +11%] 2452.84 0.50 49.53 22%	173.62 [+4.22, +2%] (136.45, 216.66) 172.20 [+2.79, +2%] 623.40 0.25 24.61 60%	170.07 [+0.66, +0%] (144.60, 197.73) 169.77 [+0.37, +0%] 289.00 0.17 16.99 74%	176.80 [+7.39, +4%] (97.36, 218.85) 189.04 [+19.63, +12%] 1476.14 0.38 37.70 23%	172.79 [+3.38, +2%] (143.26, 206.24) 169.78 [+2.67, +2%] 350.29 0.18 18.41 65%	170.12 [+0.71, +0%] (145.49, 194.56) 178.21 [+15.01, -8%] 222.36 0.15 14.90 75%	180.43 [+11.02, +7%] (133.61, 209.68) 188.18 [+18.77, +11%] 741.22 0.25 24.89 28%	170.35 [+0.94, +1%] (149.18, 191.82) 170.47 [+1.06, +1%] 161.26 0.13 12.66 79%	169.71 [+0.30, +0%] (149.42, 189.62) 169.42 [+0.01, +0%] 148.69 0.12 12.19 82%	175.65 [+6.25, +4%] (147.46, 193.90) 180.32 [+10.91, +6%] 277.58 0.16 15.45 53%	
Venetoclax/ MURANO/ OS/ Weibull	193.2 (173.9 - 212.5)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	190.99 [-2.23, -1%] (153.53, 223.30) 194.08 [+0.86, +0%] 708.23 0.27 26.52 54%	180.13 [-13.09, -7%] (149.46, 220.16) 177.18 [-16.04, -8%] 749.56 0.24 24.05 47%	195.15 [+1.93, +1%] (122.24, 222.91) 203.73 [+10.50, +5%] 1011.93 0.32 31.75 60%	192.47 [-0.75, -0%] (155.63, 223.35) 194.37 [+1.15, +1%] 485.44 0.22 22.02 54%	181.08 [-12.14, -6%] (150.11, 220.18) 203.93 [-15.83, -8%] 602.92 0.21 21.34 47%	198.20 [+4.98, +3%] (152.87, 222.96) 203.93 [+10.71, +6%] 551.17 0.23 22.94 60%	192.91 [-0.31, -0%] (156.98, 223.36) 194.39 [+1.17, +1%] 447.77 0.21 21.16 55%	181.90 [-11.32, -6%] (153.00, 220.18) 178.21 [-15.01, -8%] 546.31 0.20 20.45 48%	199.74 [+6.52, +3%] (159.19, 222.96) 203.96 [+10.73, +6%] 390.05 0.19 18.64 61%	194.46 [+1.23, +1%] (167.57, 219.64) 194.84 [+1.62, +1%] 289.66 0.17 16.98 65%	187.48 [-5.74, -3%] (166.26, 216.80) 184.45 [-8.78, -5%] 286.53 0.16 15.93 66%	200.13 [+6.91, +4%] (168.93, 219.82) 203.84 [+10.62, +5%] 291.33 0.16 15.61 65%	
Venetoclax/ MURANO/ OS/ Generalised gamma	190.3 (171.3- 209.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	190.62 [+0.36, +0%] (153.05, 223.55) 194.11 [+3.85, +2%] 687.04 0.26	180.38 [-9.88, -5%] (150.01, 219.94) 177.26 [-13.00, -7%] 628.47 0.23	195.26 [+5.00, +3%] (120.62, 223.41) 203.65 [+13.39, +7%] 1020.21 0.32	191.92 [+1.66, +1%] (154.51, 223.55) 194.26 [+3.99, +2%] 495.07 0.22 21.07 54%	181.06 [-9.20, -5%] (150.49, 219.96) 177.49 [-12.78, -7%] 528.59 0.21 21.07 52%	197.95 [+7.68, +4%] (149.15, 223.44) 203.77 [+13.50, +7%] 621.74 0.24 23.72 53%	192.32 [+2.06, +1%] (156.22, 223.56) 194.31 [+4.04, +2%] 461.87 0.21 21.39 54%	181.57 [-8.70, -5%] (152.44, 219.97) 177.84 [-12.43, -7%] 495.44 0.20 20.49 53%	199.65 [+9.39, +5%] (158.92, 223.46) 203.82 [+13.55, +7%] 449.67 0.19 19.02 53%	192.65 [+2.39, +1%] (165.58, 216.59) 194.11 [+3.85, +2%] 277.42 0.16 16.49 67%	185.49 [-4.77, -3%] (164.37, 213.61) 182.30 [-7.96, -4%] 264.57 0.16 15.55 69%	199.12 [+8.86, +5%] (167.11, 217.34) 203.07 [+12.81, +7%] 313.46 0.15 15.33 59%	

			26.21 53%	23.04 52%	31.55 52%									
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AIC: Akaike information criterion; BIC: Bayes information criterion; EmpSE: empirical standard error; IDFS: invasive disease free survival; MCSE: Monte-Carlo standard error; MSE: mean squared error; OS: overall survival; PFS: progression free survival.

Shaded cells indicate model or model selection method with lowest MSE. Bold cells indicate model distribution matches source distribution.

Table A3 – Results for methods of model averaging without assessing plausibility.

Drug/ Trial/ Outcome/ Source distribution	True RMST (+/- 10%)	Measure	Results									
			Selection Method and Margin 1		Selection Method and Margin 2		Selection Method and Margin 3		Bayesian Model Averaging	Mean average of all models		
			AIC (2 units)	BIC (2 units)	AIC (7 units)	BIC (6 units)	AIC (10 units)	BIC (10 units)			Before 25% plausibility threshold	
Dacomitinib/ ARCHER 1050/ OS/ Exponential	50.8 (45.7 - 55.9)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	53.66 [+2.82, +6%] (42.03, 68.98)	51.83 [+0.99, +2%] (43.34, 62.60)	55.21 [+4.36, +9%] (44.19, 67.87)	54.12 [+3.28, +6%] (43.53, 66.54)	55.60 [+4.76, +9%] (44.69, 67.94)	54.86 [+4.02, +8%] (43.30, 67.15)	52.71 [+1.87, +4%] (43.81, 63.51)	56.36 [+5.52, +11%] (46.34, 67.95)		
Dacomitinib/ ARCHER 1050/ OS/ Weibull	39.3 (35.4 - 43.2)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	43.04 [+3.71, +9%] (33.39, 54.45)	43.37 [+4.04, +10%] (33.77, 53.79)	43.95 [+4.62, +12%] (36.26, 53.16)	43.73 [+4.40, +11%] (36.24, 52.25)	44.33 [+5.00, +13%] (36.92, 53.27)	44.45 [+5.12, +13%] (37.14, 52.87)	43.40 [+4.07, +10%] (34.80, 53.29)	45.67 [+6.33, +16%] (39.37, 53.35)		
Dacomitinib/ ARCHER 1050/ OS/ Generalised gamma	35.7 (32.1 - 39.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	40.02 [+4.29, +12%] (31.68, 51.14)	40.69 [+4.97, +14%] (31.84, 51.63)	42.23 [+6.50, +18%] (34.10, 51.81)	42.34 [+6.62, +19%] (34.23, 51.48)	43.11 [+7.38, +21%] (35.50, 52.25)	43.42 [+7.70, +22%] (35.69, 52.04)	41.07 [+5.34, +15%] (32.70, 51.43)	45.48 [+9.75, +27%] (39.45, 52.86)		
Pembrolizumab / KEYNOTE 045/ PFS/ Exponential	5.6 (5.0 - 6.2)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	5.90 [+0.30, +5%] (5.00, 7.48)	5.76 [+0.16, +3%] (5.01, 6.57)	5.94 [+0.34, +6%] (5.05, 7.43)	5.82 [+0.22, +4%] (5.02, 7.14)	6.04 [+0.44, +8%] (5.06, 7.57)	5.89 [+0.29, +5%] (5.03, 7.39)	5.79 [+0.19, +3%] (5.02, 6.77)	6.76 [+1.16, +21%] (5.78, 8.02)		
Pembrolizumab / KEYNOTE 045/ PFS/ Weibull	5.8 (5.2 - 6.4)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	7.63 [+1.79, +31%] (5.14, 15.66)	7.67 [+1.83, +31%] (5.05, 17.65)	7.62 [+1.78, +30%] (5.23, 12.74)	7.66 [+1.82, +31%] (5.21, 13.23)	7.80 [+1.96, +33%] (5.26, 12.70)	7.81 [+1.97, +34%] (5.23, 12.65)	7.70 [+1.85, +32%] (5.14, 16.10)	8.54 [+2.70, +46%] (6.36, 12.17)		

