

**Supplementary Table 1: Unit costs used to value resource use data collected during the ART Trial**

Resource category	Unit cost (2013/14 GBP/£)	Assumptions and Source
<b>Theatre Resource Use</b>		
Operating theatre time (per minute)	19.78	Average of theatre running costs (inclusive of staff) divided by theatre hours for cardiology at 8 boards in Scotland carrying out CABG (cardiac surgery). <sup>1</sup>
Drugs for anaesthetic induction	3.83	Assuming 1mg Fentanyl, 5mg Midazolam, 1 amp (4mg) Pancuronium bromide <sup>2,3</sup>
Muscle relaxant maintenance	6.03	Assuming 2 amps of Pancuronium bromide <sup>2,3</sup>
Inhalational anaesthetics (per minute)	0.002	Assuming Isoflurane at a concentration of 50% and fresh gas flow of 3 litres per min. <sup>2-4</sup>
Consumables (all procedures)	400.00	<sup>5</sup>
Additional consumables (on-pump procedures)	100.00	<sup>5</sup>
Bypass machine time (per hour)	14.62	Machine purchase cost plus maintenance contract annuitised assuming a machine lifespan of 7 years and assuming a 3.5% discount rate. Annual usage of machine is assumed to be eight hours per day, five days per week. <sup>5</sup>
Unit of red blood cells	122.09	Assuming 294ml mean volume per unit. <sup>6,7</sup>
Unit of platelets	208.09	Assuming 297ml mean volume per unit. <sup>6,7</sup>
Unit of fresh frozen plasma	27.98	Assuming 246ml mean volume per unit. <sup>6,7</sup>
Unit of cryoprecipitate (pooled)	193.53	Assuming 187ml mean volume per unit <sup>6,7</sup>
Laboratory issuing costs per blood product unit	2.00	<sup>8</sup>
Cell saver machine (per hour)	1.38	Machine purchase cost plus maintenance contract annuitised assuming a machine lifespan of 7 years and assuming a 3.5% discount rate. Annual usage of machine is assumed to be eight hours per day, five days per week. <sup>9</sup>
Cell saver consumables	100.00	<sup>9</sup>
Aprotinin (per dose)	320.36	Assuming one-off cost for 6 million Kallikrein Inhibitor Units intravenously; 2012/13 cost inflated to 2013/14 cost year using HCHS Inflation Index. <sup>10,11</sup>
<b>Post-theatre Resource Use</b>		
Ventilation (per hour)	36.31	2012/13 estimate inflated to 2013/14 using HCHS Inflation Index. <sup>10,12</sup>
Intra-aortic balloon pump plus pressure transducer (per insertion)	560.00	<sup>5</sup>
Inotrope drug days		
Adrenaline	4.67	Assuming average dose of 0.08 mcg/kg/min, 4mg in total volume 50ml with 5% Dextrose. <sup>2,13</sup>

Resource category	Unit cost (2013/14 GBP/£)	Assumptions and Source
Noradrenaline	5.34	Assuming average dose of 0.05 mcg/kg/min, 4mg in total volume 50ml with 5% Dextrose. <sup>2, 13</sup>
Dobutamine	4.51	Assuming average dose of 6 mcg/kg/min, 250mg in total volume 50ml with 5% . <sup>2, 13</sup>
Renal support therapy (per day)	685.00	NHS Reference Costs, procedure code LE01A (haemodialysis for acute kidney injury). <sup>14</sup>
Haemofiltration (single dose)		
Mannitol	3.12	Assumes a one off dose of 0.2-2g/kg intravenously. <sup>15</sup>
Frusemide	0.21	Assumes a one off dose of 20-50mg intravenously. <sup>2, 15</sup>
<b><i>Treatment of sternal wound infection</i></b>		
Antibiotics for superficial sternal wound infection (per course)	8.13	Assuming antibacterial protocol of 1g Flucloxacillin IV 4 times daily for 2 days; and either 2g Flucloxacillin IV once daily, 500mg Cefalexin 3 times daily, or 450mg Clindamycin 3 times daily for 5 days. <sup>2, 16</sup>
Antibiotics for deep sternal wound infection (per course)	132.54	Assuming antibacterial protocol of 500mg Meropenem and 600mg iv for 3 doses, then 600mg Teicoplanin IV once daily, then 3 times daily for 7 days. <sup>2, 16</sup>
VAC Dressing (per episode)	291.60	Includes VAC canister, dressing and machine and assumes three applications. Costs provided by trial participating hospital. <sup>16</sup>
Debridement procedures	2385.48	Assumed to require two hours of theatre time and prophylactic antibiotics. Time costed using theatre and anaesthetic drug costs (above) and <sup>2</sup> .
Surgical reconstruction	4759.30	Assumed to require four hours of theatre time and prophylactic antibiotics. Time costed using theatre and anaesthetic drug costs (above) and <sup>2</sup> .
<b><i>SAEs during index admission</i></b>		
Myocardial infarction	922.39	NHS Reference Costs – weighted average of non-elective inpatient myocardial infarction across Cardiology, Cardiac Surgery and Cardiothoracic surgery, less inpatient bed days costed using average excess bed day cost for MI. <sup>14</sup>
Cerebrovascular accident	1095.69	NHS Reference Costs – weighted average of non-elective inpatient cerebrovascular accident across Cardiology, Cardiac Surgery and Cardiothoracic surgery, less inpatient bed days costed using average excess bed day cost for cerebrovascular accident. <sup>14</sup>
Further CABG	4933.99	NHS Reference Costs – weighted average of non-elective inpatient complex cardiac surgery and re-do's across Cardiology, Cardiac Surgery and Cardiothoracic surgery, less inpatient bed days costed using average excess bed day cost for complex cardiac surgery and re-do's. <sup>14</sup>
Further PTCA	2328.47	NHS Reference Costs – weighted average of non-elective percutaneous coronary intervention and re-do's across Cardiology, Cardiac Surgery and Cardiothoracic surgery, less inpatient bed days costed using average excess bed day cost for percutaneous coronary intervention. <sup>14</sup>
Cardiac catheterisation only	1634.84	NHS Reference Costs – weighted average of non-elective inpatient "Catheter with CC Score X" across Cardiology, Cardiac Surgery and Cardiothoracic surgery, less inpatient bed days costed using average excess bed day cost for catheterisation. <sup>14</sup>

