TABLE 54 Numbers of admissions and events included in validation data sets: mortality at 6 months

Risk model	All patients	Eligible for model	Complete data
Number of admissions			
Hukkelhoven	2881	1744	1459
IMPACT Core	2881	2455	2281
IMPACT Extended	2881	2330	1994
IMPACT Lab	2881	1951	1724
Mortality at 6 months, n (%)			
Hukkelhoven	748 (26.0)	398 (22.8)	333 (22.8)
IMPACT Core	748 (26.0)	685 (27.9)	636 (27.9)
IMPACT Extended	748 (26.0)	648 (27.8)	559 (28.0)
IMPACT Lab	748 (26.0)	538 (27.6)	475 (27.6)

TABLE 55 Discrimination: mortality at 6 months

Risk model	All patients	Eligible for model	Complete data
c-index (95% CI)			
Hukkelhoven	0.782 (0.763 to 0.801)	0.771 (0.744 to 0.797)	0.793 (0.765 to 0.821)
IMPACT Core	0.755 (0.735 to 0.776)	0.752 (0.730 to 0.774)	0.756 (0.733 to 0.778)
IMPACT Extended	0.779 (0.760 to 0.798)	0.784 (0.764 to 0.805)	0.794 (0.772 to 0.816)
IMPACT Lab	0.773 (0.754 to 0.792)	0.790 (0.768 to 0.812)	0.798 (0.774 to 0.821)

TABLE 56 Calibration: mortality at 6 months

Risk model	All patients	Eligible for model	Complete data
Hosmer–Lemeshow test, chi-squared statistic [p-value]			
Hukkelhoven	15.7 [0.11]	16.6 [0.08]	21.0 [0.02]
IMPACT Core	101 [<0.001]	98 [<0.001]	102 [<0.001]
IMPACT Extended	52 [<0.001]	68 [<0.001]	62 [<0.001]
IMPACT Lab	7.3 [0.69]	14.0 [0.17]	13.5 [0.20]
Cox calibration regression, α (95% CI) β (95% CI) [p-value]			
Hukkelhoven	0.06 (–0.07 to 0.18) 1.04 (0.94 to 1.14) [0.64]	–0.06 (–0.23 to 0.11) 1.04 (0.91 to 1.17) [0.21]	–0.03 (–0.21 to 0.15) 1.18 (1.02 to 1.33) [0.003]
IMPACT Core	–0.46 (–0.56 to –0.36) 0.98 (0.89 to 1.08) [<0.001]	–0.47 (–0.57 to –0.37) 0.97 (0.87 to 1.08) [<0.001]	–0.49 (–0.59 to –0.38) 0.98 (0.88 to 1.09) [<0.001]
IMPACT Extended	–0.30 (–0.41 to –0.20) 1.03 (0.93 to 1.12) [<0.001]	–0.34 (–0.45 to –0.23) 1.07 (0.96 to 1.18) [<0.001]	–0.34 (–0.46 to –0.22) 1.12 (1.00 to 1.24) [<0.001]
IMPACT Lab	–0.01 (–0.13 to 1.07) 0.98 (0.88 to 1.07) [0.89]	–0.08 (–0.21 to 0.06) 1.05 (0.93 to 1.17) [0.10]	–0.04 (–0.19 to 0.10) 1.12 (0.99 to 1.25) [0.029]

TABLE 57 Overall fit: mortality at 6 months

Risk model	All patients	Eligible for model	Complete data
Brier's score			
Hukkelhoven	0.153	0.143	0.138
IMPACT Core	0.166	0.174	0.173
IMPACT Extended	0.156	0.161	0.159
IMPACT Lab	0.155	0.156	0.154

TABLE 58 Numbers of admissions and events included in validation data sets: unfavourable outcome at 6 months

Risk model	All patients	Eligible for model	Complete data
Number of admissions			
Hukkelhoven	2422	1447	1206
CRASH Basic	2422	2206	2050
CRASH CT	2422	2111	1940
IMPACT Core	2422	2060	1914
IMPACT Extended	2422	1959	1675
IMPACT Lab	2422	1639	1447
Unfavourable outcome at 6 months, n (%)			
Hukkelhoven	1481 (61.1)	868 (60.0)	730 (60.5)
CRASH Basic	1481 (61.1)	1340 (60.7)	1241 (60.5)
CRASH CT	1481 (61.1)	1278 (60.5)	1171 (60.4)
IMPACT Core	1481 (61.1)	1323 (64.2)	1228 (64.2)
IMPACT Extended	1481 (61.1)	1256 (64.1)	1077 (64.3)
IMPACT Lab	1481 (61.1)	1052 (64.2)	931 (64.3)