		MSE MCSE EmpSE % within 10%	20.35 0.04 4.14 52%	25.87 0.05 4.75 55%	9.50 0.03 2.52 38%	10.69 0.03 2.72 40%	9.72 0.02 2.43 32%	10.13 0.03 2.50 34%	19.24 0.04 3.98 48%	10.70 0.02 1.85 6%
Pembrolizumab / KEYNOTE 045/ PFS/ Generalised gamma	12.0 (10.8 - 13.2)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	13.05 [+1.05, +9%] (7.68, 20.03) 12.55 [+0.55, +5%] 15.77 0.04 3.83 25%	12.39 [+0.39, +3%] (6.71, 19.33) 12.04 [+0.05, +0%] 15.37 0.04 3.90 24%	12.77 [+0.77, +6%] (7.17, 19.88) 12.37 [+0.38, +3%] 16.35 0.04 3.97 22%	12.32 [+0.32, +3%] (6.96, 19.82) 11.66 [-0.34, -3%] 16.98 0.04 4.11 19%	12.42 [+0.42, +4%] (7.04, 19.84) 11.84 [-0.16, -1%] 16.87 0.04 4.09 19%	11.87 [-0.12, -1%] (6.92, 19.70) 10.90 [-1.09, -9%] 16.53 0.04 4.06 19%	12.33 [+0.34, +3%] (6.80, 19.35) 11.91 [-0.08, -1%] 15.41 0.04 3.91 23%	10.66 [-1.34, -11%] (6.49, 15.72) 10.36 [-1.63, -14%] 9.94 0.03 2.85 26%
Pertuzumab/ APHINITY/ IDFS/ Exponential	376.8 (339.1 - 414.5)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	369.85 [-6.99, -2%] (123.35, 469.26) 385.01 [+8.17, +2%] 8289.44 0.91 90.78 45%	361.77 [-15.07, -4%] (242.74, 404.45) 376.28 [-0.56, -0%] 5512.41 0.73 72.70 91%	373.97 [-2.87, -1%] (258.68, 454.60) 390.93 [+14.09, +4%] 7140.57 0.84 84.46 49%	366.40 [-10.45, -3%] (253.77, 457.44) 379.97 [+3.12, +1%] 7413.28 0.85 85.47 52%	375.89 [-0.95, -0%] (267.25, 454.77) 392.76 [+15.91, +4%] 7050.99 0.84 83.97 50%	371.47 [-5.37, -1%] (270.57, 452.86) 386.32 [+9.48, +3%] 7001.70 0.84 83.51 60%	363.57 [-13.28, -4%] (257.97, 412.55) 378.29 [+1.44, +0%] 5591.76 0.74 73.59 88%	391.34 [+14.50, +4%] (320.15, 454.30) 394.02 [+17.18, +5%] 1972.84 0.42 41.99 54%
Pertuzumab/ APHINITY/ IDFS/ Weibull	338.7 (304.8 - 372.6)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	326.53 [-12.12, -4%] (54.09, 449.84) 342.12 [+3.46, +1%] 9545.26 0.97 96.95 47%	351.01 [+12.35, +4%] (54.09, 409.11) 377.82 [+39.16, +12%] 7811.15 0.88 87.52 27%	333.51 [-5.15, -2%] (54.09, 429.72) 346.13 [+7.48, +2%] 7382.05 0.86 85.77 52%	328.76 [-9.89, -3%] (54.09, 427.05) 334.88 [-3.78, -1%] 7342.45 0.85 85.12 44%	335.76 [-2.89, -1%] (54.09, 429.43) 347.65 [+8.99, +3%] 7219.45 0.85 84.92 54%	331.66 [-7.00, -2%] (54.09, 424.07) 341.52 [+2.86, +1%] 6896.70 0.83 82.75 60%	344.56 [+5.91, +2%] (54.09, 403.71) 369.45 [+30.80, +9%] 7096.76 0.84 84.04 43%	353.94 [+15.28, +5%] (292.55, 428.37) 349.69 [+11.03, +3%] 1912.54 0.41 40.98 59%
Pertuzumab/ APHINITY/ IDFS/ Generalised gamma	333.5 (300.2 - 366.9)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	324.65 [-8.88, -3%] (53.25, 452.06) 340.35 [+6.82, +2%] 9872.51 0.99 98.97 46%	349.64 [+16.11, +5%] (53.25, 408.60) 377.86 [+44.32, +13%] 8201.93 0.89 89.12 17%	332.25 [-1.29, -0%] (53.25, 430.30) 345.16 [+11.62, +3%] 7536.46 0.87 86.81 50%	327.94 [-5.59, -2%] (53.25, 429.70) 333.21 [-0.33, -0%] 7513.68 0.87 86.51 44%	334.51 [+0.98, +0%] (53.25, 430.14) 346.92 [+13.39, +4%] 7402.01 0.86 86.03 52%	330.56 [-2.97, -1%] (53.25, 424.93) 340.75 [+7.21, +2%] 7025.54 0.84 83.77 58%	343.39 [+9.86, +3%] (53.25, 403.80) 368.86 [+35.33, +11%] 7379.45 0.85 85.34 35%	353.47 [+19.93, +6%] (291.32, 429.00) 349.20 [+15.67, +5%] 2103.26 0.41 41.30 57%
Venetoclax/ MURANO/ OS/ Exponential	169.4 (152.5 - 186.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	167.35 [-2.06, -1%] (117.71, 210.19) 170.39 [+0.98, +1%] 945.51 0.31 30.68 42%	167.44 [-1.96, -1%] (126.92, 198.17) 169.51 [+0.10, +0%] 552.75 0.23 23.43 69%	168.85 [-0.55, -0%] (122.80, 205.29) 172.78 [+3.38, +2%] 770.30 0.28 27.75 45%	167.03 [-2.38, -1%] (123.42, 204.27) 170.41 [+1.00, +1%] 747.97 0.27 27.25 46%	168.81 [-0.60, -0%] (122.90, 205.04) 172.73 [+3.32, +2%] 755.75 0.27 27.49 45%	168.09 [-1.32, -1%] (122.87, 204.62) 171.66 [+2.25, +1%] 738.55 0.27 27.15 47%	167.16 [-2.25, -1%] (129.81, 198.82) 169.48 [+0.07, +0%] 562.41 0.24 23.61 63%	169.64 [+0.23, +0%] (124.26, 204.94) 172.77 [+3.36, +2%] 624.07 0.25 24.98 46%
Venetoclax/ MURANO/ OS/ Weibull	193.2 (173.9 - 212.5)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	191.42 [-1.80, -1%] (152.30, 219.27) 195.14 [+1.92, +1%] 525.03 0.23 22.84 71%	182.71 [-10.51, -5%] (151.21, 214.47) 183.73 [-9.50, -5%] 603.46 0.22 22.20 60%	190.66 [-2.56, -1%] (157.44, 214.20) 193.90 [+0.68, +0%] 424.18 0.20 20.44 79%	189.27 [-3.95, -2%] (155.43, 212.75) 192.57 [-0.65, -0%] 428.60 0.20 20.32 79%	190.31 [-2.91, -2%] (157.53, 213.31) 193.66 [+0.43, +0%] 414.65 0.20 20.16 80%	189.61 [-3.61, -2%] (157.51, 212.49) 192.78 [-0.44, -0%] 411.74 0.20 19.97 80%	185.75 [-7.47, -4%] (156.84, 213.05) 187.12 [-6.10, -3%] 471.31 0.20 20.39 71%	190.79 [-2.43, -1%] (159.26, 212.32) 193.45 [+0.23, +0%] 280.81 0.17 16.58 81%
Venetoclax/ MURANO/ OS/ Generalised gamma	190.3 (171.3 - 209.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	191.40 [+1.14, +1%] (151.96, 219.19) 195.13 [+4.86, +3%] 497.21 0.22 22.27 68%	182.87 [-7.39, -4%] (151.25, 214.37) 183.62 [-6.65, -3%] 517.29 0.22 21.51 63%	190.87 [+0.60, +0%] (157.31, 214.49) 194.02 [+3.75, +2%] 389.25 0.20 19.72 75%	189.50 [-0.77, -0%] (151.59, 213.29) 192.56 [+2.29, +1%] 387.18 0.20 19.66 77%	190.54 [+0.27, +0%] (157.33, 213.70) 193.72 [+3.45, +2%] 379.85 0.19 19.49 77%	189.86 [-0.41, -0%] (157.55, 213.05) 192.79 [+2.52, +1%] 373.09 0.19 19.31 77%	185.93 [-4.33, -2%] (155.90, 213.23) 187.23 [-3.04, -2%] 405.06 0.20 19.66 72%	190.79 [+0.53, +0%] (158.30, 212.95) 193.59 [+3.32, +2%] 290.73 0.17 17.04 78%

AIC: Akaike information criterion; BIC: Bayes information criterion; EmpSE: empirical standard error; IDFS: invasive disease free survival; MCSE: Monte-Carlo standard error; MSE: mean squared error; OS: overall survival; PFS: progression free survival.

Shaded cells indicate model or model selection method with lowest MSE. Bold cells indicate model distribution matches source distribution.

Table A4: Results for methods of model averaging after assessing plausibility at 25% threshold.