Resource category	Unit cost (2013/14 GBP/£)	Assumptions and Source
Major bleed	4759.30	Assumed to require surgery for investigation and to incur the same cost as sternal wound infection requiring reconstruction.
<b>Inpatient bed days</b>		
Intensive Therapy Unit	643.00	NHS Reference costs - weighted average across all unventilated critical care service codes. <sup>14</sup>
High Dependency Unit	370.00	Average of daily costs provided by two NHS hospitals.
Cardiac Ward	263.53	NHS Reference costs. Excess bed day cost for CABG patients in cardiac surgery speciality.
<b>Medications from discharge (per day)</b>		
Aspirin	0.004	75mg per day for duration of follow-up unless otherwise stated. <sup>2</sup>
Clopidogrel	0.035	75 mg per day for a period of three months unless otherwise stated. <sup>2</sup>
Warfarin	0.014	6mg per day for duration of follow-up. <sup>2</sup>
Beta-blockers	0.009	Assumed drug is Bisoprolol at 5mg per day for duration of follow-up. <sup>2</sup>
Calcium-channel antagonists	0.006	Assumed drug is Amlodipine at 5mg per day for duration of follow-up. Unit cost taken from eMIT. <sup>2</sup>
Nitrates	0.144	Assumed drug is Isosorbide Mononitrate at 40mg per day for duration of follow-up. <sup>2</sup>
Potassium channel activators	0.176	Assumed drug is Nicorandil at 40mg per day for duration of follow-up. <sup>2</sup>
Statins	0.051	Assumed half of patients received Simvastatin at 40mg per day and half Atorvastatin at 80mg per day for duration of follow-up. <sup>2</sup>
Other lipid lowering drugs	0.94	Assumed drug is Ezetimibe at 10mg per day -up. <sup>15</sup> .
ACE inhibitors	0.011	Assumed drug is Ramipril at 5mg per day. <sup>2</sup>
Angiotensin-II antagonists	0.05	Assumed half of patients received Losarten at 100mg per day and half Candesarten at 32mg per day for duration of follow-up. <sup>2</sup>
Diuretics	0.004	Assumed drug is Frusemide at 40mg per day for a period of four weeks after surgery. <sup>2</sup>
Digoxin	0.009	250mcg per day for duration of follow-up. <sup>2</sup>
Amiodarone	0.103	600mg per day for duration of follow-up. <sup>2</sup>
<b>Post-hospital discharge</b>		
Discharged to:		
Other hospital (per day)	263.53	Assume same bed day cost as for cardiac ward above.
Nursing home (per day)	157.14	<sup>10</sup> (Section 1.3)
Rehabilitation unit (total cost)	2808.00	<sup>10</sup> Assuming an average stay of 33 days (section 1.6)
GP clinic attendance	46.00	<sup>10</sup> Assuming attendance duration of 11.7 minutes (Section 10.8b)
Visits to practice nurse	13.69	<sup>10</sup> Assuming attendance duration of 15.5 minutes (Section 10.6)
Outpatient clinic attendance	131.00	NHS Reference Costs. Code 320. Cardiology outpatient clinic. <sup>14</sup>

Resource category	Unit cost (2013/14 GBP/£)	Assumptions and Source
Cardiac rehabilitation clinic attendance	61.00	NHS Reference Costs. Code 327. Cardiac rehabilitation outpatient clinic. <sup>14</sup>
Hospital re-admission bed day	275.00	NHS Reference Costs. Non-elective inpatient excess bed day cost. Weighted average of all admission types. <sup>14</sup>
Myocardial infarction requiring admission	2243.86	NHS Reference Costs– weighted average of non-elective inpatient MI across Cardiology, Cardiac Surgery and Cardiothoracic surgery. <sup>14</sup>
Cerebrovascular accident requiring admission	3333.31	NHS Reference Costs– weighted average of non-elective inpatient cerebrovascular accident across Cardiology, Cardiac Surgery and Cardiothoracic surgery. <sup>14</sup>
Further CABG requiring admission	8089.67	NHS Reference Costs – weighted average of non-elective inpatient complex cardiac surgery and re-do's across Cardiology, Cardiac Surgery and Cardiothoracic surgery. <sup>14</sup>
Further PTCA requiring admission	3601.60	NHS Reference Costs – weighted average of non-elective percutaneous coronary intervention and re-do's across Cardiology, Cardiac Surgery and Cardiothoracic surgery. <sup>14</sup>
Revascularisation with catheterisation only requiring admission	3540.94	NHS Reference Costs – weighted average of non-elective inpatient costs across Cardiology, Cardiac Surgery and Cardiothoracic surgery <sup>14</sup>
Major bleed requiring admission	4759.30	Assumed to require surgery for investigation and to incur the same cost as sternal wound infection requiring reconstruction.
Other SAEs requiring admission	Various	Costed by associated length of hospital stay.
Myocardial infarction without admission	519.21	NHS Reference Costs - Actual or Suspected Myocardial Infarction, General Medicine, day case. <sup>14</sup>
Cerebrovascular accident without admission	397.12	NHS Reference Costs – Average of day case (£505.52) and Elective short stay (£754.61) weighted average costs. <sup>14</sup>
Further PTCA without admission	2021.41	NHS Reference Costs– weighted average of A&E, Non-admitted (Types 01-03, VB01Z, VB02Z, VB04Z). <sup>14</sup>
Major bleed without admission	4759.30	As for major bleed during index admission, assumed to require surgery for investigation and to incur the same cost as sternal wound infection requiring reconstruction.
Revascularisation with catheterisation only without admission	994.78	NHS Reference Costs– Catheter, Cardiology, day case. <sup>14</sup>
Emergency investigations without admission	220.44	A&E category 4 or 5 treatment (weighted average). Used as an estimate for day hospital cost for patients not admitted. <sup>14</sup>

