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## Distributions around each parameter in the PSA

	Mean /Alpha	Standard Error /Beta	Distributio n	Source
Clinical	/Alpha		,	
TARN survival model - 2006				
Age 0 to 5	0.328	0.238976	Normal	Bouamra et al 2006.(1)
Age 6 to 10	0.594	0.22261	Normal	Bouamra et al 2006.(1)
Age 11 to 15	0.582	0.167769	Normal	Bouamra et al 2006.(1)
Age 45 to 54	-0.335	0.116522	Normal	Bouamra et al 2006.(1)
Age 55 to 64	-0.972	0.119901	Normal	Bouamra et al 2006.(1)
Age 65 to 75	-1.925	0.103437	Normal	Bouamra et al 2006.(1)
Age over 75	-3.167	0.130315	Normal	Bouamra et al 2006.(1)
GCS 9 to 12	-1.089	0.097289	Normal	Bouamra et al 2006.(1)
GCS 6 to 8	-1.533	0.108391	Normal	Bouamra et al 2006.(1)
GCS 4 to 5	-2.689	0.119901	Normal	Bouamra et al 2006.(1)
GCS 3	-3.513	0.103437	Normal	Bouamra et al 2006.(1)
GCS intubated	0		Fixed	Bouamra et al 2006.(1).
Square root of (10 / ISS) – 0.953	-5.46	0.319588	Normal	Bouamra et al 2006.(1)
Natural logarithm (ISS/10) – 0.0968	-4.557	0.142762	Normal	Bouamra et al 2006.(1).
Female	-0.213	0.699839	Normal	Bouamra et al 2006.(1)
Female & age 0 to 5	0.21	0.394889	Normal	Bouamra et al 2006.(1)
Female & age 6 to 10	0.008	0.44676	Normal	Bouamra et al 2006.(1)
Female & age 11 to 15	0.143	0.307142	Normal	Bouamra et al 2006.(1).
Female & age 45 to 54	0.018	0.221073	Normal	Bouamra et al 2006.(1)
Female & age 55 to 64	0.521	0.221773	Normal	Bouamra et al 2006.(1)
Female & age 65 to 75	0.623	0.187478	Normal	Bouamra et al 2006.(1).
Female & age over 75	0.56	0.144961	Normal	Bouamra et al 2006.(1).

Constant	5.294		Fixed	Bouamra et al 2006.(1)
TARN survival model - 2015				====:(=)
Square root of (10/ISS) – 0.8686	-2.79052	0.142762	Normal	Bouamra et al. 2015.(2)
Natural logarithm of (ISS/10) – 0.2817	-2.57574	0.073486	Normal	Bouamra et al. 2015.(2)
GCS =3	-3.79637	0.051078	Normal	Bouamra et al. 2015.(2)
GCS 4 to 5	-2.73865	0.076236	Normal	Bouamra et al. 2015.(2)
GCS 6 to 8	-1.87664	0.060018	Normal	Bouamra et al. 2015.(2)
GCS 9 to 12	-1.29443	0.05166	Normal	Bouamra et al. 2015.(2)
GCS 13 to 14	-0.46062	0.038295	Normal	Bouamra et al. 2015.(2)
GCS intubated	-2.62397	0.100996	Normal	Bouamra et al. 2015.(2)
CCI unknown	-0.449	0.038455	Normal	Bouamra et al. 2015.(2)
CCI 1to 5	-0.49572	0.034608	Normal	Bouamra et al. 2015.(2)
CCI 6 to 10	-0.96308	0.04811	Normal	Bouamra et al. 2015.(2)
CCI over 10	-1.59703	0.062588	Normal	Bouamra et al. 2015.(2)
Age 0 to 5	-0.00483	0.164738	Normal	Bouamra et al. 2015.(2)
Age 6 to 10	0.25323	0.232061	Normal	Bouamra et al. 2015.(2)
Age 11 to 15	-0.08435	0.151872	Normal	Bouamra et al. 2015.(2)
Age 45 to 54	-0.41388	0.067219	Normal	Bouamra et al. 2015.(2)
Age 55 to 64	-0.93229	0.066243	Normal	Bouamra et al. 2015.(2)
Age 65 to 74	-1.58082	0.064409	Normal	Bouamra et al. 2015.(2)
Age over 75	-2.6752	0.053201	Normal	Bouamra et al. 2015.(2)
Female	-0.17252	0.078806	Normal	Bouamra et al. 2015.(2)
Female & Age 0 to 5	-0.13805	0.251346	Normal	Bouamra et al. 2015.(2)
Female & Age 6 to 10	0.43973	0.442748	Normal	Bouamra et al. 2015.(2)
Female & Age 11 to 15	0.21675	0.295405	Normal	Bouamra et al. 2015.(2)

			1	
Female & Age 45 to 54	-0.06972	0.133246	Normal	Bouamra et al. 2015.(2)
Female & Age 55 to 64	0.17164	0.121855	Normal	Bouamra et al. 2015.(2)
Female & age 65 to 74	0.25829	0.112944	Normal	Bouamra et al. 2015.(2)
Female & age over 75	0.3477	0.087463	Normal	Bouamra et al. 2015.(2)
Constant	5.28621		Fixed	Bouamra et al. 2015.(2)
Probability that someone with an ISS of 16 or more went to an MTC in the UK	31865	9438.102	Beta	Moran, C.G., et al, 2018. (3)
Relative risk of death in hospital for patients with an ISS of over 15 in a local hospital compared to an MTC	0.2231	0.1138	Log Normal	Newgard et al 2016(4) Newgard et al. 2013.
Probability of patients having a transfer from a local hospital to an MTC if they were a true positive	90	248	Beta	Newgard et al. 2016.(4)
Probability of patients having a transfer from a local hospital to an MTC if they were a false negative	110	228	Beta	Newgard et al. 2016.(4)
Probability of patients having a transfer from a local hospital to an MTC if they were a true negative	393	4918	Beta	Newgard et al. 2016.(4)
Probability of patients having a transfer from a local hospital to an MTC if they were a false negative	228	5083	Beta	Newgard et al. 2016.(4)
Probability of death between discharge and one year post injury for patients with an ISS 16 or over who received MTC care	138	4470	Beta	Mackenzie et al. 2006.(5)
Relative Risk of death for people with an ISS 16 or over who received local hospital care (compared to MTC care)	0.4947	0.2131	Log Normal	Mackenzie et al. 2006.(5)
Probability of death between discharge and one-year post injury for patients with an ISS under 16	1256	72614	Beta	Davidson et al. 2011(6) JAMA
Hazard Ratio of death, more than one year post injury for patients who had an ISS of over 15	1.6467	0.1406	Log Normal	Newgard et al 2016(4) Cameron et al. 2006(7)