Drug/ Trial/ Outcome/ Source distribution	True RMST (+/- 10%)	Measure	Results							
			Selection Method and Margin 1		Selection Method and Margin 2		Selection Method and Margin 3		Bayesian Model Averaging	Mean average of all models
			AIC (2 units)	BIC (2 units)	AIC (7 units)	BIC (6 units)	AIC (10 units)	BIC (10 units)	Using BIC to estimate Bayes Factors	
Dacomitinib/ ARCHER 1050/ OS/ Exponential	50.8 (45.7 - 55.9)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	51.58 [+0.74, +1%] (43.64, 59.65) 51.83 [+0.98, +2%] 23.32 0.05 4.77 69%	51.12 [+0.28, +1%] (43.73, 58.94) 51.03 [+0.19, +0%] 21.17 0.04 4.59 72%	52.08 [+1.24, +2%] (46.01, 58.56) 51.96 [+1.12, +2%] 16.15 0.04 3.82 80%	51.78 [+0.94, +2%] (44.71, 59.01) 51.87 [+1.02, +2%] 18.12 0.04 4.15 76%	52.14 [+1.30, +3%] (46.41, 58.54) 51.94 [+1.10, +2%] 15.54 0.04 3.72 81%	52.02 [+1.18, +2%] (45.93, 58.69) 51.90 [+1.06, +2%] 15.69 0.04 3.78 81%	51.32 [+0.48, +1%] (44.45, 58.42) 51.24 [+0.40, +1%] 17.78 4.19 77%	52.25 [+1.41, +3%] (47.02, 58.54) 51.94 [+1.10, +2%] 14.58 0.04 3.55 83%
Dacomitinib/ ARCHER 1050/ OS/ Weibull	39.3 (35.4 - 43.2)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	40.27 [+0.94, +2%] (33.46, 45.83) 40.64 [+1.30, +3%] 13.93 0.04 3.61 69%	40.45 [+1.12, +3%] (33.80, 45.68) 40.80 [+1.47, +4%] 12.58 0.03 3.37 72%	40.04 [+0.70, +2%] (35.79, 44.44) 39.91 [+0.58, +1%] 7.57 0.03 2.66 84%	40.00 [+0.67, +2%] (36.02, 44.26) 39.86 [+0.53, +1%] 6.89 0.03 2.54 87%	39.98 [+0.65, +2%] (36.11, 44.27) 39.81 [+0.48, +1%] 6.51 0.02 2.47 87%	39.97 [+0.64, +2%] (36.35, 44.12) 39.76 [+0.43, +1%] 5.92 0.02 2.35 89%	40.39 [+1.06, +3%] (34.71, 45.38) 40.51 [+1.18, +3%] 10.87 0.03 3.12 76%	40.16 [+0.83, +2%] (36.85, 44.18) 39.95 [+0.62, +2%] 5.50 0.02 2.19 90%
Dacomitinib/ ARCHER 1050/ OS/ Generalised gamma	35.7 (32.1 - 39.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	37.39 [+1.66, +5%] (31.66, 42.71) 37.65 [+1.93, +5%] 13.82 0.03 3.33 63%	37.68 [+1.95, +5%] (31.83, 42.68) 38.17 [+2.45, +7%] 14.22 0.03 3.23 60%	37.59 [+1.86, +5%] (33.55, 41.35) 37.61 [+1.88, +5%] 9.20 0.02 2.39 74%	37.60 [+1.87, +5%] (33.66, 41.27) 37.67 [+1.94, +5%] 8.96 0.02 2.33 75%	37.63 [+1.91, +5%] (33.96, 41.25) 37.59 [+1.86, +5%] 8.55 0.02 2.22 76%	37.63 [+1.90, +5%] (34.07, 41.18) 37.60 [+1.88, +5%] 8.29 0.02 2.16 77%	37.67 [+1.94, +5%] (32.53, 42.17) 37.85 [+2.12, +6%] 12.18 0.03 2.90 66%	37.65 [+1.93, +5%] (34.32, 41.17) 37.54 [+1.82, +5%] 8.01 0.02 2.07 77%
Pembrolizumab / KEYNOTE 045/ PFS/ Exponential	5.6 (5.0 - 6.2)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	5.64 [+0.04, +1%] (5.00, 6.37) 5.62 [+0.02, +0%] 0.17 0.00 0.41 83%	5.61 [+0.01, +0%] (5.00, 6.28) 5.59 [-0.01, -0%] 0.15 0.00 0.39 85%	5.66 [+0.06, +1%] (5.03, 6.37) 5.64 [+0.04, +1%] 0.16 0.00 0.40 84%	5.63 [+0.03, +0%] (5.01, 6.32) 5.61 [+0.01, +0%] 0.16 0.00 0.39 85%	5.66 [+0.06, +1%] (5.04, 6.37) 5.64 [+0.04, +1%] 0.16 0.00 0.40 84%	5.63 [+0.03, +1%] (5.01, 6.34) 5.61 [+0.01, +0%] 0.16 0.00 0.40 84%	5.62 [+0.02, +0%] (5.01, 6.29) 5.60 [+0.00, +0%] 0.15 0.00 0.39 85%	5.66 [+0.07, +1%] (5.07, 6.37) 5.64 [+0.04, +1%] 0.16 0.00 0.39 85%
Pembrolizumab / KEYNOTE 045/ PFS/ Weibull	5.8 (5.2 - 6.4)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	5.86 [+0.01, +0%] (5.09, 6.72) 5.83 [-0.02, -0%] 0.24 0.00 0.49 76%	5.74 [-0.10, -2%] (5.00, 6.60) 5.71 [-0.13, -2%] 0.21 0.00 0.48 75%	5.86 [+0.02, +0%] (5.13, 6.65) 5.84 [-0.01, -0%] 0.21 0.00 0.46 79%	5.80 [-0.05, -1%] (5.08, 6.58) 5.78 [-0.07, -1%] 0.20 0.00 0.45 80%	5.84 [+0.00, +0%] (5.13, 6.62) 5.83 [-0.02, -0%] 0.20 0.00 0.45 80%	5.80 [-0.04, -1%] (5.09, 6.57) 5.78 [-0.06, -1%] 0.20 0.00 0.47 80%	5.76 [-0.08, -1%] (5.04, 6.59) 5.73 [-0.11, -2%] 0.23 0.00 0.47 77%	5.82 [-0.02, -0%] (5.13, 6.55) 5.81 [-0.03, -1%] 0.19 0.00 0.43 82%
Pembrolizumab / KEYNOTE 045/ PFS/ Generalised gamma	12.0 (10.8 - 13.2)	Mean (5%, 95%) Median MSE MCSE	11.78 [-0.22, -2%] (9.24, 14.56) 11.75 [-0.25, -2%] 2.85 0.02	11.61 [-0.39, -3%] (9.19, 14.54) 11.48 [-0.52, -4%] 3.04 0.02	11.79 [-0.21, -2%] (9.25, 14.56) 11.76 [-0.24, -2%] 2.85 0.02	11.78 [-0.21, -2%] (9.25, 14.56) 11.76 [-0.24, -2%] 2.85 0.02	11.79 [-0.21, -2%] (9.25, 14.56) 11.76 [-0.24, -2%] 2.84 0.02	11.78 [-0.22, -2%] (9.22, 14.56) 11.74 [-0.26, -2%] 2.83 0.02	11.64 [-0.36, -3%] (9.22, 14.54) 11.52 [-0.48, -4%] 2.97 0.02	11.83 [-0.16, -1%] (9.31, 14.54) 11.79 [-0.20, -2%] 2.65 0.02
			1.67	1.67	1.67	1.67	1.67	1.67	1.69	1.62