**Accompanying text for Supplementary Table 1**

A cost per minute of theatre time (inclusive of running costs and staff) for cardiac surgery was calculated using data from the Scottish Health Service Costs database and was applied to each patient's recorded theatre duration.<sup>1</sup> Anaesthetic drug induction and maintenance regimes were based on expert clinical opinion obtained during a previous CABG study and were costed for the duration of the surgery using unit costs from the NHS electronic Market Information Tool (eMIT).<sup>2-4</sup> Patients were assigned a fixed cost for surgery consumables (variable by on-pump / off-pump procedure)<sup>5</sup> and time on cardiopulmonary bypass was multiplied by a per minute capital cost for a bypass machine. This cost was estimated by calculating an equivalent annual cost based on the purchase price of a machine (plus annual maintenance contract) as provided by a trial participating hospital<sup>5</sup>, and applying an annuity factor assuming an interest rate of 3.5% and a machine lifespan of seven years. Assuming annual usage to be eight hours per day, five days per week enabled the calculation of a per minute capital cost for the bypass machine.

For patients receiving blood products, volumes of each product given were converted into whole numbers of standard issue unit packs and appropriate unit costs obtained from the 2013/14 NHS Blood and Transplant Price List were then assigned.<sup>6,7</sup> The cost to the hospital laboratory of issuing each unit of product was also included.<sup>8</sup> When a cell saver machine was used, the duration of use was assumed to be equivalent to the theatre duration, with this time multiplied by a per minute capital cost for a machine. This capital cost was estimated using the same approach and based upon the same assumptions as for the bypass machine (see above). An associated fixed consumable cost per cell saver activation was also included.<sup>9</sup>

The durations of any re-admissions to theatre were costed so as to take account of theatre running costs and staff (as per the initial theatre admission) and additional PRBCs given were costed as described previously. A cost per minute for receiving ventilation was obtained from the published literature and used to multiply recorded ventilation durations, and when an intra-aortic balloon pump was used a cost for this insertion (obtained from a trial participating hospital) was assigned.<sup>5, 10, 12</sup> Days receiving each type of inotropic drug recorded were costed using prices from eMIT<sup>2</sup> and based on drug-specific standard daily treatment schedules (informed by expert clinical opinion), and days receiving renal support therapy were costed using a daily therapy cost obtained from the NHS Reference Costs.<sup>14</sup> When a haemofiltration drug was given, a single dose was assumed and an appropriate drug-specific unit cost obtained from eMIT or the British National Formulary and assigned.<sup>2, 15</sup>

To cost antibiotic treatment given for a sternal wound infection, an antibacterial treatment protocol for cardiac surgery was obtained from a participating trial hospital.<sup>16</sup> Protocols were available for both superficial and deep sternal wound infections, and were each costed using prices from eMIT<sup>2</sup>. Patients with a sternal wound problem who received antibiotics alone were assumed to have been treated for a superficial infection, whilst those receiving antibiotics in combination with other treatments were assumed to have had a deep infection. When VAC dressings were applied to sternal wounds a cost (provided by a trial participating hospital<sup>16</sup>) was assigned which included the cost of the canister, dressing and machine and assumed three dressing applications over a one week period.

When patients returned to theatre for debridement or reconstruction following a sternal wound infection, duration in theatre was assumed to be two hours and four hours respectively based upon expert clinical opinion.<sup>2</sup> Such procedures were costed to include theatre running costs and staff, anaesthetic drugs (as per the initial theatre admission), and prophylactic antibiotics (drug and dose again taken from the same antibacterial treatment protocol for cardiac surgery).

Any myocardial infarctions, cerebrovascular accidents, further CABG, PTCA or cardiac catheterisations occurring during the initial hospital admission were costed using the appropriate 2013/14 NHS Reference Costs<sup>14</sup> after first removing the associated average bed day costs to avoid double counting. This adjustment was conducted by multiplying the average length of stay reported for each type of event by an excess bed day cost for that event and subtracting this figure from the Reference Cost estimate. For major bleeds / other vascular events the amount of blood products administered and / or cell saver usage was recorded and costed. Surgical intervention was also recorded but as theatre duration was unavailable, the cost of surgery was assumed to be equivalent to the cost of performing a surgical reconstruction (see section on sternal wound infection above). The cost impact of any 'other' SAEs occurring during the initial inpatient stay was assumed to be captured by costing length of stay. An A&E attendance was assumed where participants were admitted for an SAE but no overnight stay was reported.