	1	1		T
compared to the general				
population				
Hazard Ratio of death, more than	0.3221	0.1204	Log Normal	Newgard et al
one year post injury for patients				2016(4)
who had an ISS of 15 or under				Cameron et al.
compared to the general				2006(7)
population				
Utilities	<u> </u>			<u> </u>
Utility for patients with an ISS of	60.62	26.6	Beta	Ahmed et al.(8)
16 or more				
Utility for patients with an ISS of	60.62	26.6	Beta	Ahmed et al.(8)
15 or less				
General population utility	0.9508566	-	Fixed	Ara et al. 2010.(9)
formula: constant				
General population utility	0.0212126	-	Fixed	Ara et al. 2010.(9)
formula: male = 1, 0 = female				
General population utility	-0.0002587	-	Fixed	Ara et al. 2010.(9)
formula: age				
General population utility	-0.0000332	-	Fixed	Ara et al. 2010.(9)
formula: age^2				
Costs	•	•		
Cost of MTC care if a patient has	1466		Fixed	NHS
an ISS between 9 and 15				improvement.(10)
Cost of MTC care if a patient has	2819		Fixed	NHS
an ISS over 16				improvement.(10)
Cost of blunt trauma, if a	14679.39	0.42	Gamma	Christensen et al
patient's ISS is 9 or less				2008. (11)
Cost of blunt trauma, if a	3141.14	2.86	Gamma	Christensen et al
patient's ISS is between 10 and 16				2008. (11)
Cost of blunt trauma, if a	2641.31	5.38	Gamma	Christensen et al
patient's ISS is between 17 and 25				2008. (11)
Cost of blunt trauma, if a	2948.91	7.18	Gamma	Christensen et al
patient's ISS is 26 or more				2008. (11)
Cost of penetrating trauma if a	43.90	148.08	Gamma	Christensen et al
patient's ISS is 8 or less				2008.(12)
Cost of penetrating trauma if a	116.47	51.81	Gamma	Christensen et al
patient's ISS is between 9 and 15				2008.(12)
Cost of penetrating trauma if a	45.03	209.93	Gamma	Christensen et al
patient's ISS is between 16 and 24				2008.(12)
Cost of penetrating trauma if a	23.14	533.64	Gamma	Christensen et al
patient's ISS is between 25 and 34				2008.(12)
Cost of penetrating trauma if a	7.08	2322.05	Gamma	Christensen et al
patient's ISS is 35 or more				2008.(12)
Cost of major trauma between	1740.76	1.01	Gamma	Personal
discharge and 6 months post-				Communication
discharge				John Nichol
Cost of additional ambulance	577.14	0.44	Gamma	NHS
journeys				improvement.(13)

Relative increase in lifetime	1.65	0.14	Log Normal	Currency Code ASS02. Standard error assumed to be 4.2% of mean, based on analysis of the same currency code in the 2016/17 reference costs. Cameron et al.
health care costs for people with an ISS of 16 or more			10 1	2006(14)
Relative increase in lifetime health care costs for people with an ISS of 15 or less	0.32	0.12	Log Normal	Cameron et al. 2006(14)

### Details of how to generate the simulated population

Random samples were taken from a multivariate normal distribution. The means and the covariance matrix required to generate the simulated population are given in Table X1.1

Table X1.1: The means and covariance matrix required to populate a multivariate normal distribution

Characteristic	Mean	an Covariance matrix				
		Age	Percentage	ISS	GCS	Percentage with
			Male			blunt trauma
Age	46.77	455.69	-1.12	18.78	-0.84	0.06
Percentage Male	0.58	-1.12	0.24	0.25	-0.04	0.00
ISS	5.17	18.78	0.25	51.98	-5.80	-0.07
GCS	14.42	-0.84	-0.04	-5.80	3.64	0.01
Percentage with blunt	0.98	0.06	0.00	-0.07	0.01	0.02
trauma						
SD, standard deviation; ISS, injury severity score; GCS, Glasgow coma score						

Samples for the each variable was compared to the following lookup tables. The lookup tables were generated by sorting each variable into a numerically ascending order. The cumulative percentage that each category and preceding categories had out of the sample size was calculated. We then calculated sampling cut-offs, which are the values from a normal distribution defined by percentile = the cumulative percentage, mean = mean value of the variable in Table X1.1 and SD = Variance of variable^0.5 (i.e. for age this would be square root of the cell in covariance matrix in Table X1.1 corresponding to the row and column for Age). The sampled values were then compared sequentially to each sampling cutoff, the simulated value for the variable corresponded to the last category in which the sampled value was less than the sampling cut-off. For example, if a sampled value of 25.5 was drawn for a patient's age, then they were assigned an age of 22, as 22.5 is less than 25.88 (cut-off for age 22) but more than 23.68 (cut-off for age 21).

Table X1.2: Lookup table for age

Age	n	cumulative percentage	sampling cut-offs
16	79	0.016737288	1.374472
17	106	0.039194915	9.192516
18	127	0.066101695	14.6282
19	117	0.090889831	18.26089
20	105	0.113135593	20.93512
21	126	0.139830508	23.68757
22	114	0.163983051	25.88335
23	103	0.185805085	27.69266
24	91	0.205084746	29.18408
25	91	0.224364407	30.59424
26	86	0.242584746	31.86488
27	83	0.260169492	33.043
28	53	0.271398305	33.77378
29	72	0.286652542	34.7429
30	74	0.302330508	35.71378
31	63	0.315677966	36.52262