		EmpSE % within 10%	1.67 42%	1.70 39%	42%	42%	42%	42%	40%	45%
Pertuzumab/ APHINITY/ IDFS/ Exponential	376.8 (339.1 - 414.5)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	389.10 [+12.26, +3%] (346.21, 434.92) 388.97 [+12.13, +3%] 918.71 0.28 27.72 80%	377.57 [+0.73, +0%] (352.84, 403.30) 377.35 [+0.50, +0%] 254.10 0.16 15.92 98%	389.24 [+12.40, +3%] (354.30, 424.77) 389.36 [+12.52, +3%] 625.94 0.22 21.73 87%	383.78 [+6.93, +2%] (347.93, 423.99) 381.70 [+4.86, +1%] 591.93 0.23 23.32 86%	389.89 [+13.05, +3%] (357.27, 424.75) 389.41 [+12.57, +3%] 602.64 0.21 20.79 87%	388.96 [+12.11, +3%] (353.71, 424.26) 389.49 [+12.65, +3%] 601.39 0.21 21.32 88%	379.33 [+2.49, +1%] (354.47, 404.69) 379.20 [+2.36, +1%] 249.41 0.16 15.60 98%	390.21 [+13.36, +4%] (358.88, 424.63) 389.42 [+12.58, +3%] 585.25 0.20 20.17 88%
Pertuzumab/ APHINITY/ IDFS/ Weibull	338.7 (304.8 - 372.6)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	356.78 [+18.13, +5%] (307.32, 398.18) 358.22 [+19.57, +6%] 1063.84 0.27 27.12 66%	375.39 [+36.74, +11%] (325.24, 404.81) 379.00 [+40.35, +12%] 1883.02 0.23 23.10 34%	357.16 [+18.50, +5%] (323.33, 395.96) 355.85 [+17.19, +5%] 852.90 0.23 22.59 74%	361.79 [+23.13, +7%] (324.59, 399.33) 361.75 [+23.10, +7%] 1075.03 0.23 23.24 65%	357.53 [+18.88, +6%] (324.50, 395.96) 355.85 [+17.19, +5%] 838.55 0.22 21.96 74%	360.39 [+21.74, +6%] (325.42, 397.67) 359.34 [+20.68, +6%] 972.20 0.22 22.36 70%	371.07 [+32.41, +10%] (328.01, 400.67) 373.89 [+35.24, +10%] 1520.06 0.22 21.67 46%	357.67 [+19.02, +6%] (325.18, 395.89) 355.85 [+17.19, +5%] 830.87 0.22 21.66 74%
Pertuzumab/ APHINITY/ IDFS/ Generalised gamma	333.5 (300.2 - 366.9)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	355.19 [+21.66, +6%] (303.76, 395.36) 357.73 [+24.20, +7%] 1213.19 0.27 27.28 60%	374.83 [+41.29, +12%] (320.39, 404.37) 379.05 [+45.52, +14%] 2275.54 0.24 23.88 23%	355.26 [+21.73, +7%] (319.01, 392.81) 354.54 [+21.01, +6%] 999.33 0.23 22.96 68%	360.88 [+27.35, +8%] (320.41, 398.87) 361.73 [+28.20, +8%] 1322.27 0.22 23.97 58%	355.64 [+22.11, +7%] (320.14, 392.81) 354.54 [+21.01, +6%] 981.27 0.22 22.19 69%	358.99 [+25.46, +8%] (321.38, 394.81) 359.02 [+25.49, +8%] 1157.57 0.23 22.57 62%	370.36 [+36.83, +11%] (323.67, 400.54) 373.88 [+40.35, +12%] 1861.86 0.22 22.49 35%	355.84 [+22.31, +7%] (321.09, 392.76) 354.58 [+21.05, +6%] 974.82 0.22 21.84 69%
Venetoclax/ MURANO/ OS/ Exponential	169.4 (152.5 - 186.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	173.81 [+4.40, +3%] (146.44, 202.10) 173.84 [+4.43, +3%] 324.49 0.17 17.47 61%	170.39 [+0.99, +1%] (146.69, 194.48) 170.17 [+0.76, +0%] 221.38 0.15 14.85 75%	175.15 [+5.74, +3%] (149.89, 199.99) 175.31 [+5.90, +3%] 281.70 0.16 15.77 64%	173.61 [+4.20, +2%] (148.20, 199.53) 173.97 [+4.56, +3%] 276.90 0.16 16.10 65%	175.04 [+5.63, +3%] (149.91, 199.73) 175.24 [+5.83, +3%] 277.14 0.16 15.67 65%	174.60 [+5.19, +3%] (149.53, 199.50) 174.97 [+5.56, +3%] 265.71 0.15 14.45 66%	171.63 [+2.23, +1%] (148.60, 195.15) 171.72 [+2.31, +1%] 207.15 0.14 14.22 76%	175.04 [+5.63, +3%] (149.94, 199.66) 175.19 [+5.78, +3%] 270.34 0.15 15.45 65%
Venetoclax/ MURANO/ OS/ Weibull	193.2 (173.9 - 212.5)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	194.28 [+1.06, +1%] (165.38, 219.30) 195.56 [+2.34, +1%] 259.95 0.16 16.09 75%	184.33 [-8.89, -5%] (154.83, 214.54) 184.16 [-9.07, -5%] 414.43 0.18 18.32 62%	193.25 [+0.03, +0%] (168.17, 214.32) 194.28 [+1.06, +1%] 192.27 0.14 13.87 83%	191.95 [-1.27, -1%] (166.61, 212.80) 193.01 [-0.21, -0%] 192.80 0.14 13.83 84%	192.89 [-0.33, -0%] (168.17, 213.38) 193.96 [+0.74, +0%] 185.02 0.14 13.60 84%	192.28 [-0.94, -0%] (168.22, 212.58) 193.20 [-0.02, -0%] 181.31 0.13 13.43 85%	187.84 [-5.38, -3%] (162.23, 213.14) 187.76 [-5.46, -3%] 268.95 0.15 15.49 75%	192.64 [-0.58, -0%] (168.17, 212.42) 193.80 [+0.58, +0%] 178.98 0.13 13.37 85%
Venetoclax/ MURANO/ OS/ Generalised gamma	190.3 (171.3- 209.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	193.97 [+3.71, +2%] (164.32, 219.25) 195.56 [+5.29, +3%] 283.94 0.16 16.44 72%	184.07 [-6.20, -3%] (153.95, 214.40) 183.86 [-6.40, -3%] 386.49 0.19 18.66 64%	193.11 [+2.84, +1%] (166.68, 214.60) 194.37 [+4.11, +2%] 213.42 0.14 14.33 79%	191.85 [+1.59, +1%] (165.08, 213.39) 192.93 [+2.67, +1%] 207.63 0.14 14.32 80%	192.78 [+2.52, +1%] (166.68, 213.82) 194.02 [+3.75, +2%] 204.71 0.14 14.08 80%	192.18 [+1.92, +1%] (166.73, 213.11) 193.22 [+2.95, +2%] 197.89 0.14 13.94 81%	187.64 [-2.63, -1%] (161.00, 213.27) 187.73 [-2.53, -1%] 258.79 0.16 15.87 75%	192.55 [+2.28, +1%] (166.72, 213.03) 193.85 [+3.59, +2%] 196.38 0.14 13.83 81%

AIC: Akaike information criterion; BIC: Bayes information criterion; EmpSE: empirical standard error; IDFS: invasive disease free survival; MCSE: Monte-Carlo standard error; MSE: mean squared error; OS: overall survival; PFS: progression free survival.

Shaded cells indicate model or model selection method with lowest MSE. Bold cells indicate model distribution matches source distribution.

Table A5: Results for when prior belief of RMST was 10% above true value.

Drug/ Trial/ Outcome/ Source distribution	True RMST (+/- 10%)	Measure	Results							
			Selection Method and Margin 1		Selection Method and Margin 2		Selection Method and Margin 3		Bayesian Model Averaging	Mean average of all models
			AIC (2 units)	BIC (2 units)	AIC (7 units)	BIC (6 units)	AIC (10 units)	BIC (10 units)	Using BIC to estimate Bayes Factors	
Dacomitinib/ ARCHER 1050/ OS/ Exponential	50.8 (45.7 - 55.9)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	53.47 [+2.63, +5%] (45.65, 61.95) 53.18 [+2.34, +5%] 31.58 0.05 4.97 62%	51.87 [+1.03, +2%] (44.91, 59.82) 51.54 [+0.70, +1%] 21.81 0.05 4.56 73%	54.63 [+3.78, +7%] (48.98, 60.59) 54.52 [+3.67, +7%] 27.36 0.04 3.61 64%	53.78 [+2.94, +6%] (47.16, 60.08) 53.97 [+3.13, +6%] 25.51 0.04 4.11 64%	54.80 [+3.96, +8%] (49.56, 60.55) 54.60 [+3.75, +7%] 27.37 0.03 3.42 64%	54.46 [+3.62, +7%] (48.79, 60.15) 54.47 [+3.63, +7%] 25.81 0.04 3.57 65%	52.52 [+1.68, +3%] (45.94, 59.62) 52.51 [+1.67, +3%] 20.24 0.03 4.17 76%	55.07 [+4.23, +8%] (50.57, 60.53) 54.68 [+3.84, +8%] 27.56 0.03 3.11 64%
Dacomitinib/ ARCHER 1050/ OS/ Weibull	39.3 (35.4 - 43.2)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	41.84 [+2.51, +6%] (35.95, 47.72) 41.88 [+2.55, +6%] 19.43 0.04 3.63 60%	42.17 [+2.84, +7%] (36.15, 47.48) 42.49 [+3.16, +8%] 19.94 0.03 3.45 56%	42.19 [+2.86, +7%] (38.54, 46.29) 42.02 [+2.69, +7%] 13.66 0.02 2.34 70%	42.26 [+2.93, +7%] (38.83, 46.00) 42.17 [+2.84, +7%] 13.43 0.02 2.20 69%	42.31 [+2.98, +8%] (38.92, 46.01) 42.20 [+2.87, +7%] 13.48 0.02 2.15 70%	42.44 [+3.10, +8%] (39.18, 45.83) 42.40 [+3.07, +8%] 13.72 0.02 2.02 68%	42.18 [+2.84, +7%] (37.14, 47.36) 42.14 [+2.81, +7%] 17.74 0.03 3.11 63%	42.90 [+3.57, +9%] (39.81, 45.96) 42.90 [+3.56, +9%] 16.26 0.02 1.88 59%
Dacomitinib/ ARCHER 1050/ OS/ Generalised gamma	35.7 (32.1 - 39.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	38.24 [+2.51, +7%] (32.06, 44.49) 38.44 [+2.71, +8%] 21.05 0.04 3.84 53%	38.60 [+2.87, +8%] (32.20, 44.33) 39.13 [+3.40, +10%] 22.38 0.04 3.76 47%	38.81 [+3.08, +9%] (34.62, 43.52) 38.63 [+2.90, +8%] 16.76 0.03 2.69 59%	38.85 [+3.13, +9%] (34.80, 43.33) 38.67 [+2.95, +8%] 16.45 0.03 2.58 59%	38.94 [+3.21, +9%] (35.28, 43.38) 38.70 [+2.97, +8%] 16.32 0.02 2.45 59%	38.99 [+3.26, +9%] (35.49, 43.24) 38.74 [+3.02, +8%] 16.05 0.02 2.33 59%	38.64 [+2.91, +8%] (33.03, 44.20) 38.76 [+3.04, +8%] 21.00 0.04 3.54 54%	39.14 [+3.41, +10%] (35.86, 43.28) 38.91 [+3.18, +9%] 16.51 0.02 2.20 57%
Pembrolizumab / KEYNOTE 045/ PFS/ Exponential	5.6 (5.0 - 6.2)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	5.67 [+0.07, +1%] (5.02, 6.45) 5.63 [+0.03, +1%] 0.19 0.00 0.44 82%	5.63 [+0.03, +0%] (5.02, 6.32) 5.60 [-0.00, -0%] 0.16 0.00 0.40 82%	5.69 [+0.09, +2%] (5.06, 6.43) 5.67 [+0.07, +1%] 0.18 0.00 0.42 82%	5.65 [+0.05, +1%] (5.03, 6.37) 5.63 [+0.03, +0%] 0.17 0.00 0.41 84%	5.69 [+0.09, +2%] (5.06, 6.42) 5.67 [+0.07, +1%] 0.18 0.00 0.41 83%	5.66 [+0.06, +1%] (5.03, 6.38) 5.63 [+0.03, +1%] 0.17 0.00 0.41 84%	5.63 [+0.03, +1%] (5.03, 6.32) 5.61 [+0.01, +0%] 0.16 0.00 0.40 85%	5.72 [+0.12, +2%] (5.16, 6.42) 5.68 [+0.08, +1%] 0.16 0.00 0.39 85%
Pembrolizumab / KEYNOTE 045/ PFS/ Weibull	5.8 (5.2 - 6.4)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	5.91 [+0.07, +1%] (5.17, 6.87) 5.86 [+0.02, +0%] 0.27 0.01 0.51 76%	5.78 [-0.06, -1%] (5.10, 6.65) 5.73 [-0.12, -2%] 0.24 0.00 0.49 76%	5.93 [+0.08, +1%] (5.23, 6.78) 5.89 [+0.04, +1%] 0.23 0.00 0.47 79%	5.85 [+0.01, +0%] (5.18, 6.68) 5.81 [-0.03, -1%] 0.21 0.00 0.46 81%	5.91 [+0.07, +1%] (5.23, 6.74) 5.88 [+0.03, +1%] 0.22 0.00 0.46 81%	5.86 [+0.02, +0%] (5.20, 6.67) 5.82 [-0.02, -0%] 0.20 0.00 0.45 81%	5.79 [-0.05, -1%] (5.14, 6.66) 5.75 [-0.09, -2%] 0.34 0.01 0.58 78%	5.90 [+0.05, +1%] (5.24, 6.67) 5.86 [+0.02, +0%] 0.19 0.00 0.44 83%
Pembrolizumab / KEYNOTE 045/ PFS/ Generalised gamma	12.0 (10.8 - 13.2)	Mean (5%, 95%) Median MSE MCSE	12.94 [+0.95, +8%] (10.47, 15.71) 12.87 [+0.87, +7%] 3.58 0.02 1.64	12.76 [+0.76, +6%] (10.48, 15.69) 12.58 [+0.58, +5%] 3.39 0.02 1.67	12.95 [+0.95, +8%] (10.48, 15.70) 12.87 [+0.88, +7%] 3.58 0.02 1.63	12.95 [+0.95, +8%] (10.48, 15.70) 12.87 [+0.88, +7%] 3.58 0.02 1.63	12.95 [+0.95, +8%] (10.48, 15.70) 12.87 [+0.88, +7%] 3.58 0.02 1.63	12.95 [+0.95, +8%] (10.48, 15.70) 12.87 [+0.88, +7%] 3.57 0.02 1.63	9.05 [-2.95, -25%] (0.00, 15.51) 11.59 [-0.41, -3%] 44.52 0.06 5.99	12.99 [+0.99, +8%] (10.53, 15.70) 12.92 [+0.92, +8%] 3.54 0.02 1.60