Appropriate bed day costs assigned to the duration in ITU, HDU, and general wards during the initial admission for surgery were also obtained from the 2013/14 NHS Reference Costs.<sup>14</sup>

Data were recorded for each patient at hospital discharge on whether certain medications (for example clopidogrel) or classes of medication (Beta-blockers) had been prescribed (see Table 1). A combination of expert clinical opinion and the published literature was used to identify the average daily dose, frequency and duration for which each drug would be taken (when only a class of drug was reported, expert opinion was used to identify the drug most likely to have been prescribed). These data were then costed using the appropriate drug unit costs from eMIT.<sup>2, 15</sup>

When costing discharges to a local hospital, it was assumed that the duration of the inpatient stay at these destination hospitals was equivalent to the trial arm specific mean general ward stay during the initial inpatient admission, with this time costed using a general cardiac surgery ward excess bed day cost from the 2013/14 NHS Reference Costs.<sup>14</sup> Patients discharged to a nursing home were assumed to be long term residents remaining there for the remainder of the 12 month period. Days in a nursing home for these patients were calculated and costed using a nursing home daily unit cost.<sup>10</sup> When 'Other' was recorded as the discharge location this was assumed to be a rehabilitation unit. Length of stay and associated cost of this rehabilitative care was assumed to be 33 days and £2808 respectively, obtained from the Personal Social Services Research Unit.<sup>10</sup>

Unit costs for GP and practice nurse visits were obtained from the Personal Social Services Research Unit and applied to all reported visits.<sup>10</sup> NHS reference costs provided unit costs for all recorded hospital outpatient clinic and cardiac rehabilitation clinic visits.<sup>14</sup>

Treatments and procedures for sternal wounds reported at six weeks were costed as described previously, but with the addition of days in hospital (costed using a non-elective inpatient bed day cost from the NHS Reference Costs 2013/14) where an inpatient admission was required. The NHS Reference Costs also provided unit costs for the following events reported at six weeks and 12 months: myocardial infarction, cerebrovascular accident, CABG, PTCA and cardiac catheterisation. Non-elective inpatient costs were used when the event was associated with a hospital admission and day-case costs were used when no admission was recorded. Recorded major bleeds / vascular events were costed as described previously, again with the addition of days in hospital when required. All 'other' types of SAE were costed by multiplying the associated hospital inpatient stay by a non-elective inpatient bed day cost.<sup>14</sup>

**Supplementary Table 2: Sensitivity analysis showing resource use and for a “Per protocol” analysis (n=2788)**

Resource use/cost category	Mean resource use (SD) or n(%) of patients receiving resource		Mean difference in resource use (95% CI, p-value)	Mean cost (SD)		Mean difference in costs (95% CI, p-value)
	Received SIMA per protocol (n=1494)	Received BIMA per protocol (n=1294)		BIMA vs. SIMA	Received SIMA (n=1494)	
<b>Initial Surgery</b>						
Time in theatre (minutes)	253 (67)	279 (68)	25.68 (20.61 , 30.75 ; 0.000)	-	-	-
<i>Duration related theatre costs and staff</i>	-	-	-	5002 (1331)	5510 (1350)	508 (408 , 608 ; 0.000)
<i>Duration related anaesthetic costs</i>	-	-	-	10 (0.1)	10 (0.1)	0 (0 , 0 ; 0.000)
Time on bypass (minutes)	52 (49)	47 (50)	-4.21 (-7.90 , -0.53 ; 0.025)	13 (12)	12 (12)	-1 (-2 , 10 ; 0.025)
Other surgery costs (consumables, blood products, aprotinin)	-	-	-	634 (243)	637 (290)	3 (-17 , 23 ; 0.756)
<b>Total initial surgery costs</b>	-	-	-	5659 (1408)	6170 (1491)	510 (402 , 618 ; 0.000)
<b>Returned to theatre</b>						
Patients returning to theatre, n(%)	54 (3.5)	66 (4.3)	0.85 (-0.59 , 2.28 ; 0.248)	106 (770)	110 (574)	4 (-47 , 55 ; 0.879)
<b>Immediate post-operative period</b>						
Ventilation time (minutes)	865 (3342)	991 (3211)	125.50 (-120.74 , 371.74 ; 0.318)	524 (2022)	600 (1943)	76 (-73 , 225 ; 0.318)
Intra-aortic balloon pump, n(%)	57 (3.4)	68 (4.4)	0.08 (-0.06 , 2.26 ; 0.249)	19 (102)	24 (113)	5 (-3 , 13 ; 0.249)
Inotropic support (days)	0.7 (2.9)	0.7 (1.4)	-0.02 (-0.19 , 0.15 ; 0.842)	4 (17)	4 (9)	0 (-1 , 1 ; 0.652)
Renal support therapy (days)	0.1 (0.9)	0.2 (2.4)	0.12 (-0.01 , 0.25 ; 0.070)	88 (602)	171 (1635)	82 (-7 , 172 ; 0.070)
Hemofiltration, n(%)	207 (13.4)	222 (14.4)	1.91 (-0.70 , 4.53 ; 0.152)	0.1 (0.4)	0.1 (0.5)	0 (0 , 0 ; 0.216)
<b>In-hospital sternal wound problems</b>						
Total cost of sternal wound problems	-	-	-	10 (272)	64 (727)	54 (14 , 94 ; 0.008)
<b>In-hospital SAEs, n(%)</b>						
All non-sternal wound related adverse events	-	-	-	166 (924)	203 (1123)	37 (-39 , 113 ; 0.340)
<b>In-hospital stay</b>						
Time in ITU (hours)	35.1 (103.6)	37.6 (93.3)	2.42 (-4.95 , 9.79 ; 0.519)	941 (2775)	1006 (2500)	65 (-133 , 262 ; 0.519)
Time in HDU (days)	1.2 (3.1)	1.2 (2.4)	0.03 (-0.18 , 0.23 ; 0.804)	451 (1132)	461 (898)	10 (-67 , 86 ; 0.804)