32         62         0.328813559         37.3045           33         59         0.341313559         38.03693           34         52         0.352330508         38.67402           35         48         0.3625         39.25576           36         62         0.375635593         39.99908           37         66         0.389618644         40.78145           38         54         0.401059322         41.4156           39         52         0.412076271         42.02183           40         63         0.425423729         42.75125           41         86         0.443644068         43.73962           42         74         0.459322034         44.58485           43         77         0.475635593         45.46074           44         77         0.491949153         46.33444           45         72         0.50720339         47.15072           46         64         0.520762712         47.87674           47         60         0.533474576         48.55854           48         70         0.5625         50.12334           50         69         0.577118644         50.91781      <				
34         52         0.352330508         38.67402           35         48         0.3625         39.25576           36         62         0.375635593         39.99908           37         66         0.389618644         40.78145           38         54         0.401059322         41.4156           39         52         0.412076271         42.02183           40         63         0.425423729         42.75125           41         86         0.443644068         43.73962           42         74         0.459322034         44.58485           43         77         0.475635593         45.46074           44         77         0.491949153         46.33444           45         72         0.50720339         47.15072           46         64         0.520762712         47.87674           47         60         0.53474576         48.55854           48         70         0.548305085         49.35634           49         67         0.5625         50.12334           50         69         0.577118644         50.91781           51         76         0.5932203         55.347186 <t< td=""><td>32</td><td>62</td><td>0.328813559</td><td>37.3045</td></t<>	32	62	0.328813559	37.3045
35         48         0.3625         39.25576           36         62         0.375635593         39.99908           37         66         0.389618644         40.78145           38         54         0.401059322         41.4156           39         52         0.412076271         42.02183           40         63         0.425423729         42.75125           41         86         0.443644068         43.73962           42         74         0.459322034         44.58485           43         77         0.475635593         45.46074           44         77         0.491949153         46.33444           45         72         0.50720339         47.15072           46         64         0.520762712         47.87674           47         60         0.533474576         48.55854           49         67         0.5625         50.12334           50         69         0.577118644         50.91781           51         76         0.59322039         51.79963           52         69         0.607838983         52.6077           53         73         0.623305085         53.47186 <t< td=""><td>33</td><td>59</td><td>0.341313559</td><td>38.03693</td></t<>	33	59	0.341313559	38.03693
36         62         0.375635593         39.99908           37         66         0.389618644         40.78145           38         54         0.401059322         41.4156           39         52         0.412076271         42.02183           40         63         0.425423729         42.75125           41         86         0.436344068         43.73962           42         74         0.459322034         44.58485           43         77         0.491949153         46.3444           44         77         0.491949153         46.33444           45         72         0.5070339         47.15072           46         64         0.520762712         47.87674           47         60         0.533474576         48.55854           48         70         0.548305085         49.35634           49         67         0.5625         50.12334           50         69         0.577118644         50.91781           51         76         0.59322033         51.79963           52         69         0.607838983         52.6077           53         73         0.623305085         53.47186	34	52	0.352330508	38.67402
37         66         0.389618644         40.78145           38         54         0.401059322         41.4156           39         52         0.412076271         42.02183           40         63         0.425423729         42.75125           41         86         0.443644068         43.73962           42         74         0.459322034         44.58485           43         77         0.475635593         45.46074           44         77         0.491949153         46.33444           45         72         0.50720339         47.15072           46         64         0.520762712         47.87674           47         60         0.533474576         48.55854           48         70         0.548305085         49.35634           49         67         0.5625         50.12334           50         69         0.577118644         50.91781           51         76         0.593220339         51.79963           52         69         0.60783893         52.6077           53         73         0.623305085         53.47186           54         72         0.638559322         54.33508	35	48	0.3625	39.25576
38         54         0.401059322         41.4156           39         52         0.412076271         42.02183           40         63         0.425423729         42.75125           41         86         0.443644068         43.73962           42         74         0.459322034         44.58485           43         77         0.491949153         46.3444           44         77         0.491949153         46.33444           45         72         0.50720339         47.15072           46         64         0.520762712         47.87674           47         60         0.533474576         48.55854           48         70         0.548305085         49.35634           49         67         0.5625         50.12334           50         69         0.577118644         50.91781           51         76         0.593220339         51.79963           52         69         0.607838983         52.6077           53         73         0.623305085         53.47186           54         72         0.638559322         54.33508           55         82         0.659915254         56.15102	36	62	0.375635593	39.99908
39         52         0.412076271         42.02183           40         63         0.425423729         42.75125           41         86         0.443644068         43.73962           42         74         0.459322034         44.58485           43         77         0.475635593         45.46074           44         77         0.491949153         46.33444           45         72         0.50720339         47.15072           46         64         0.520762712         47.87674           47         60         0.533474576         48.55854           48         70         0.548305085         49.35634           49         67         0.5625         50.12334           50         69         0.577118644         50.91781           51         76         0.59322033         51.79963           52         69         0.607838983         52.6077           53         73         0.623305085         53.47186           54         72         0.638559322         54.33508           55         82         0.655932203         55.3336           56         66         6.66915254         56.15102	37	66	0.389618644	40.78145
40         63         0.425423729         42.75125           41         86         0.443644068         43.73962           42         74         0.459322034         44.58485           43         77         0.475635593         45.46074           44         77         0.491949153         46.33444           45         72         0.50720339         47.15072           46         64         0.520762712         47.87674           47         60         0.533474576         48.55854           48         70         0.548305085         49.35634           49         67         0.5625         50.12334           50         69         0.577118644         50.91781           51         76         0.593220339         51.79963           52         69         0.607838983         52.6077           53         73         0.623305085         53.47186           54         72         0.638559322         54.33508           55         82         0.655932203         55.3336           56         66         0.669915254         56.15102           57         54         0.681355932         58.35169	38	54	0.401059322	41.4156
41       86       0.443644068       43.73962         42       74       0.459322034       44.58485         43       77       0.475635593       45.46074         44       77       0.491949153       46.33444         45       72       0.50720339       47.15072         46       64       0.520762712       47.87674         47       60       0.533474576       48.55854         48       70       0.548305085       49.35634         49       67       0.5625       50.12334         50       69       0.577118644       50.91781         51       76       0.59322039       51.79963         52       69       0.607838983       52.6077         53       73       0.623305085       53.47186         54       72       0.638559322       54.33508         55       82       0.655932203       55.3336         56       66       0.669915254       56.15102         57       54       0.681355932       56.83017         58       62       0.694491525       57.62275         59       56       0.706355932       58.35169         60	39	52	0.412076271	42.02183
42         74         0.459322034         44.58485           43         77         0.475635593         45.46074           44         77         0.491949153         46.33444           45         72         0.50720339         47.15072           46         64         0.520762712         47.87674           47         60         0.533474576         48.55854           48         70         0.548305085         49.35634           49         67         0.5625         50.12334           50         69         0.577118644         50.91781           51         76         0.593220339         51.79963           52         69         0.607838983         52.6077           53         73         0.623305085         53.47186           54         72         0.638559322         54.33508           55         82         0.655932203         55.3336           56         66         0.669915254         56.15102           57         54         0.681355932         56.83017           58         62         0.694491525         57.62275           59         56         0.70635934         58.35169	40	63	0.425423729	42.75125
43         77         0.475635593         45.46074           44         77         0.491949153         46.33444           45         72         0.50720339         47.15072           46         64         0.520762712         47.87674           47         60         0.533474576         48.55854           48         70         0.548305085         49.35634           49         67         0.5625         50.12334           50         69         0.577118644         50.91781           51         76         0.593220339         51.79963           52         69         0.607838983         52.6077           53         73         0.623305085         53.47186           54         72         0.638559322         54.33508           55         82         0.655932203         55.3336           56         66         0.66915254         56.15102           57         54         0.681355932         56.83017           58         62         0.694491525         57.62275           59         56         0.706355932         58.35169           60         67         0.720550847         59.24204	41	86	0.443644068	43.73962
44       77       0.491949153       46.33444         45       72       0.50720339       47.15072         46       64       0.520762712       47.87674         47       60       0.533474576       48.55854         48       70       0.548305085       49.35634         49       67       0.5625       50.12334         50       69       0.577118644       50.91781         51       76       0.593220339       51.79963         52       69       0.607838983       52.6077         53       73       0.623305085       53.47186         54       72       0.638559322       54.33508         55       82       0.655932203       55.3336         56       66       0.669915254       56.15102         57       54       0.681355932       56.83017         58       62       0.694491525       57.62275         59       56       0.706355932       58.35169         60       67       0.720550847       59.24204         61       58       0.732838983       60.93686         62       67       0.747033898       60.96486         63	42	74	0.459322034	44.58485
45         72         0.50720339         47.15072           46         64         0.520762712         47.87674           47         60         0.533474576         48.55854           48         70         0.548305085         49.35634           49         67         0.5625         50.12334           50         69         0.577118644         50.91781           51         76         0.593220339         51.79963           52         69         0.607838983         52.6077           53         73         0.623305085         53.47186           54         72         0.638559322         54.33508           55         82         0.655932203         55.3336           56         66         0.669915254         56.15102           57         54         0.681355932         56.83017           58         62         0.694491525         57.62275           59         56         0.706355932         58.35169           60         67         0.720550847         59.24204           61         58         0.732838983         60.03066           62         67         0.747033898         60.96486	43	77	0.475635593	45.46074
46         64         0.520762712         47.87674           47         60         0.533474576         48.55854           48         70         0.548305085         49.35634           49         67         0.5625         50.12334           50         69         0.577118644         50.91781           51         76         0.593220339         51.79963           52         69         0.607838983         52.6077           53         73         0.623305085         53.47186           54         72         0.638559322         54.33508           55         82         0.655932203         55.3336           56         66         0.669915254         56.15102           57         54         0.681355932         56.83017           58         62         0.694491525         57.62275           59         56         0.706355932         58.35169           60         67         0.720550847         59.24204           61         58         0.732838983         60.96486           63         53         0.758262712         61.72354           64         47         0.768220339         62.41247	44	77	0.491949153	46.33444