		EmpSE % within 10%	45%	47%	45%	45%	45%	45%	34%	46%
Pertuzumab/ APHINITY/ IDFS/ Exponential	376.8 (339.1 - 414.5)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	398.70 [+21.86, +6%] (352.75, 459.05) 394.07 [+17.23, +5%] 1558.54 0.33 32.88 69%	378.35 [+1.51, +0%] (353.55, 405.04) 377.56 [+0.72, +0%] 279.31 0.17 16.65 97%	402.42 [+25.58, +7%] (366.51, 441.36) 402.20 [+23.71, +6%] 1221.03 0.24 23.81 67%	390.58 [+13.74, +4%] (353.05, 439.16) 384.75 [+7.90, +2%] 914.42 0.27 26.94 77%	404.38 [+27.54, +7%] (371.50, 441.33) 402.20 [+25.35, +7%] 1251.00 0.22 22.20 66%	398.53 [+21.69, +6%] (360.18, 438.82) 396.58 [+19.74, +5%] 1063.53 0.24 24.36 71%	382.03 [+5.18, +1%] (357.17, 408.95) 381.21 [+4.36, +1%] 296.53 0.16 16.42 97%	405.51 [+28.67, +8%] (374.32, 441.24) 403.02 [+26.18, +7%] 1262.87 0.21 21.00 66%
Pertuzumab/ APHINITY/ IDFS/ Weibull	338.7 (304.8 - 372.6)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	370.33 [+31.68, +9%] (321.59, 422.99) 369.42 [+30.76, +9%] 1804.34 0.28 28.30 56%	379.20 [+40.54, +12%] (344.91, 409.11) 379.92 [+41.26, +12%] 2013.63 0.19 19.23 33%	372.10 [+33.44, +10%] (346.89, 405.91) 369.85 [+31.20, +9%] 1436.21 0.18 17.83 57%	369.81 [+31.16, +9%] (339.03, 402.10) 368.78 [+30.13, +9%] 1316.98 0.19 18.61 59%	372.83 [+34.17, +10%] (350.59, 405.91) 369.99 [+31.34, +9%] 1450.94 0.17 16.83 56%	371.95 [+33.30, +10%] (346.63, 406.09) 369.72 [+31.06, +9%] 1417.70 0.18 17.58 58%	376.39 [+37.74, +11%] (348.07, 402.56) 377.16 [+38.51, +11%] 1708.45 0.17 16.86 39%	373.07 [+34.42, +10%] (351.56, 405.41) 370.14 [+31.48, +9%] 1450.67 0.16 16.32 56%
Pertuzumab/ APHINITY/ IDFS/ Generalised gamma	333.5 (300.2 - 366.9)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	366.97 [+33.44, +10%] (317.56, 417.09) 366.53 [+33.00, +10%] 2449.21 0.28 27.64 50%	378.77 [+45.24, +14%] (339.81, 408.27) 380.14 [+46.61, +14%] 2013.63 0.20 20.07 22%	368.42 [+34.89, +10%] (342.69, 404.35) 365.54 [+32.00, +10%] 1571.58 0.19 18.82 53%	367.81 [+34.28, +10%] (337.81, 402.15) 365.82 [+32.29, +10%] 1545.21 0.19 19.25 52%	369.07 [+35.54, +11%] (345.49, 404.33) 365.70 [+32.17, +10%] 1585.14 0.18 17.95 53%	369.16 [+35.63, +11%] (344.49, 405.52) 365.78 [+32.24, +10%] 1612.74 0.19 18.53 53%	375.32 [+41.79, +13%] (345.28, 402.93) 376.26 [+42.73, +13%] 2059.38 0.18 17.70 29%	369.32 [+35.78, +11%] (346.47, 404.15) 365.84 [+32.31, +10%] 1587.15 0.18 17.51 53%
Venetoclax/ MURANO/ OS/ Exponential	169.4 (152.5 - 186.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	178.41 [+9.00, +5%] (154.14, 210.36) 175.97 [+6.56, +4%] 387.20 0.18 17.50 65%	172.10 [+2.69, +2%] (150.15, 198.26) 171.43 [+2.02, +1%] 224.61 0.15 14.74 76%	179.28 [+9.87, +6%] (158.12, 205.67) 177.51 [+8.11, +5%] 322.27 0.15 15.00 67%	177.42 [+8.02, +5%] (156.42, 204.45) 175.77 [+6.36, +4%] 295.67 0.15 15.21 70%	179.16 [+9.75, +6%] (158.16, 205.18) 177.43 [+8.02, +5%] 315.89 0.15 14.86 67%	178.55 [+9.15, +5%] (157.72, 204.88) 176.79 [+7.38, +4%] 298.45 0.15 14.66 69%	174.19 [+4.78, +3%] (153.19, 199.42) 173.27 [+3.86, +2%] 256.07 0.15 15.27 76%	179.16 [+9.76, +6%] (158.16, 205.12) 177.42 [+8.01, +5%] 308.71 0.15 14.61 67%
Venetoclax/ MURANO/ OS/ Weibull	193.2 (173.9 - 212.5)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	196.20 [+2.98, +2%] (174.38, 219.30) 196.02 [+2.80, +1%] 194.26 0.14 13.62 83%	189.17 [-4.05, -2%] (167.77, 214.68) 188.60 [-4.63, -2%] 226.38 0.15 14.49 76%	195.52 [+2.29, +1%] (176.49, 214.32) 195.80 [+2.58, +1%] 136.57 0.11 11.46 91%	194.48 [+1.25, +1%] (175.71, 212.80) 194.91 [+1.68, +1%] 130.45 0.11 11.35 92%	195.29 [+2.07, +1%] (176.49, 213.38) 195.71 [+2.49, +1%] 130.21 0.11 11.22 92%	194.83 [+1.61, +1%] (176.42, 212.58) 195.31 [+2.09, +1%] 125.55 0.11 11.09 93%	191.32 [-1.90, -1%] (172.34, 213.18) 191.16 [-2.06, -1%] 208.98 0.14 14.33 87%	195.16 [+1.94, +1%] (176.49, 212.44) 195.70 [+2.48, +1%] 125.51 0.11 11.03 93%
Venetoclax/ MURANO/ OS/ Generalised gamma	190.3 (171.3- 209.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	195.70 [+5.43, +3%] (172.90, 219.25) 195.78 [+5.51, +3%] 227.42 0.14 14.07 78%	188.20 [-2.06, -1%] (165.38, 214.55) 187.46 [-2.81, -1%] 232.99 0.15 15.12 76%	195.10 [+4.83, +3%] (175.05, 214.60) 195.38 [+5.12, +3%] 167.69 0.12 12.01 86%	194.03 [+3.77, +2%] (174.10, 213.39) 194.55 [+4.29, +2%] 157.20 0.12 11.96 88%	194.88 [+4.62, +2%] (175.06, 213.82) 195.37 [+5.10, +3%] 159.93 0.12 11.77 87%	194.38 [+4.12, +2%] (174.80, 213.11) 194.81 [+4.54, +2%] 152.68 0.12 11.65 88%	190.60 [+0.33, +0%] (170.54, 213.27) 190.19 [-0.07, -0%] 211.75 0.12 14.55 85%	194.73 [+4.47, +2%] (175.08, 213.03) 195.37 [+5.10, +3%] 153.83 0.12 11.57 88%

Table A6: Results for when prior belief of RMST was 10% below true value.