Time on general cardiac wards (days)	7.0 (5.7)	7.2 (6.4)	0.29 (-0.16 , 0.74 ; 0.203)	1834 (1490)	1911 (1678)	76 (-41 , 194 ; 0.203)
<b>Total cost of initial inpatient admission</b>	-	-	-	<b>9804 (6417)</b>	<b>10723 (6437)</b>	<b>919 (440 , 1398 , 0.000)</b>
<b>At hospital discharge</b>						
Total costs at discharge	-	-	-	521 (3686)	474 (3259)	-47 (-307 , 214 ; 0.726)
<b>Sternal wound problems to 6 weeks</b>						
Total cost of sternal wound problems	-	-	-	91 (973)	272 (2129)	181 (61 , 301 ; 0.003)
<b>Medications discharge to 12 months - mean number of medications (SE)</b>	3.3 (1.1)	3.3 (1.1)	0.01 (-0.08 , 0.09 ; 0.904)	56 (72)	58 (71)	2 (-3 , 8 ; 0.416)
<b>Health care contacts discharge to 12 months</b>						
GP visits	6.4 (5.0)	6.1 (5.0)	-0.34 (-0.72 , 0.04 ; 0.076)	296 (229)	281 (228)	-16 (-33 , 2 ; 0.076)
Nurse visits	3.1 (8.2)	3.4 (8.0)	0.23 (-0.37 , 0.84 ; 0.454)	43 (112)	46 (109)	3 (-5 , 11 ; 0.454)
Outpatient clinic visits	1.9 (2.2)	2.4 (7.9)	0.46 (0.04 , 0.88 ; 0.033)	251 (294)	311 (1034)	60 (5 , 115 ; 0.033)
Cardiac rehabilitation visits	5.1 (8.9)	5.1 (8.7)	-0.01 (-0.67 , 0.67 ; 0.983)	384 (540)	384 (533)	-1 (-41 , 40 ; 0.970)
Hospital admissions	0.3 (0.8)	0.3 (0.8)	0.01 (-0.05 , 0.07 ; 0.699)	-	-	-
	2.5 (8.9)	3.0 (11.0)	0.51 (-0.26 , 1.27 ; 0.192)	669 (2346)	803 (2891)	134 (-67 , 334 ; 0.192)
<b>SAEs from discharge to 12 months, n(%)</b>						
All non-sternal wound related adverse events	-	-	-	567 (2661)	574 (3064)	7 (-205 , 220 ; 0.945)
<b>Total costs from discharge to 12 months</b>	-	-	-	<b>2879 (6217)</b>	<b>3203 (7175)</b>	<b>324 (-176 , 824 ; 0.204)</b>
<b>Total overall costs at 12 months</b>	-	-	-	<b>12682 (9755)</b>	<b>13925 (10151)</b>	<b>1243 (501 , 1985 ; 0.001)</b>

**Supplementary Table 3: Sensitivity analysis showing resource use and costs for a “complete case” analysis (n=2071)**

Resource use/cost category	Mean resource use (SD) or n(%) of patients receiving resource		Mean difference in resource use (95% CI, p-value)	Mean cost (SD)		Mean difference in costs (95% CI, p-value)
	SIMA (complete cases) (n=1043)	BIMA (complete cases) (n=1028)		SIMA (complete cases) (n=1043)	BIMA (complete cases) (n=1028)	
<b>Initial Surgery</b>						
Time in theatre (minutes)	258 (72)	281 (69)	22.81 (16.72 , 28.91 ; 0.000)	-	-	-
<i>Duration related theatre costs and staff</i>	-	-	-	5103 (1422)	5554 (1375)	451 (331 , 572 ; 0.000)
<i>Duration related anaesthetic costs</i>	-	-	-	10 (0.1)	10 (0.4)	0 (0 , 0 ; 0.002)
Time on bypass (minutes)	62 (48)	59 (48)	-3.35 (-7.47 , 0.77 ; 0.111)	15 (12)	14 (12)	-1 (-2 , 0 ; 0.111)
Other surgery costs (consumables, blood products, aprotinin)	-	-	-	645 (249)	636 (244)	-9 (-30 , 12 ; 0.404)
<b>Total initial surgery costs</b>	-	-	-	5774 (1514)	6215 (1461)	441 (313 , 570 ; 0.000)
<b>Returned to theatre</b>						
Patients returning to theatre, n(%)	30 (2.9)	32 (3.11)	0.24 (-1.23 , 1.71 ; 0.752)	78 (432)	84 (453)	6 (-32 , 44 ; 0.770)
<b>Immediate post-operative period</b>						
Ventilation time (minutes)	720 (1446)	861 (2025)	140.72 (-10.73 , 292.17 ; 0.069)	436 (875)	521 (1225)	85 (-6 , 177 ; 0.069)
Intra-aortic balloon pump, n(%)	30 (2.9)	31 (3.0)	0.14 (-1.32 , 1.60 ; 0.851)	16 (94)	17 (96)	1 (-7 , 9 ; 0.851)
Inotropic support (days)	0.7 (3.2)	0.6 (1.1)	-0.06 (-0.27 , 0.14 ; 0.541)	4 (17)	4 (8)	0 (-2 , 1 ; 0.510)
Renal support therapy (days)	0.1 (0.5)	0.1 (0.5)	0.01 (-0.04 , 0.04 ; 0.964)	46 (336)	47 (335)	1 (-28 , 30 ; 0.964)
Hemofiltration, n(%)	144 (13.8)	139 (13.5)	-0.28 (-3.25 , 2.68 ; 0.850)	0.1 (0.3)	0.1 (0.3)	0 (0 , 0 ; 0.828)
<b>In-hospital sternal wound problems</b>						
Total cost of sternal wound problems	-	-	-	0.3 (9.0)	55 (687)	54 (12 , 96 ; 0.011)
<b>In-hospital SAEs, n(%)</b>						
All non-sternal wound related adverse events	-	-	-	125 (793)	132 (802)	8 (-61 , 76 ; 0.829)
<b>In-hospital stay</b>						
Time in ITU (hours)	33.4 (70.2)	33.6 (50.9)	0.15 (-5.14 , 5.45 ; 0.955)	895 (1882)	899 (899)	4 (-138 , 146 ; 0.955)
Time in HDU (days)	1.1 (2.7)	1.2 (3.4)	0.13 (-0.13 , 0.39 ; 0.341)	400 (989)	447 (1249)	47 (-50 , 144 ; 0.341)
Time on general cardiac wards (days)	6.7 (4.8)	7.0 (6.1)	0.31 (-0.16 , 0.79 ; 0.194)	1766 (1266)	1849 (1615)	83 (-42 , 208 ; 0.194)