47         60         0.533474576         48.55854           48         70         0.548305085         49.35634           49         67         0.5625         50.12334           50         69         0.577118644         50.91781           51         76         0.593220339         51.79963           52         69         0.607838983         52.6077           53         73         0.623305085         53.47186           54         72         0.638559322         54.33508           55         82         0.655932203         55.3336           56         66         0.669915254         56.15102           57         54         0.681355932         56.83017           58         62         0.694491525         57.62275           59         56         0.706355932         58.35169           60         67         0.720550847         59.24204           61         58         0.732838983         60.03066           62         67         0.747033898         60.96486           63         53         0.758262712         61.72354           64         47         0.768220339         62.41247	45	72	0.50720339	47.15072
48         70         0.548305085         49.35634           49         67         0.5625         50.12334           50         69         0.577118644         50.91781           51         76         0.593220339         51.79963           52         69         0.607838983         52.6077           53         73         0.623305085         53.47186           54         72         0.638559322         54.33508           55         82         0.655932203         55.3336           56         66         0.669915254         56.15102           57         54         0.681355932         56.83017           58         62         0.694491525         57.62275           59         56         0.706355932         58.35169           60         67         0.720550847         59.24204           61         58         0.732838983         60.03066           62         67         0.747033898         60.96486           63         53         0.758262712         61.72354           64         47         0.768220339         62.41247           65         54         0.779661017         63.22473	46	64	0.520762712	47.87674
49         67         0.5625         50.12334           50         69         0.577118644         50.91781           51         76         0.593220339         51.79963           52         69         0.607838983         52.6077           53         73         0.623305085         53.47186           54         72         0.638559322         54.33508           55         82         0.655932203         55.3336           56         66         0.669915254         56.15102           57         54         0.681355932         56.83017           58         62         0.694491525         57.62275           59         56         0.706355932         58.35169           60         67         0.720550847         59.24204           61         58         0.732838983         60.03066           62         67         0.747033898         60.96486           63         53         0.758262712         61.72354           64         47         0.768220339         62.41247           65         54         0.779661017         63.22473           66         49         0.790042373         63.98296	47	60	0.533474576	48.55854
50         69         0.577118644         50.91781           51         76         0.593220339         51.79963           52         69         0.607838983         52.6077           53         73         0.623305085         53.47186           54         72         0.638559322         54.33508           55         82         0.655932203         55.3336           56         66         0.669915254         56.15102           57         54         0.681355932         56.83017           58         62         0.694491525         57.62275           59         56         0.706355932         58.35169           60         67         0.720550847         59.24204           61         58         0.732838983         60.03066           62         67         0.747033898         60.96486           63         53         0.758262712         61.72354           64         47         0.768220339         62.41247           65         54         0.779061017         63.22473           66         49         0.790042373         63.98296           67         51         0.80847458         64.79593     <	48	70	0.548305085	49.35634
51       76       0.593220339       51.79963         52       69       0.607838983       52.6077         53       73       0.623305085       53.47186         54       72       0.638559322       54.33508         55       82       0.655932203       55.3336         56       66       0.669915254       56.15102         57       54       0.681355932       56.83017         58       62       0.694491525       57.62275         59       56       0.706355932       58.35169         60       67       0.720550847       59.24204         61       58       0.732838983       60.93066         62       67       0.747033898       60.96486         63       53       0.758262712       61.72354         64       47       0.768220339       62.41247         65       54       0.779661017       63.22473         66       49       0.790042373       63.98296         67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70<	49	67	0.5625	50.12334
52       69       0.607838983       52.6077         53       73       0.623305085       53.47186         54       72       0.638559322       54.33508         55       82       0.655932203       55.3336         56       66       0.669915254       56.15102         57       54       0.681355932       56.83017         58       62       0.694491525       57.62275         59       56       0.706355932       58.35169         60       67       0.720550847       59.24204         61       58       0.732838983       60.03066         62       67       0.747033898       60.96486         63       53       0.758262712       61.72354         64       47       0.768220339       62.41247         65       54       0.779661017       63.22473         66       49       0.790042373       63.98296         67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71<	50	69	0.577118644	50.91781
53       73       0.623305085       53.47186         54       72       0.638559322       54.33508         55       82       0.655932203       55.3336         56       66       0.669915254       56.15102         57       54       0.681355932       56.83017         58       62       0.694491525       57.62275         59       56       0.706355932       58.35169         60       67       0.720550847       59.24204         61       58       0.732838983       60.03066         62       67       0.747033898       60.96486         63       53       0.758262712       61.72354         64       47       0.768220339       62.41247         65       54       0.779661017       63.22473         66       49       0.790042373       63.98296         67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72	51	76	0.593220339	51.79963
54         72         0.638559322         54.33508           55         82         0.655932203         55.3336           56         66         0.669915254         56.15102           57         54         0.681355932         56.83017           58         62         0.694491525         57.62275           59         56         0.706355932         58.35169           60         67         0.720550847         59.24204           61         58         0.732838983         60.03066           62         67         0.747033898         60.96486           63         53         0.758262712         61.72354           64         47         0.768220339         62.41247           65         54         0.779661017         63.22473           66         49         0.790042373         63.98296           67         51         0.800847458         64.79593           68         52         0.811864407         65.65269           69         50         0.822457627         66.50622           70         41         0.842584746         68.22179           72         47         0.852542373         69.12395	52	69	0.607838983	52.6077
55         82         0.655932203         55.3336           56         66         0.669915254         56.15102           57         54         0.681355932         56.83017           58         62         0.694491525         57.62275           59         56         0.706355932         58.35169           60         67         0.720550847         59.24204           61         58         0.732838983         60.03066           62         67         0.747033898         60.96486           63         53         0.758262712         61.72354           64         47         0.768220339         62.41247           65         54         0.779661017         63.22473           66         49         0.790042373         63.98296           67         51         0.800847458         64.79593           68         52         0.811864407         65.65269           69         50         0.822457627         66.50622           70         41         0.831144068         67.23041           71         54         0.842584746         68.22179           72         47         0.852542373         69.12395	53	73	0.623305085	53.47186
56       66       0.669915254       56.15102         57       54       0.681355932       56.83017         58       62       0.694491525       57.62275         59       56       0.706355932       58.35169         60       67       0.720550847       59.24204         61       58       0.732838983       60.03066         62       67       0.747033898       60.96486         63       53       0.758262712       61.72354         64       47       0.768220339       62.41247         65       54       0.779661017       63.22473         66       49       0.790042373       63.98296         67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	54	72	0.638559322	54.33508
57       54       0.681355932       56.83017         58       62       0.694491525       57.62275         59       56       0.706355932       58.35169         60       67       0.720550847       59.24204         61       58       0.732838983       60.03066         62       67       0.747033898       60.96486         63       53       0.758262712       61.72354         64       47       0.768220339       62.41247         65       54       0.779661017       63.22473         66       49       0.790042373       63.98296         67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	55	82	0.655932203	55.3336
58       62       0.694491525       57.62275         59       56       0.706355932       58.35169         60       67       0.720550847       59.24204         61       58       0.732838983       60.03066         62       67       0.747033898       60.96486         63       53       0.758262712       61.72354         64       47       0.768220339       62.41247         65       54       0.779661017       63.22473         66       49       0.790042373       63.98296         67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	56	66	0.669915254	56.15102
59       56       0.706355932       58.35169         60       67       0.720550847       59.24204         61       58       0.732838983       60.03066         62       67       0.747033898       60.96486         63       53       0.758262712       61.72354         64       47       0.768220339       62.41247         65       54       0.779661017       63.22473         66       49       0.790042373       63.98296         67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	57	54	0.681355932	56.83017
60       67       0.720550847       59.24204         61       58       0.732838983       60.03066         62       67       0.747033898       60.96486         63       53       0.758262712       61.72354         64       47       0.768220339       62.41247         65       54       0.779661017       63.22473         66       49       0.790042373       63.98296         67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	58	62	0.694491525	57.62275
61       58       0.732838983       60.03066         62       67       0.747033898       60.96486         63       53       0.758262712       61.72354         64       47       0.768220339       62.41247         65       54       0.779661017       63.22473         66       49       0.790042373       63.98296         67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	59	56	0.706355932	58.35169
62       67       0.747033898       60.96486         63       53       0.758262712       61.72354         64       47       0.768220339       62.41247         65       54       0.779661017       63.22473         66       49       0.790042373       63.98296         67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	60	67	0.720550847	59.24204
63       53       0.758262712       61.72354         64       47       0.768220339       62.41247         65       54       0.779661017       63.22473         66       49       0.790042373       63.98296         67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	61	58	0.732838983	60.03066
64       47       0.768220339       62.41247         65       54       0.779661017       63.22473         66       49       0.790042373       63.98296         67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	62	67	0.747033898	60.96486
65       54       0.779661017       63.22473         66       49       0.790042373       63.98296         67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	63	53	0.758262712	61.72354
66       49       0.790042373       63.98296         67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	64	47	0.768220339	62.41247
67       51       0.800847458       64.79593         68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	65	54	0.779661017	63.22473
68       52       0.811864407       65.65269         69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	66	49		63.98296
69       50       0.822457627       66.50622         70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	67	51	0.800847458	64.79593
70       41       0.831144068       67.23041         71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	68	52	0.811864407	65.65269
71       54       0.842584746       68.22179         72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	69	50	0.822457627	66.50622
72       47       0.852542373       69.12395         73       43       0.861652542       69.98581         74       39       0.869915254       70.80162	70	41	0.831144068	67.23041
73     43     0.861652542     69.98581       74     39     0.869915254     70.80162	71	54	0.842584746	68.22179
74 39 0.869915254 70.80162	72	47	0.852542373	69.12395
	73	43	0.861652542	69.98581
75   46   0.879661017   71.8114	74	39	0.869915254	70.80162
	75	46	0.879661017	71.8114