Drug/ Trial/ Outcome/ Source distribution	True RMST (+/- 10%)	Measure	Results
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			Selection Method and Margin 1		Selection Method and Margin 2		Selection Method and Margin 3		Bayesian Model Averaging	Mean average of all models
			AIC (2 units)	BIC (2 units)	AIC (7 units)	BIC (6 units)	AIC (10 units)	BIC (10 units)	Using BIC to estimate Bayes Factors	
Dacomitinib/ ARCHER 1050/ OS/ Exponential	50.8 (45.7 - 55.9)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	49.83 [-1.02, -2%] (42.08, 56.55) 50.03 [-0.81, -2%] 20.43 0.04 4.40 75%	50.35 [-0.49, -1%] (43.26, 56.93) 50.56 [-0.28, -1%] 17.64 0.04 4.17 76%	49.85 [-0.99, -2%] (43.46, 56.19) 49.89 [-0.95, -2%] 16.16 0.04 3.90 78%	50.03 [-0.81, -2%] (43.46, 56.40) 49.87 [-0.97, -2%] 16.20 0.04 3.94 79%	49.86 [-0.98, -2%] (43.57, 56.18) 49.88 [-0.96, -2%] 15.85 0.04 3.86 78%	49.86 [-0.96, -2%] (43.68, 56.33) 49.81 [-1.03, -2%] 15.84 0.04 3.86 78%	49.02 [-1.82, -4%] (42.45, 56.37) 50.15 [-0.69, -1%] 76.27 0.09 8.54 78%	49.90 [-0.95, -2%] (43.71, 56.18) 49.89 [-0.95, -2%] 15.33 0.04 3.80 78%
Dacomitinib/ ARCHER 1050/ OS/ Weibull	39.3 (35.4 - 43.2)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	39.12 [-0.21, -1%] (33.34, 43.69) 39.30 [-0.03, -0%] 9.28 0.03 3.04 80%	39.22 [-0.11, -0%] (33.75, 43.67) 39.33 [-0.00, -0%] 8.23 0.03 2.87 83%	38.64 [-0.69, -2%] (34.70, 42.12) 38.80 [-0.53, -1%] 5.85 0.02 2.32 90%	38.59 [-0.74, -2%] (34.77, 42.02) 38.71 [-0.62, -2%] 5.70 0.02 2.27 90%	38.52 [-0.81, -2%] (34.83, 41.96) 38.57 [-0.76, -2%] 5.59 0.02 2.22 91%	38.47 [-0.87, -2%] (34.91, 41.88) 38.50 [-0.83, -2%] 5.50 0.02 2.18 91%	38.96 [-0.37, -1%] (34.23, 43.24) 39.25 [-0.09, -0%] 13.39 0.04 3.64 86%	38.49 [-0.84, -2%] (35.09, 41.88) 38.45 [-0.88, -2%] 5.20 0.02 2.12 92%
Dacomitinib/ ARCHER 1050/ OS/ Generalised gamma	35.7 (32.1 - 39.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	36.18 [+0.45, +1%] (31.62, 40.00) 36.34 [+0.61, +2%] 6.47 0.03 2.50 82%	36.35 [+0.62, +2%] (31.81, 40.04) 36.52 [+0.79, +2%] 6.18 0.02 2.41 83%	36.17 [+0.44, +1%] (33.16, 39.08) 36.20 [+0.47, +1%] 3.62 0.02 1.85 94%	36.17 [+0.44, +1%] (33.21, 39.02) 36.20 [+0.47, +1%] 3.45 0.02 1.80 94%	36.17 [+0.45, +1%] (33.45, 38.95) 36.18 [+0.45, +1%] 3.21 0.02 1.74 95%	36.16 [+0.43, +1%] (33.48, 38.89) 36.40 [+0.67, +2%] 3.10 0.02 1.71 96%	35.74 [+0.02, +0%] (32.00, 39.59) 36.40 [+0.67, +2%] 25.15 0.05 5.02 87%	36.16 [+0.44, +1%] (33.52, 38.85) 36.16 [+0.43, +1%] 3.00 0.02 1.68 96%
Pembrolizumab / KEYNOTE 045/ PFS/ Exponential	5.6 (5.0 - 6.2)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	5.60 [+0.00, +0%] (5.00, 6.24) 5.60 [-0.00, -0%] 0.14 0.00 0.37 86%	5.59 [-0.01, -0%] (5.00, 6.22) 5.59 [-0.01, -0%] 0.13 0.00 0.36 87%	5.62 [+0.02, +0%] (5.02, 6.23) 5.61 [+0.02, +0%] 0.13 0.00 0.36 87%	5.60 [-0.00, -0%] (5.00, 6.22) 5.59 [-0.01, -0%] 0.13 0.00 0.36 87%	5.62 [+0.02, +0%] (5.02, 6.22) 5.61 [+0.02, +0%] 0.13 0.00 0.36 87%	5.60 [+0.00, +0%] (5.00, 6.22) 5.60 [-0.00, -0%] 0.13 0.00 0.36 87%	5.52 [-0.08, -1%] (4.95, 6.21) 5.58 [-0.02, -0%] 0.56 0.01 0.74 86%	5.62 [+0.02, +0%] (5.03, 6.22) 5.62 [+0.02, +0%] 0.13 0.00 0.36 87%
Pembrolizumab / KEYNOTE 045/ PFS/ Weibull	5.8 (5.2 - 6.4)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	5.80 [-0.04, -1%] (5.08, 6.51) 5.81 [-0.04, -1%] 0.19 0.00 0.43 80%	5.72 [-0.12, -2%] (4.99, 6.47) 5.70 [-0.14, -2%] 0.21 0.00 0.45 77%	5.80 [-0.05, -1%] (5.10, 6.46) 5.80 [-0.04, -1%] 0.17 0.00 0.41 83%	5.75 [-0.09, -2%] (5.07, 6.42) 5.76 [-0.09, -1%] 0.18 0.00 0.41 83%	5.78 [-0.06, -1%] (5.10, 6.43) 5.79 [-0.06, -1%] 0.17 0.00 0.41 84%	5.75 [-0.09, -2%] (5.07, 6.41) 5.76 [-0.09, -1%] 0.17 0.00 0.41 84%	5.71 [-0.13, -2%] (5.02, 6.47) 5.72 [-0.12, -2%] 0.31 0.01 0.54 78%	5.76 [-0.08, -1%] (5.09, 6.39) 5.77 [-0.07, -1%] 0.16 0.00 0.39 86%
Pembrolizumab / KEYNOTE 045/ PFS/ Generalised gamma	12.0 (10.8 - 13.2)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	10.40 [-1.60, -13%] (7.96, 13.37) 10.29 [-1.71, -14%] 5.75 0.02 1.79 35%	10.27 [-1.72, -14%] (7.94, 13.37) 10.03 [-1.97, -16%] 6.15 0.02 1.78 32%	10.40 [-1.60, -13%] (7.96, 13.39) 10.29 [-1.71, -14%] 5.74 0.02 1.79 35%	10.39 [-1.61, -13%] (7.96, 13.39) 10.26 [-1.74, -14%] 5.78 0.02 1.79 34%	10.41 [-1.59, -13%] (7.98, 13.39) 10.27 [-1.72, -14%] 5.66 0.02 1.77 34%	10.37 [-1.63, -14%] (7.98, 13.37) 10.18 [-1.81, -15%] 5.73 0.02 1.76 33%	8.80 [-3.20, -27%] (0.00, 13.29) 9.48 [-2.52, -21%] 26.08 0.04 3.98 27%	10.34 [-1.66, -14%] (8.01, 13.22) 10.26 [-1.73, -14%] 5.39 0.02 1.62 33%
Pertuzumab/ APHINITY/ IDFS/ Exponential	376.8 (339.1 - 414.5)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	377.44 [+0.59, +0%] (336.97, 410.82) 379.69 [+2.84, +1%] 580.89 0.24 24.10 91%	376.71 [-0.14, -0%] (352.22, 401.42) 377.14 [+0.30, +0%] 541.34 0.16 15.60 98%	375.83 [-1.01, -0%] (336.21, 409.03) 378.00 [+1.16, +0%] 541.34 0.23 23.25 92%	376.83 [-0.01, -0%] (341.69, 408.12) 377.51 [+0.66, +0%] 412.19 0.20 20.30 95%	375.84 [-1.00, -0%] (336.49, 409.00) 377.99 [+1.15, +0%] 537.71 0.23 23.17 92%	378.78 [+1.94, +1%] (340.12, 409.56) 381.19 [+4.34, +1%] 490.77 0.22 22.07 94%	376.49 [-0.35, -0%] (352.07, 400.32) 376.95 [+0.11, +0%] 246.82 0.16 15.71 99%	375.92 [-0.93, -0%] (336.63, 408.98) 378.01 [+1.16, +0%] 528.41 0.23 22.97 92%
Pertuzumab/ APHINITY/ IDFS/ Weibull	338.7 (304.8 - 372.6)	Mean (5%, 95%) Median MSE	342.01 [+3.36, +1%] (295.38, 380.14) 345.48 [+6.82, +2%] 683.60	361.46 [+22.81, +7%] (308.53, 387.29) 369.63 [+30.97, +9%] 1214.46	341.47 [+2.81, +1%] (304.77, 378.45) 341.71 [+3.05, +1%] 501.48	351.23 [+12.57, +4%] (309.13, 385.11) 354.14 [+15.48, +5%] 745.49	341.83 [+3.17, +1%] (306.97, 378.45) 341.71 [+3.05, +1%] 469.38	345.82 [+7.16, +2%] (308.82, 380.09) 347.07 [+8.42, +2%] 502.79	347.38 [+8.73, +3%] (285.00, 384.39) 363.39 [+24.74, +7%] 4414.49	341.99 [+3.34, +1%] (307.30, 378.33) 341.69 [+3.04, +1%] 447.80