<b>Total cost of initial inpatient admission</b>	-	-	-	<b>9541 (3977)</b>	<b>10270 (4395)</b>	<b>729 (368 , 1090 ; 0.000)</b>
<b>At hospital discharge</b>						
Total costs at discharge	-	-	-	507 (3601)	446 (3162)	-61 (-353 , 231 ; 0.683)
<b>Sternal wound problems to 6 weeks</b>						
Total cost of sternal wound problems	-	-	-	130 (1203)	202 (1556)	72 (-47 , 192 ; 0.236)
<b>Medications discharge to 12 months - mean number of medications (SE)</b>	3.3 (1.0)	3.3 (1.0)	-0.02 (-0.11 , 0.07 ; 0.716)	41 (57)	43 (59)	2 (-3 , 7 ; 0.478)
<b>Health care contacts discharge to 12 months</b>	6.4 (4.8)	6.12 (4.7)	-0.24 (-0.65 , 0.17 ; 0.254)	294 (221)	283 (216)	-11 (-30 , 8 ; 0.254)
GP visits	3.2 (9.2)	3.0 (7.3)	-0.22 (-0.93 , 0.50 ; 0.555)	44 (126)	41 (100)	-3 (-13 , 7 ; 0.555)
Nurse visits	2.0 (2.3)	2.4 (7.5)	0.39 (-0.09 , 0.87 ; 0.110)	262 (300)	313 (988)	51 (-12 , 114 ; 0.110)
Outpatient clinic visits	5.0 (8.6)	5.4 (8.6)	0.36 (-0.38 , 1.10 ; 0.339)	379 (530)	401 (524)	22 (-23 , 67 ; 0.341)
Cardiac rehabilitation visits	0.3 (0.7)	0.3 (0.8)	0.01 (-0.06 , 0.07 ; 0.864)	-	-	-
Hospital admissions	2.7 (8.5)	2.8 (10.6)	0.14 (-0.69 , 0.96 ; 0.746)	712 (2231)	748 (2806)	36 (-182 , 254 ; 0.746)
<b>SAEs from discharge to 12 months, n(%)</b>						
All non-sternal wound related adverse events	-	-	-	541 (2535)	461 (2138)	-79 (-281 , 123 ; 0.443)
<b>Total costs from discharge to 12 months</b>	-	-	-	<b>2911 (6188)</b>	<b>2940 (6090)</b>	<b>29 (-500 , 559 ; 0.913)</b>
<b>Total overall costs at 12 months</b>	-	-	-	<b>12451 (8127)</b>	<b>13210 (8438)</b>	<b>759 (45 , 1472 ; 0.037)</b>

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**Supplementary Table 4: Costs for subgroups: diabetes**