76	41	0.888347458	72.76118	
77	41	0.897033898	73.76541	
78	35	0.904449153	74.67258	
79	41	0.913135593	75.80381	
80	30	0.919491525	76.68628	
81	43	0.928601695	78.04813	
82	36	0.936228814	79.29499	
83	37	0.944067797	80.70396	
84	31	0.950635593	82.00994	
85	22	0.95529661	83.02365	
86	39	0.963559322	85.05241	
87	23	0.968432203	86.43275	
88	35	0.975847458	88.91836	
89	15	0.979025424	90.18529	
90	21	0.983474576	92.26534	
91	12	0.986016949	93.68056	
92	17	0.989618644	96.125	
93	13	0.992372881	98.55885	
94	8	0.994067797	100.4772	
95	14	0.997033898	105.5013	
96.5*	7	0.998516949	110.1917	
99*	7	1	Inf	
* - more than one age band for identifiability reasons, as at least one category had n < 5.				

Table X1.3: The lookup table for Male gender

Male = 1, Female = 0	n	cumulative percentage	sampling cut-offs
0	1969	0.417161	0.479693
1	2751	1	Inf

Table X1.4: The lookup table for ISS

ISS	n	cumulative percentage	sampling cut-offs
0	302	0.063983	-5.80918
1	1761	0.437076	4.023145
2	619	0.56822	6.403973
3	81	0.585381	6.720004
4	493	0.689831	8.736452
5	226	0.737712	9.75255
6	68	0.752119	10.07601
8	38	0.760169	10.26112
9	378	0.840254	12.3422
10	183	0.879025	13.60118
11	39	0.887288	13.90472
12	12	0.889831	14.0013

13	39	0.898093	14.3267
14	53	0.909322	14.80131
16	50	0.919915	15.29091
17	73	0.935381	16.10282
18	19	0.939407	16.33854
19	14	0.942373	16.5202
20	33	0.949364	16.97954
21	36	0.956992	17.5424
22	22	0.961653	17.9274
24	12	0.964195	18.15374
25	27	0.969915	18.71581
26	23	0.974788	19.26952
27	11	0.977119	19.56672
29	29	0.983263	20.4951
30	6	0.984534	20.72291
32	8	0.986229	21.05311
33	6	0.9875	21.32462
34.5*	19	0.991525	22.38014
37*	8	0.99322	22.96356
41.5*	9	0.995127	23.7998
43	5	0.996186	24.40125
45	10	0.998305	26.28897
51.67*	8	1	Inf
*	100		C-1

 $<sup>^{*}</sup>$  - more than one ISS category has been combined, as at least one of the merged categories had n < 5

Table X1.5: The lookup table for GCS

GCS	n	cumulative percentage	sampling cut-offs
3	65	0.013771	10.21646
4	10	0.01589	10.32435
5	7	0.017373	10.39275
6	21	0.021822	10.57168
7	24	0.026907	10.74172
8	14	0.029873	10.82882
9	20	0.03411	10.94157
10	32	0.04089	11.10006
11	33	0.047881	11.24253
12	58	0.060169	11.4569
13	139	0.089619	11.85788
14	437	0.182203	12.68964
15	3860	1	Inf

Table X1.6: The lookup table for blunt trauma

Blunt trauma = 1, penetrating trauma = 0	n	cumulative percentage	sampling cut-offs
0	83	0.017585	0.705528
1	4637	1	Inf

### Derivation of the formula to determine QALYs in the model

This section details how the formula used in our model to determine undiscounted and discounted quality adjusted life years (QALYs) was derived.