TABLE 59 Discrimination: unfavourable outcome at 6 months

Risk model	All patients	Eligible for model	Complete data
c-index (95% CI)			
Hukkelhoven	0.740 (0.721 to 0.760)	0.726 (0.700 to 0.752)	0.731 (0.703 to 0.759)
CRASH Basic	0.733 (0.712 to 0.753)	0.731 (0.710 to 0.752)	0.732 (0.710 to 0.754)
CRASH CT	0.739 (0.719 to 0.759)	0.745 (0.724 to 0.766)	0.745 (0.723 to 0.766)
IMPACT Core	0.731 (0.710 to 0.751)	0.725 (0.703 to 0.748)	0.726 (0.703 to 0.749)
IMPACT Extended	0.744 (0.724 to 0.763)	0.743 (0.721 to 0.765)	0.745 (0.721 to 0.769)
IMPACT Lab	0.749 (0.730 to 0.769)	0.753 (0.729 to 0.777)	0.753 (0.727 to 0.778)

TABLE 60 Calibration: unfavourable outcome at 6 months

Risk model	All patients	Eligible for model	Complete data
Hosmer–Lemeshow test, chi-squared statistic [p-value]			
Hukkelhoven	412 [<0.001]	248 [<0.001]	184 [<0.001]
CRASH Basic	996 [<0.001]	896 [<0.001]	795 [<0.001]
CRASH CT	400 [<0.001]	291 [<0.001]	254 [<0.001]
IMPACT Core	242 [<0.001]	220 [<0.001]	193 [<0.001]
IMPACT Extended	336 [<0.001]	239 [<0.001]	201 [<0.001]
IMPACT Lab	560 [<0.001]	320 [<0.001]	286 [<0.001]
Cox calibration regression, α (95% CI) β (95% CI) [p-value]			
Hukkelhoven	0.67 (0.57 to 0.76) 0.71 (0.57 to 0.76) [<0.001]	0.61 (0.49 to 0.73) 0.70 (0.60 to 0.80) [<0.001]	0.59 (0.46 to 0.73) 0.71 (0.46 to 0.73) [<0.001]
CRASH Basic	0.99 (0.88 to 1.10) 0.71 (0.63 to 0.78) [<0.001]	0.98 (0.86 to 1.10) 0.71 (0.63 to 0.79) [<0.001]	0.95 (0.83 to 1.08) 0.71 (0.62 to 0.79) [<0.001]
CRASH CT	0.59 (0.50 to 0.69) 0.65 (0.58 to 0.72) [<0.001]	0.55 (0.45 to 0.65) 0.68 (0.60 to 0.75) [<0.001]	0.52 (0.42 to 0.62) 0.67 (0.59 to 0.75) [<0.001]
IMPACT Core	0.61 (0.51 to 0.70) 0.82 (0.73 to 0.91) [<0.001]	0.63 (0.53 to 0.73) 0.80 (0.70 to 0.90) [<0.001]	0.61 (0.51 to 0.71) 0.80 (0.69 to 0.90) [<0.001]
IMPACT Extended	0.70 (0.60 to 0.79) 0.81 (0.72 to 0.90) [<0.001]	0.69 (0.59 to 0.80) 0.81 (0.71 to 0.90) [<0.001]	0.68 (0.57 to 0.79) 0.81 (0.70 to 0.91) [<0.001]
IMPACT Lab	0.87 (0.77 to 0.98) 0.79 (0.71 to 0.87) [<0.001]	0.84 (0.72 to 0.96) 0.79 (0.69 to 0.89) [<0.001]	0.84 (0.71 to 0.97) 0.79 (0.68 to 0.90) [<0.001]

TABLE 61 Overall fit: unfavourable at 6 months

Risk model	All patients	Eligible for model	Complete data
Brier's score			
Hukkelhoven	0.222	0.228	0.223
CRASH Basic	0.258	0.258	0.255
CRASH CT	0.222	0.217	0.216
IMPACT Core	0.220	0.217	0.216
IMPACT Extended	0.221	0.215	0.213
IMPACT Lab	0.234	0.222	0.222