Resource use/cost category	No history of diabetes (n=2368)			Insulin/non-insulin dependent diabetes (n=734)		
	Mean cost (SD)		Mean difference in costs (95% CI, p-value)	Mean cost (SD)		Mean difference in costs (95% CI, p-value)
	SIMA	BIMA	BIMA vs. SIMA	SIMA	BIMA	BIMA vs. SIMA
Total initial surgery costs <sup>1</sup>	5637 (1490)	6032 (1626)	395 (269 , 521 ; 0.000)	5771 (1564)	6155 (1589)	385 (156 , 613 ; 0.001)
Patients returning to theatre, n(%)	112 (821)	118 (611)	5 (-53 , 64 ; 0.856)	83 (525)	80 (378)	-4 (-70 , 62 ; 0.911)
Total post-operative costs <sup>2</sup>	609 (2378)	711 (2545)	102 (-97 , 302 ; 0.315)	699 (1333)	916 (2577)	217 (-82 , 515 ; 0.154)
Total in-hospital sternal wound problems	7 (219)	45 (530)	38 (5 , 71 ; 0.022)	20 (382)	130 (1110)	110 (-11 , 231 ; 0.075)
All in-hospital non-sternal wound related adverse events, n(%) <sup>3</sup>	191 (1000)	230 (1207)	39 (-51 , 128 ; 0.396)	101 (662)	221 (1149)	120 (-16 , 257 ; 0.083)
Total cost of in-hospital ward stay	3122 (3305)	3261 (3223)	140 (-124 , 403 ; 0.298)	3573 (4955)	3750 (3697)	177 (-456 , 810 ; 0.583)
<b>Total cost of initial inpatient admission</b>	<b>9678 (6395)</b>	<b>10396 (6461)</b>	<b>719 (200 , 1237 ; 0.007)</b>	<b>10248 (6365)</b>	<b>11252 (6998)</b>	<b>1005 (35 , 1975 ; 0.042)</b>
Total costs of discharge locations	574 (4108)	488 (3406)	-86 (-390 , 218 ; 0.580)	306 (786)	474 (3064)	167 (-159 , 493 ; 0.314)
Sternal wound problems up to 6 weeks	62 (778)	135 (1319)	74 (-14 , 161 ; 0.098)	236 (1632)	596 (3260)	359 (-16 , 734 ; 0.060)
Medications discharge to 12 months - mean number of medications (SE)	57 (75)	58 (72)	2 (-5 , 8 ; 0.577)	55 (67)	60 (75)	5 (-7 , 17 ; 0.395)
Health care contacts discharge to 12 months (all)	1630 (2328)	1694 (2757)	64 (-151 , 279 ; 0.559)	1762 (3084)	2369 (4620)	607 (34 , 1181 ; 0.038)
All non-sternal wound related adverse events from discharge to 12 months	554 (2588)	585 (3164)	31 (-202 , 263 ; 0.797)	642 (2843)	618 (2300)	-24 (-398 , 351 ; 0.900)
<b>Total costs from discharge to 12 months</b>	<b>2877 (6214)</b>	<b>2961 (6599)</b>	<b>84 (-436 , 604 ; 0.752)</b>	<b>3002 (6173)</b>	<b>4116 (8509)</b>	<b>1115 (34 , 2195 ; 0.043)</b>
<b>Total overall costs at 12 months</b>	<b>12555 (9617)</b>	<b>13557 (9788)</b>	<b>803 (18 , 1587 ; 0.045)</b>	<b>13249 (10042)</b>	<b>15369 (12504)</b>	<b>2119 (473 , 3766 ; 0.012)</b>

<sup>1</sup> Includes: Time in theatre (minutes), duration related theatre costs and staff, duration related anaesthetic costs, time on bypass (minutes), and other surgery costs (consumables, blood products, aprotinin); <sup>2</sup> Includes: Ventilation time, Intra-aortic balloon pump, Inotropic support, Renal support therapy, Hemofiltration; <sup>3</sup> Includes: Myocardial Infarction, Cerebrovascular accident, Further CABG, Further PTCA, Revascularisation with catheter, Major bleed, Other AEs (cost of hospital stay only), Death (cost of hospital stay only)

**Supplementary Table 5: Costs for subgroups: age**

Resource use/cost category	Age <70 (n=2271)			Age > 70 (n=831)		
	Mean cost (SD)		Mean difference in costs (95% CI, p-value)	Mean cost (SD)		Mean difference in costs (95% CI, p-value)
	SIMA	BIMA	BIMA vs. SIMA	SIMA	BIMA	BIMA vs. SIMA
Total initial surgery costs <sup>1</sup>	5616 (1496)	6028 (1499)	412 (288 , 535 ; 0.000)	5807 (1533)	6156 (1912)	349 (113 , 585 ; 0.004)
Patients returning to theatre, n(%)	107 (804)	95 (488)	-12 (-67 , 43 ; 0.671)	101 (602)	146 (736)	45 (-46 , 136 ; 0.334)
Total post-operative costs <sup>2</sup>	540 (1189)	620 (1519)	80 (-32 , 192 ; 0.163)	870 (3682)	1155 (4266)	286 (-259 , 831 ; 0.304)
Total in-hospital sternal wound problems	7 (225)	64 (724)	57 (13 , 102 ; 0.011)	18 (353)	68 (687)	50 (-24 , 124 ; 0.187)
All in-hospital non-sternal wound related adverse events, n(%) <sup>3</sup>	148 (873)	184 (1075)	36 (-45 , 117 ; 0.383)	229 (1074)	352 (1469)	123 (-52 , 297 ; 0.169)
Total cost of in-hospital ward stay	3080 (3658)	3183 (2886)	103 (-168 , 374 ; 0.455)	3618 (3992)	3928 (4352)	309 (-259 , 877 ; 0.286)
<b>Total cost of initial inpatient admission</b>	<b>9497 (5714)</b>	<b>10174 (5231)</b>	<b>677 (225 , 128 ; 0.003)</b>	<b>10644 (7858)</b>	<b>11805 (9349)</b>	<b>1161 (-14 , 2336 ; 0.053)</b>
Total costs of discharge locations	316 (1847)	375 (2500)	59 (-122 , 241 ; 0.520)	1031 (6203)	791 (4953)	-239 (-1006 , 527 ; 0.540)
Sternal wound problems up to 6 weeks	99 (1021)	246 (2042)	147 (14 , 280 ; 0.030)	113 (1107)	245 (1777)	132 (-69 , 322 ; 0.199)
Medications discharge to 12 months - mean number of medications (SE)	58 (73)	61 (74)	3 (-4 , 10 ; 0.368)	53 (73)	53 (69)	0 (-10 , 10 ; 0.954)
Health care contacts discharge to 12 months (all)	1436 (1905)	1651 (2391)	214 (29 , 400 ; 0.024)	2258 (3631)	2434 (5033)	176 (-427 , 779 ; 0.567)
All non-sternal wound related adverse events from discharge to 12 months	386 (1430)	499 (2818)	113 (-72 , 297 ; 0.231)	1076 (4464)	858 (3381)	-218 (-759 , 323 ; 0.428)
<b>Total costs from discharge to 12 months</b>	<b>2294 (3916)</b>	<b>2831 (5883)</b>	<b>537 (122 , 952 ; 0.011)</b>	<b>4531 (9823)</b>	<b>4381 (9708)</b>	<b>-150 (-1484 , 1184 ; 0.825)</b>
<b>Total overall costs at 12 months</b>	<b>11791 (7439)</b>	<b>13005 (8512)</b>	<b>1214 (554 , 1873 ; 0.000)</b>	<b>15175 (13800)</b>	<b>16186 (14568)</b>	<b>1011 (-925 , 2976 ; 0.306)</b>