**Undiscounted QALYs** 

For each patient, their age-adjusted utility at any given point in time would be given by the following formula

1) Util now =  $\beta 1 + \beta 2*(1=Male, 0 = otherwise) + \beta 3*age + \beta 4*age^2$ 

For any given individual patient, this is equivalent to:

2) Util now =  $\beta$ 1 +  $\beta$ 3\*age +  $\beta$ 4\*age^2

As patient's gender does not change in our model

Currently age can be expressed as

3) Age = age at baseline + time spent in the model

Substituting 3) into 2) you get:

4) Util now =  $\beta$ 1 +  $\beta$ 3\*(age at baseline + time spent in the model) +  $\beta$ 4\*( age at baseline + time spent in the model)^2

To get QALYs, we integrate this value with respect to time

For ease of notation: age at baseline = a, time spent in the model = t

$$\int_{-\infty}^{\infty} \beta_1 + \beta_3 (a+t) + \beta_4 (a+t)^2 dt$$

Which gives

 $[\beta_1 t + 0.5t^2(\beta_3 + 2a\beta_4) + at(\beta_3 + a\beta_4) + (\beta_4 t^3)/3] + C$ 

To get QALYs for the general population, you evaluate this formula between age at baseline and age at death

To get QALYs for your patient, you apply utility multipliers to the QALYs for the general population

Discounted QALYs

In line with Tappenden et al.(15) the standard discounting formula of:

1/(1+dr)<sup>t</sup>

Where dr is the discount rate and t is time since model entry

Can be rewritten as all of the following:

$$(1+dr)^{-t} \& e^{\ln(1+dr)^{-t}} \& e^{-\ln(1+dr)t}$$

Consequently the discounted utility of a patient at any point in time is given by the formula:

1) Discounted util now =  $(\beta 1 + \beta_3*(a+t) + \beta_4*(a+t)^2)*e^{-\ln(1+dr)t}$ 

If we denote  $-\ln(1+dr) = r$ ,

we can do the following integration:

$$\int_{-\infty}^{\infty} (\beta_1 + \beta_3(a + t) + \beta_4(a + t)^2) * e^{-rt} dt$$

Which gives:

$$\frac{e^{-rt}(-\beta_4(a^2r^2+2ar(rt+1)+r^2t^2+2rt+2)-r(ar\beta_3+\beta_1r+\beta_3rt+\beta_3))}{r^3}+constant$$

Again, to get lifetime discounted QALYs for someone in the general population who lived as long as your patient, you assess the definite integral of this formula between age at baseline and age at death.

To get discounted QALYs for your patient, you apply utility multipliers to the discounted QALYs for someone in the general population who lived as long as your patient

# Stability of the base case model to the number of patients run through the model

1000 pa	atients				
	QALYs	Costs	Incr QALYs	Incr Costs	ICER
Sens 28	13.844	£33,945	-	-	-
Sens 57	13.844	£34,004	-	-	Dominated
Sens 64	13.844	£34,021	-	-	Dominated
Sens 70	13.849	£34,111	0.005	£166	£33,872
Sens 75	13.849	£34,125	-	-	Dominated
Sens 88	13.849	£34,156	-	-	Dominated
Sens 90	13.849	£34,167	-	-	Dominated
Sens 95	13.849	£34,238	-	-	Dominated
Sens 100	13.853	£35,012	0.004	£901	£215,306

5000 pati	5000 patients							
	QALYs	Costs	Incr QALYs	Incr Costs	ICER			
Sens 28	13.771	£34,596	-	-	-			
Sens 57	13.773	£34,713	-	-	ED			
Sens 64	13.773	£34,737	-	-	Dominated			
Sens 70	13.776	£34,780	0.006	£183	£33,329			
Sens 75	13.776	£34,797	-	-	Dominated			
Sens 88	13.776	£34,823	-	-	Dominated			
Sens 90	13.776	£34,836	-	-	Dominated			
Sens 95	13.776	£34,924	-	-	Dominated			
Sens	13.778	£35,012	0.002	£233	£122,346			
100								
10000 pat	tients			_				
	QALYs	Costs	Incr	Incr	ICER			
			QALYs	Costs				
Sens 28	13.707	£34,47	5 -	-	-			
Sens 57	13.709	£34,58	8 -	-	ED			
Sens 64	13.710	£34,62	2 -	-	ED			
Sens 70	13.712	£34,65	4 -	-		ED		
Sens 75	13.713	£34,69	0.006	£215	£34,911			
Sens 88	13.714	£34,73	3 0.001	£43		£44,669		
Sens 90	13.714	£34,75	1 -	-	ED			

Sens 95	13.714	£34,836	-	-	Dominated	
Sens	13.715	£34,903	0.001	£171		£137,407
100						

15000 patients						
	QALYs	Costs	Incr QALYs	Incr Costs	ICER	
Sens 28	13.646	£34,520	-	-	-	
Sens 57	13.649	£34,644	-	-	ED	
Sens 64	13.651	£34,686	-	-	ED	
Sens 70	13.652	£34,714	-	-	ED	
Sens 75	13.653	£34,745	-	-	ED	
Sens 88	13.655	£34,807	0.009	£287	£32,520	
Sens 90	13.655	£34,824	-	-	ED	
Sens 95	13.655	£34,911	-	-	Dominated	
Sens 100	13.656	£34,969	0.001	£162	£187,097	

20000 patients					
patients	QALYs	Costs	Incr QALYs	Incr Costs	ICER
Sens 28	13.644	£34,109	-	-	-
Sens 57	13.647	£34,244	-	-	ED
Sens 64	13.650	£34,298	-	-	ED
Sens 70	13.651	£34,325	-	-	ED
Sens 75	13.651	£34,351	-	-	ED
Sens 88	13.654	£34,414	0.010	£305	£31,792
Sens 90	13.654	£34,430	-	-	ED
Sens 95	13.654	£34,519	-	-	Dominated
Sens 100	13.655	£34,585	0.001	£171	£135,654

25000 pats						
	QALYs	Costs	Incr QALYs	Incr Costs	ICER	
Sens 28	13.639	£34,147	-	-	-	
Sens 57	13.641	£34,271	-	-	ED	
Sens 64	13.644	£34,320	-	-	ED	
Sens 70	13.644	£34,349	-	-	ED	
Sens 75	13.645	£34,378	-	-	ED	
Sens 88	13.648	£34,441	-	-	ED	
Sens 90	13.649	£34,476	0.010	£328	£31,419	
Sens 95	13.649	£34,568	-	-	ED	
Sens 100	13.651	£34,644	0.002	£169	£80,747	

30000 pa	30000 pats						
	QALYs	Costs	Incr QALY	Incr Cost	ICER		
			S	S			
Sens 28	13.646	£34,067	-	-	-		
Sens 57	13.648	£34,191	-	-	ED		
Sens 64	13.650	£34,239	-	-	ED		
Sens 70	13.651	£34,267	-	-	ED		
Sens 75	13.652	£34,294	-	-	ED		
Sens 88	13.654	£34,356	-	-	ED		
Sens 90	13.655	£34,389	0.010	£322	£33,729		
Sens 95	13.655	£34,482	-	-	ED		
Sens 100	13.657	£34,550	0.002	£161	£92,590		

40000 pat	:S				
	QALYs	Costs	Incr	Incr	ICER
			QALY	Cost	
			S	S	
Sens 28	13.666	£34,133	-	-	-
Sens 57	13.669	£34,254	-	-	ED
Sens 64	13.671	£34,304	-	-	ED
Sens 70	13.671	£34,332	-	-	ED
Sens 75	13.672	£34,357	-	-	ED
Sens 88	13.676	£34,435	-	-	ED
Sens 90	13.677	£34,469	0.010	£336	£32,392
Sens 95	13.677	£34,562	-	-	ED
Sens	13.678	£34,625	0.002	£156	£96,955
100					