		MCSE EmpSE % within 10%	0.26 25.93 81%	0.27 26.35 52%	0.23 22.22 87%	0.25 24.24 76%	0.22 21.43 88%	0.22 21.25 86%	0.66 65.87 62%	0.21 20.90 88%
Pertuzumab/ APHINITY/ DFS/ Generalised gamma	333.5 (300.2 - 366.9)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	336.76 [+3.23, +1%] (291.72, 375.09) 339.62 [+6.09, +2%] 657.86 0.26 25.45 81%	354.14 [+20.61, +6%] (304.36, 381.77) 362.63 [+29.10, +9%] 1155.78 0.28 27.04 53%	336.37 [+2.84, +1%] (300.46, 373.06) 336.54 [+3.01, +1%] 480.63 0.22 21.74 87%	345.83 [+12.30, +4%] (305.54, 379.90) 348.32 [+14.79, +4%] 746.32 0.25 24.40 76%	336.66 [+3.13, +1%] (302.94, 373.06) 336.54 [+3.01, +1%] 457.51 0.22 21.16 88%	340.14 [+6.61, +2%] (303.89, 375.05) 340.93 [+7.39, +2%] 494.75 0.22 21.24 86%	334.99 [+1.46, +0%] (235.02, 378.95) 355.51 [+21.98, +7%] 6154.54 0.78 78.44 61%	336.86 [+3.33, +1%] (303.20, 373.04) 336.54 [+3.01, +1%] 436.70 0.21 20.63 88%
Venetoclax/ MURANO/ OS/ Exponential	169.4 (152.5 - 186.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	167.01 [-2.40, -1%] (138.11, 188.80) 169.17 [-0.24, -0%] 264.10 0.16 16.07 71%	167.80 [-1.61, -1%] (142.21, 189.36) 168.77 [-0.64, -0%] 207.38 0.14 14.31 78%	168.24 [-1.17, -1%] (142.05, 188.62) 170.26 [+0.85, +1%] 220.26 0.15 14.80 74%	167.89 [-1.52, -1%] (141.25, 188.57) 170.16 [+0.76, +0%] 228.34 0.15 15.04 73%	168.27 [-1.14, -1%] (142.20, 188.61) 170.26 [+0.85, +1%] 217.41 0.15 14.70 74%	168.32 [-1.09, -1%] (142.09, 188.62) 170.41 [+1.01, +1%] 212.79 0.15 14.55 74%	164.51 [-4.89, -3%] (141.16, 187.87) 168.67 [-0.74, -0%] 712.10 0.26 26.23 78%	168.30 [-1.11, -1%] (142.24, 188.61) 170.26 [+0.85, +1%] 211.53 0.15 14.50 74%
Venetoclax/ MURANO/ OS/ Weibull	193.2 (173.9 - 212.5)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	193.00 [-0.22, -0%] (162.46, 215.46) 195.48 [+2.26, +1%] 256.05 0.16 16.00 78%	183.06 [-10.16, -5%] (152.97, 211.32) 183.80 [-9.42, -5%] 432.36 0.18 18.14 63%	192.06 [-1.16, -1%] (164.69, 211.65) 194.21 [+0.99, +1%] 202.50 0.14 14.18 84%	190.74 [-2.48, -1%] (163.87, 210.09) 192.91 [-0.31, -0%] 203.56 0.14 14.05 85%	191.68 [-1.54, -1%] (164.64, 210.54) 193.88 [+0.66, +0%] 196.34 0.14 13.93 85%	191.07 [-2.15, -1%] (164.91, 209.81) 193.09 [-0.13, -0%] 192.16 0.15 13.69 85%	186.54 [-6.68, -3%] (159.97, 210.07) 187.55 [-5.67, -3%] 284.60 0.15 15.49 76%	191.40 [-1.82, -1%] (164.67, 209.49) 193.71 [+0.49, +0%] 191.01 0.14 13.70 86%
Venetoclax/ MURANO/ OS/ Generalised gamma	190.3 (171.3- 209.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	191.86 [+1.59, +1%] (161.50, 213.01) 194.61 [+4.35, +2%] 244.92 0.16 15.57 77%	182.35 [-7.92, -4%] (152.79, 209.38) 183.15 [-7.12, -4%] 375.45 0.18 17.69 67%	191.29 [+1.02, +1%] (163.83, 210.38) 193.85 [+3.59, +2%] 195.09 0.14 13.93 84%	190.00 [-0.26, -0%] (162.82, 209.18) 192.33 [+2.07, +1%] 191.44 0.14 13.83 85%	190.95 [+0.69, +0%] (163.75, 209.50) 193.60 [+3.33, +2%] 188.04 0.14 13.70 85%	190.34 [+0.08, +0%] (163.91, 208.85) 192.68 [+2.42, +1%] 181.12 0.13 13.46 86%	185.83 [-4.43, -2%] (159.18, 208.54) 186.84 [-3.42, -2%] 245.37 0.15 15.02 78%	190.72 [+0.45, +0%] (163.82, 208.71) 193.43 [+3.17, +2%] 180.76 0.13 13.44 86%

Table A7: Comparison of single model selection methods after plausibility at RMST threshold when prior belief of RMST was biased

Drug/ Trial/ Outcome/ Source distribution	True RMST (+/- 10%)	Measure	Results					
			25% when prior was 10% too low			25% when prior was 10% too high		
			AIC	BIC	Log-likelihood	AIC	BIC	Log-likelihood