50000 pats						
	QALYs	Costs	Incr	Incr	ICER	
			QALY	Cost		
			S	S		
Sens 28	13.671	£34,113	-	-	-	
Sens 57	13.674	£34,236	-	-	ED	
Sens 64	13.676	£34,283	-	-	ED	
Sens 70	13.676	£34,308	-	-	ED	
Sens 75	13.677	£34,336	-	-	ED	
Sens 88	13.681	£34,422	-	-	ED	
Sens 90	13.682	£34,453	0.010	£339	£32,937	
Sens 95	13.682	£34,548	-	-	ED	

Sens	13.683	£34,610	0.002	£158	£88,712
100					

## Details on how the use of MTCs was adjusted for in the TARN 2015 survival equation

Box 1: Details on how to calculate the risk of death at an MTC and local hospital using the Bouamra et al 2015 TARN survival equation.(2)

Mathematical formulae to calculate the TARN risk of death in those patients who did and did not go to an MTC

#### Where:

p\_death\_TARN is the probability of death predicted by calculating 1 minus the value of the TARN survival equation

pMTC is the probability that a patient was sent to an MTC

p\_death\_TARN\_MTC is the probability of death for patients in TARN who were sent to the MTC

p\_death\_TARN\_local hospital is the probability of death for patients in TARN who were not sent to the MTC

RR\_local hospital\_v\_MTC is the relative risk of death for patients who are not sent to the MTC compared to those patients who were not

### By definition:

- 1) p\_death\_TARN = pMTC\*p\_death\_TARN\_MTC + (1-pMTC)\*p\_death\_TARN\_local hospital
- 2) p\_death\_TARN\_local hospital = p\_death\_TARN\_MTC\*RR\_local hospital\_v\_MTC

Substitute 2) into 1)

3) p\_death\_TARN = pMTC\*p\_death\_TARN\_MTC + (1-pMTC)\*(p\_death\_TARN\_MTC\*RR\_local hospital\_v\_MTC)

rearrange

## Full results for the scenario analyses

### TARN 2015 survival equation with every patient's CCI being missing

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens,	18.4%	51.7%	15.2%	3.06%	1.82%	32.373	13.730	£33,519	-
88.6% Spec									
57.0% Sens,	27.7%	71.0%	23.4%	3.00%	1.79%	32.386	13.736	£33,667	£25,427
80.0% Spec									
64.2% Sens,	31.5%	75.9%	27.2%	2.99%	1.78%	32.389	13.738	£33,708	£27,601
76.1% Spec									
69.8% Sens,	37.1%	79.6%	32.9%	2.98%	1.78%	32.392	13.739	£33,746	ED
70.1% Spec									
74.6% Sens,	41.2%	82.9%	37.1%	2.97%	1.77%	32.394	13.740	£33,777	ED
65.7% Spec									
87.5% Sens,	44.5%	91.6%	39.9%	2.95%	1.76%	32.400	13.742	£33,841	£28,146
62.8% Spec									
90.4% Sens,	48.5%	93.5%	44.1%	2.94%	1.76%	32.401	13.743	£33,864	£37,007
58.4% Spec									
94.8% Sens,	83.4%	96.5%	82.1%	2.94%	1.75%	32.403	13.744	£33,962	ED
18.7% Spec									
99.8% Sens,	97.8%	99.9%	97.6%	2.93%	1.75%	32.405	13.745	£34,017	£54,102
2.5% Spec									

MTCs have 25% benefit, RR of death prior to discharge = 1.07, RR of death discharge and one year = 1.16

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens,	18.4%	51.7%	15.2%	4.77%	1.82%	32.042	13.576	£33,019	-
88.6% Spec									
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.71%	1.79%	32.058	13.583	£33,176	£23,141
64.2% Sens,	31.5%	75.9%	27.2%	4.69%	1.78%	32.062	13.585	£33,219	£23,802
76.1% Spec 69.8% Sens,	37.1%	79.6%	32.9%	4.68%	1.77%	32.066	13.586	£33,259	ED
70.1% Spec									
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.67%	1.77%	32.069	13.588	£33,292	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.64%	1.75%	32.076	13.591	£33,361	£23,853
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.63%	1.75%	32.078	13.592	£33,384	£25,355
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.61%	1.73%	32.087	13.595	£33,489	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.60%	1.72%	32.092	13.597	£33,547	£28,930

### MTCs have 50% benefit, RR of death prior to discharge = 1.13, RR of death discharge to one year = 1.32

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.77%	1.85%	32.032	13.572	£33,013	-
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.70%	1.82%	32.049	13.580	£33,172	ED
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.69%	1.81%	32.054	13.582	£33,215	ED
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.67%	1.80%	32.058	13.584	£33,256	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.66%	1.79%	32.062	13.585	£33,289	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.63%	1.78%	32.070	13.589	£33,358	ED
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.62%	1.77%	32.072	13.590	£33,382	ED
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.59%	1.74%	32.088	13.596	£33,491	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.57%	1.72%	32.096	13.599	£33,551	£20,368

### MTCs have 75% benefit, RR of death prior to discharge = 1.19, RR of death discharge to one year = 1.48

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.77%	1.89%	32.021	13.569	£33,008	-
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.70%	1.85%	32.040	13.576	£33,167	ED
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.68%	1.84%	32.045	13.579	£33,211	ED
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.66%	1.83%	32.051	13.581	£33,252	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.65%	1.82%	32.055	13.583	£33,286	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.62%	1.80%	32.063	13.586	£33,356	ED
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.61%	1.80%	32.067	13.588	£33,380	ED
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.57%	1.75%	32.088	13.596	£33,493	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.55%	1.72%	32.099	13.600	£33,554	£17,299

## Results of the threshold analyses on best practice tariff payment levels

		15 = £1541, IS	1		Τ	T	T	T	T
Strategy	Probability	Probability	Probability	Proportion	Proportion of	Mean	Mean	Mean discounted	ICER
	of been	of been	of been	of patients	patients who	years	discounted	Costs	
	sent to the	sent to the	sent to the	who died	die between	lived	QALYs		
	MTC	MTC (ISS ≥	MTC (ISS <	before	discharge				
		16)	16)	discharge	and 1-year				
					post-injury				
28.4% Sens,	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£33,032	
88.6% Spec									
57.0% Sens,	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,192	£25,575
80.0% Spec									
64.2% Sens,	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,236	£27,971
76.1% Spec									
69.8% Sens,	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,276	ED
<b>70.1% Spec</b>									
74.6% Sens,	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,309	ED
65.7% Spec									
87.5% Sens,	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,379	£28,294
62.8% Spec									
90.4% Sens,	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,403	£36,919
58.4% Spec									
94.8% Sens,	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,507	ED
18.7% Spec									
99.8% Sens,	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,565	£80,823
2.5% Spec									

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£33,030	-
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,190	£25,431
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,233	£27,701
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,272	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,305	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,375	£28,016
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,398	£36,183
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,498	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,554	£77,877

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£33,022	-
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,177	£24,718
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,218	£26,406
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,255	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,285	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,353	£26,657
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,374	£32,612
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,453	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,502	£63,465