Dacomitinib/ ARCHER 1050/ OS/ Exponential	50.8 (45.7 - 55.9)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	50.13 [-0.71, -1%] (39.59, 57.45) 50.74 [-0.10, -0%] 27.91 0.05 5.24 69%	50.34 [-0.50, -1%] (43.15, 57.14) 50.54 [-0.31, -1%] 18.93 0.04 4.32 75%	49.46 [-1.38, -3%] (36.28, 57.89) 51.18 [+0.34, +1%] 50.19 0.07 6.95 49%	53.19 [+2.35, +5%] (44.66, 65.40) 52.36 [+1.52, +3%] 41.77 0.06 6.02 62%	51.67 [+0.83, +2%] (44.71, 60.15) 51.25 [+0.41, +1%] 23.14 0.05 4.74 73%	55.80 [+4.96, +10%] (44.09, 67.37) 56.00 [+5.16, +10%] 81.85 0.08 7.57 37%
Dacomitinib/ ARCHER 1050/ OS/ Weibull	39.3 (35.4 - 43.2)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	39.30 [-0.04, -0%] (32.50, 44.59) 39.65 [+0.32, +1%] 13.46 0.04 3.67 67%	39.32 [-0.01, -0%] (32.60, 44.58) 39.65 [+0.32, +1%] 13.22 0.04 3.64 68%	39.22 [-0.11, -0%] (32.05, 44.71) 39.81 [+0.48, +1%] 16.48 0.04 4.06 59%	41.78 [+2.44, +6%] (34.47, 51.40) 40.96 [+1.62, +4%] 33.20 0.05 5.22 52%	41.87 [+2.54, +6%] (34.51, 51.54) 40.96 [+1.63, +4%] 34.51 0.05 5.30 52%	42.33 [+3.00, +8%] (34.14, 51.85) 41.82 [+2.49, +6%] 41.79 0.06 5.73 43%
Dacomitinib/ ARCHER 1050/ OS/ Generalised gamma	35.7 (32.1 - 39.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	36.26 [+0.53, +1%] (31.28, 40.56) 36.48 [+0.75, +2%] 8.78 0.03 2.91 72%	36.27 [+0.54, +2%] (31.35, 40.54) 36.46 [+0.74, +2%] 8.55 0.03 2.87 72%	35.93 [+0.20, +1%] (30.98, 40.57) 36.06 [+0.34, +1%] 9.19 0.03 3.02 71%	37.99 [+2.26, +6%] (31.58, 46.25) 37.55 [+1.83, +5%] 25.63 0.05 4.53 54%	38.03 [+2.31, +6%] (31.66, 46.31) 37.57 [+1.84, +5%] 25.79 0.05 4.52 54%	37.89 [+2.17, +6%] (31.35, 46.90) 36.78 [+1.05, +3%] 28.96 0.05 4.93 54%
Pembrolizumab / KEYNOTE 045/ PFS/ Exponential	5.6 (5.0 - 6.2)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	5.59 [-0.01, -0%] (4.98, 6.25) 5.58 [-0.02, -0%] 0.14 0.00 0.38 85%	5.59 [-0.01, -0%] (5.00, 6.23) 5.59 [-0.01, -0%] 0.13 0.00 0.36 86%	5.70 [+0.10, +2%] (5.02, 6.35) 5.71 [+0.11, +2%] 0.18 0.00 0.41 78%	5.65 [+0.05, +1%] (5.00, 6.49) 5.60 [+0.00, +0%] 0.21 0.00 0.46 82%	5.63 [+0.03, +0%] (5.02, 6.32) 5.60 [-0.00, -0%] 0.16 0.00 0.40 85%	5.88 [+0.28, +5%] (5.04, 7.05) 5.79 [+0.19, +3%] 0.44 0.01 0.60 67%
Pembrolizumab / KEYNOTE 045/ PFS/ Weibull	5.8 (5.2 - 6.4)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	5.80 [-0.04, -1%] (5.05, 6.56) 5.80 [-0.05, -1%] 0.22 0.00 0.46 76%	5.72 [-0.12, -2%] (4.98, 6.51) 5.70 [-0.15, -3%] 0.23 0.00 0.46 76%	5.93 [+0.08, +1%] (5.11, 6.63) 5.95 [+0.11, +2%] 0.23 0.00 0.47 73%	5.91 [+0.06, +1%] (5.12, 6.98) 5.83 [-0.01, -0%] 0.32 0.01 0.56 73%	5.78 [-0.06, -1%] (5.07, 6.72) 5.72 [-0.12, -2%] 0.26 0.01 0.51 75%	6.16 [+0.32, +5%] (5.18, 7.47) 6.07 [+0.23, +4%] 0.57 0.01 0.68 60%
Pembrolizumab / KEYNOTE 045/ PFS/ Generalised gamma	12.0 (10.8 - 13.2)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	10.30 [-1.70, -14%] (7.95, 13.38) 10.07 [-1.93, -16%] 6.10 0.02 1.79 32%	10.27 [-1.73, -14%] (7.94, 13.37) 10.02 [-1.98, -17%] 6.17 0.02 1.78 31%	10.52 [-1.48, -12%] (7.96, 13.48) 10.44 [-1.55, -13%] 5.62 0.02 1.86 36%	12.80 [+0.80, +7%] (10.41, 15.72) 12.63 [+0.64, +5%] 3.48 0.02 1.69 46%	12.76 [+0.76, +6%] (10.40, 15.69) 12.57 [+0.57, +5%] 3.39 0.02 1.68 47%	13.12 [+1.13, +9%] (10.47, 15.87) 13.12 [+1.12, +9%] 4.20 0.02 1.71 41%
Pertuzumab/ APHINITY/ IDFS/ Exponential	376.8 (339.1 - 414.5)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	376.79 [-0.05, -0%] (342.14, 416.07) 377.35 [+0.50, +0%] 540.90 0.23 23.26 90%	376.96 [+0.12, +0%] (353.14, 401.54) 377.14 [+0.30, +0%] 235.78 0.15 15.36 99%	372.62 [-4.22, -1%] (270.89, 429.60) 390.82 [+13.98, +4%] 2633.30 0.40 51.14 49%	393.44 [+16.59, +4%] (348.17, 480.34) 381.16 [+4.32, +1%] 1887.85 0.40 40.16 76%	377.71 [+0.87, +0%] (353.55, 402.34) 377.25 [+0.41, +0%] 269.75 0.16 16.40 98%	406.14 [+29.29, +8%] (328.39, 492.13) 402.62 [+25.78, +7%] 3772.47 0.54 53.99 43%
Pertuzumab/ APHINITY/ IDFS/ Weibull	338.7 (304.8 - 372.6)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	352.21 [+13.56, +4%] (278.35, 386.90) 365.48 [+26.82, +8%] 1414.93 0.36 35.09 51%	364.45 [+25.80, +8%] (300.54, 387.58) 372.75 [+34.09, +10%] 1479.74 0.29 28.54 44%	329.08 [-9.57, -3%] (238.15, 386.35) 349.29 [+10.63, +3%] 2572.97 0.51 49.82 43%	373.50 [+34.85, +10%] (300.45, 446.14) 377.75 [+39.09, +12%] 2832.90 0.40 40.23 35%	380.48 [+41.83, +12%] (351.40, 410.54) 381.01 [+42.35, +13%] 2162.99 0.20 20.33 29%	370.26 [+31.60, +9%] (295.05, 449.35) 369.59 [+30.93, +9%] 3643.35 0.51 51.43 39%
Pertuzumab/ APHINITY/ IDFS/ Generalised gamma	333.5 (300.2 - 366.9)	Mean (5%, 95%) Median MSE	346.95 [+13.42, +4%] (272.91, 381.53) 360.23 [+26.70, +8%] 1425.49	356.99 [+23.46, +7%] (282.54, 382.08) 367.72 [+34.19, +10%] 1516.87	323.27 [-10.27, -3%] (232.69, 380.72) 342.96 [+9.43, +3%] 2573.64	369.64 [+36.11, +11%] (296.86, 437.37) 376.42 [+42.89, +13%] 2795.74	380.29 [+46.76, +14%] (351.20, 409.83) 381.04 [+47.51, +14%] 2611.81	365.41 [+31.87, +10%] (291.14, 442.11) 367.36 [+33.83, +10%] 3555.14

		MCSE EmpSE % within 10%	0.36 35.29 49%	0.32 31.09 41%	0.51 49.68 41%	0.39 38.63 30%	0.21 20.62 17%	0.50 50.39 38%
Venetoclax/ MURANO/ OS/ Exponential	169.4 (152.5 - 186.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	170.46 [+1.05, +1%] (120.14, 193.89) 180.04 [+10.64, +6%] 564.02 0.24 23.73 44%	168.38 [-1.03, -1%] (144.38, 189.59) 168.97 [-0.43, -0%] 196.59 0.14 13.98 78%	170.46 [+1.05, +1%] (120.14, 193.89) 180.04 [+10.64, +6%] 564.02 0.24 23.73 44%	176.54 [+7.13, +4%] (149.59, 216.34) 172.59 [+3.19, +2%] 448.76 0.20 19.95 65%	171.62 [+2.21, +1%] (149.62, 197.95) 170.85 [+1.44, +1%] 219.26 0.15 14.64 77%	185.78 [+16.37, +10%] (147.57, 218.79) 189.34 [+19.93, +12%] 814.56 0.23 23.38 34%
Venetoclax/ MURANO/ OS/ Weibull	193.2 (173.9 - 212.5)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	191.62 [-1.60, -1%] (156.13, 219.64) 194.05 [+0.83, +0%] 425.28 0.21 20.56 58%	180.35 [-12.87, -7%] (150.23, 216.59) 177.27 [-15.95, -8%] 570.22 0.20 20.12 49%	198.52 [+5.30, +3%] (157.33, 219.82) 203.79 [+10.57, +5%] 401.01 0.19 19.31 63%	195.46 [+2.24, +1%] (167.57, 223.36) 195.24 [+2.02, +1%] 333.89 0.18 18.14 62%	188.29 [-4.93, -3%] (166.26, 220.18) 184.65 [-8.57, -4%] 312.77 0.17 16.98 63%	200.82 [+7.60, +4%] (168.93, 222.96) 203.98 [+10.76, +6%] 326.50 0.16 16.39 63%
Venetoclax/ MURANO/ OS/ Generalised gamma	190.3 (171.3- 209.3)	Mean (5%, 95%) Median MSE MCSE EmpSE % within 10%	190.06 [-0.21, -0%] (154.77, 216.58) 193.60 [+3.34, +2%] 395.26 0.20 19.88 60%	179.75 [-10.51, -6%] (150.55, 213.08) 177.13 [-13.13, -7%] 478.06 0.19 19.17 56%	197.49 [+7.22, +4%] (155.42, 217.34) 203.04 [+12.77, +7%] 422.88 0.19 19.25 58%	194.63 [+4.36, +2%] (165.58, 223.56) 194.98 [+4.72, +2%] 365.03 0.19 18.60 60%	186.84 [-3.42, -2%] (164.37, 219.97) 183.15 [-7.12, -4%] 311.57 0.17 17.32 66%	200.67 [+10.41, +5%] (167.11, 223.46) 203.84 [+13.58, +7%] 391.76 0.17 16.83 55%

AIC: Akaike information criterion; BIC: Bayes information criterion; EmpSE: empirical standard error; IDFS: invasive disease free survival; MCSE: Monte-Carlo standard error; MSE: mean squared error; OS: overall survival; PFS: progression free survival.

Shaded cells indicate model or model selection method with lowest MSE. Bold cells indicate model distribution matches source distribution.