Strategy	Probability	Probability	Probability	Proportion	Proportion of	Mean	Mean	Mean discounted	ICER
<b>.</b>	of been	of been	of been	of patients	patients who	years	discounted	Costs	
	sent to the MTC	sent to the MTC (ISS ≥ 16)	sent to the MTC (ISS < 16)	who died before discharge	die between discharge and 1-year post-injury	lived	QALYs		
28.4% Sens,	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£33,014	-
88.6% Spec									
57.0% Sens,	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,164	£24,005
80.0% Spec									
64.2% Sens,	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,203	£25,118
76.1% Spec									
69.8% Sens,	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,237	ED
70.1% Spec									
74.6% Sens,	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,265	ED
65.7% Spec									
87.5% Sens,	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,332	£25,299
62.8% Spec									
90.4% Sens,	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,350	£29,025
58.4% Spec									
94.8% Sens,	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,409	ED
18.7% Spec									
99.8% Sens,	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,449	£49,058
2.5% Spec									

Strategy	Probability	Probability	Probability	Proportion	Proportion of	Mean	Mean	Mean discounted	ICER
	of been	of been	of been	of patients	patients who	years	discounted	Costs	
	sent to the MTC	sent to the MTC (ISS ≥ 16)	sent to the MTC (ISS < 16)	who died before discharge	die between discharge and 1-year post-injury	lived	QALYs	3333	
28.4% Sens,	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£33,006	_
88.6% Spec								,	
57.0% Sens,	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,152	£23,293
80.0% Spec									
64.2% Sens,	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,189	£23,823
76.1% Spec									
69.8% Sens,	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,219	ED
70.1% Spec									
74.6% Sens,	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,245	ED
65.7% Spec									
87.5% Sens,	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,310	£23,940
62.8% Spec									
90.4% Sens,	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,326	£25,454
58.4% Spec									
94.8% Sens,	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,365	ED
18.7% Spec									
99.8% Sens,	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,396	£34,646
2.5% Spec									

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£33,026	-
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,183	£25,183
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,226	£27,579
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,266	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,298	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,368	£27,901
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,391	£36,512
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,495	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,553	£80,430

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£33,024	-
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,181	£25,040
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,223	£27,310
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,262	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,294	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,363	£27,623
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,386	£35,792
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,486	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,542	£77,479

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£33,016	-
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,168	£24,327
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,208	£26,015
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,245	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,274	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,342	£26,265
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,362	£32,205
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,441	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,489	£63,067

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£33,007	-
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,155	£23,615
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,194	£24,714
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,227	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,254	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,320	£24,908
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,338	£28,633
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,397	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,436	£48,655

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,999	-
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,143	£22,901
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,179	£23,425
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,209	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,234	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,299	£23,550
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,315	£25,062
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,352	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,383	£34,243

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,993	-
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,139	£23,243
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,179	£25,618
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,216	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,246	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,310	£25,955
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,332	£34,586
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,434	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,490	£78,450

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,991	-
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,136	£23,096
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,176	£25,355
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,212	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,242	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,306	£25,677
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,327	£33,865
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,425	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,479	£75,494

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,983	-
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,123	£22,385
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,161	£24,060
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,195	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,222	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,284	£24,319
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,303	£30,294
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,381	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,426	£61,082

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,975	-
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,111	£21,672
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,146	£22,765
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,177	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,202	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,263	£22,960
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,280	£26,707
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,336	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,373	£46,675

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,967	
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,098	£20,961
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,131	£21,470
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,159	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,182	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,241	£21,602
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,256	£23,135
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,292	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,321	£32,263

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,961	
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,094	£21,301
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,131	£23,669
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,166	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,194	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,253	£24,007
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,273	£32,675
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,373	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,427	£76,459

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,959	
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,091	£21,154
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,128	£23,406
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,162	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,190	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,248	£23,729
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,269	£31,938
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,364	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,416	£73,513

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,951	
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,079	£20,443
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,113	£22,111
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,145	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,170	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,227	£22,371
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,245	£28,367
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,320	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,363	£40,305

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,943	
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,066	£19,730
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,098	£20,816
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,127	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,150	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,205	£21,012
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,221	£24,780
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,276	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,311	£44,694

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,934	-
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,053	£19,019
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,084	£19,515
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,109	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,130	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,183	£19,403
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,197	£21,209
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,231	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,258	£30,282

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,928	
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,049	£19,359
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,083	£21,714
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,116	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,142	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,195	£22,061
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,215	£30,748
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,313	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,364	£74,478

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,927	
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,047	£19,214
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,080	£21,451
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,112	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,138	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,191	£21,781
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,210	£30,012
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,304	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,354	£71,532

Strategy	Probability	Probability	Probability	Proportion	Proportion of	Mean	Mean	Mean discounted	ICER
	of been	of been	of been	of patients	patients who	vears	discounted	Costs	
	sent to the	sent to the	sent to the	who died	die between	lived	QALYs		
	MTC	MTC (ISS ≥	MTC (ISS <	before	discharge				
		16)	16)	discharge	and 1-year post-injury				
28.4% Sens,	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,918	
88.6% Spec									
57.0% Sens,	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,034	£18,501
80.0% Spec									
64.2% Sens,	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,065	£20,149
76.1% Spec									
69.8% Sens,	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,094	ED
70.1% Spec									
74.6% Sens,	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,118	ED
65.7% Spec									
87.5% Sens,	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,169	£20,425
62.8% Spec									
90.4% Sens,	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,186	£26,440
58.4% Spec									
94.8% Sens,	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,259	ED
18.7% Spec									
99.8% Sens,	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,301	£57,120
2.5% Spec									

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,910	
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,021	£17,790
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,051	£18,854
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,077	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,098	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,147	£19,066
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,162	£22,853
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,215	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,248	£42,713

Strategy	Probability of been sent to the MTC	Probability of been sent to the MTC (ISS ≥ 16)	Probability of been sent to the MTC (ISS < 16)	Proportion of patients who died before discharge	Proportion of patients who die between discharge and 1-year post-injury	Mean years lived	Mean discounted QALYs	Mean discounted Costs	ICER
28.4% Sens, 88.6% Spec	18.4%	51.7%	15.2%	4.78%	1.78%	32.053	13.580	£32,902	
57.0% Sens, 80.0% Spec	27.7%	71.0%	23.4%	4.72%	1.76%	32.067	13.586	£33,009	£17,077
64.2% Sens, 76.1% Spec	31.5%	75.9%	27.2%	4.70%	1.75%	32.070	13.588	£33,036	£17,559
69.8% Sens, 70.1% Spec	37.1%	79.6%	32.9%	4.69%	1.75%	32.073	13.589	£33,059	ED
74.6% Sens, 65.7% Spec	41.2%	82.9%	37.1%	4.68%	1.74%	32.075	13.590	£33,078	ED
87.5% Sens, 62.8% Spec	44.5%	91.6%	39.9%	4.65%	1.73%	32.082	13.593	£33,126	£17,708
90.4% Sens, 58.4% Spec	48.5%	93.5%	44.1%	4.65%	1.73%	32.083	13.594	£33,138	£19,282
94.8% Sens, 18.7% Spec	83.4%	96.5%	82.1%	4.64%	1.72%	32.085	13.594	£33,170	ED
99.8% Sens, 2.5% Spec	97.8%	99.9%	97.6%	4.62%	1.72%	32.088	13.596	£33,195	£28,301

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