<sup>1</sup> Includes: Time in theatre (minutes), duration related theatre costs and staff, duration related anaesthetic costs, time on bypass (minutes), and other surgery costs (consumables, blood products, aprotinin); <sup>2</sup> Includes: Ventilation time, Intra-aortic balloon pump, Inotropic support, Renal support therapy, Hemofiltration; <sup>3</sup> Includes: Myocardial Infarction, Cerebrovascular accident, Further CABG, Further PTCA, Revascularisation with catheter, Major bleed, Other AEs (cost of hospital stay only), Death (cost of hospital stay only)

**Supplementary Table 6: Costs for subgroups: on/off pump**

Resource use/cost category	Off-pump (n=1259)			On pump (n=1819)		
	Mean cost (SD)		Mean difference in costs (95% CI, p-value)	Mean cost (SD)		Mean difference in costs (95% CI, p-value)
	SIMA	BIMA	BIMA vs. SIMA	SIMA	BIMA	BIMA vs. SIMA
Total initial surgery costs <sup>1</sup>	5280 (1044)	5720 (1099)	439 (320 , 559 ; 0)	5976 (1616)	6416 (1677)	440 (289 , 592 ; 0)
Patients returning to theatre, n(%)	114 (1021)	127 (674)	13 (-83 , 108 ; 0.797)	101 (529)	97 (475)	-3 (-50 , 43 ; 0.89)
Total post-operative costs <sup>2</sup>	748 (3203)	816 (3087)	68 (-282 , 418 ; 0.703)	557 (1053)	733 (2113)	177 (24 , 329 ; 0.023)
Total in-hospital sternal wound problems	24 (422)	58 (620)	34 (-25 , 93 ; 0.259)	0 (10)	71 (781)	71 (21 , 121 ; 0.006)
All in-hospital non-sternal wound related adverse events, n(%) <sup>3</sup>	196 (1034)	206 (1170)	10 (-112 , 132 ; 0.874)	151 (857)	244 (1217)	93 (-3 , 190 ; 0.058)
Total cost of in-hospital ward stay	3436 (5179)	3204 (3436)	-232 (-707 , 243 ; 0.338)	3108 (2390)	3552 (3436)	444 (173 , 715 ; 0.001)
<b>Total cost of initial inpatient admission</b>	<b>9799 (8796)</b>	<b>10130 (6964)</b>	<b>332 (-545 , 1208 ; 0.458)</b>	<b>9893 (4030)</b>	<b>11115 (6219)</b>	<b>1222 (742 , 1703 ; 0)</b>
Total costs of discharge locations	566 (4033)	471 (3270)	-94 (-500 , 311 ; 0.648)	480 (3330)	490 (3394)	10 (-299 , 319 ; 0.949)
Sternal wound problems up to 6 weeks	43 (586)	249 (2214)	205 (25 , 386 ; 0.026)	143 (1263)	248 (1805)	105 (-38 , 248 ; 0.15)
Medications discharge to 12 months - mean number of medications (SE)	54 (68)	56 (68)	2 (-6 , 10 ; 0.59)	57 (75)	59 (74)	2 (-5 , 9 ; 0.553)
Health care contacts discharge to 12 months (all)	1670 (2652)	1858 (3553)	188 (-165 , 541 ; 0.296)	1660 (2444)	1858 (3141)	198 (-71 , 466 ; 0.149)
All non-sternal wound related adverse events from discharge to 12 months	694 (3405)	684 (4023)	-10 (-423 , 403 ; 0.961)	500 (2006)	538 (538)	37 (-144 , 219 ; 0.686)
<b>Total costs from discharge to 12 months</b>	<b>3027 (7040)</b>	<b>3318 (7774)</b>	<b>291 (-532 , 1114 ; 0.488)</b>	<b>2840 (5605)</b>	<b>3192 (6668)</b>	<b>352 (-218 , 922 ; 0.226)</b>
<b>Total overall costs at 12 months</b>	<b>12826 (12201)</b>	<b>13449 (10958)</b>	<b>623 (-660 , 1906 ; 0.341)</b>	<b>12732 (7628)</b>	<b>14307 (10202)</b>	<b>1575 (745 , 2404 ; 0)</b>

<sup>1</sup> Includes: Time in theatre (minutes), duration related theatre costs and staff, duration related anaesthetic costs, time on bypass (minutes), and other surgery costs (consumables, blood products, aprotinin); <sup>2</sup> Includes: Ventilation time, Intra-aortic balloon pump, Inotropic support, Renal support therapy, Hemofiltration; <sup>3</sup> Includes: Myocardial Infarction, Cerebrovascular accident, Further CABG, Further PTCA, Revascularisation with catheter, Major bleed, Other AEs (cost of hospital stay only), Death (cost of hospital stay only)

**Supplementary Table 7: Costs for subgroups: prior/no prior MI**

Resource use/cost category	No prior MI (n=1800)			Prior MI (n=1300)		
	Mean cost (SD)		Mean difference in costs (95% CI, p-value)	Mean cost (SD)		Mean difference in costs (95% CI, p-value)
	SIMA	BIMA	BIMA vs. SIMA	SIMA	BIMA	BIMA vs. SIMA
Total initial surgery costs <sup>1</sup>	5646 (1487)	6088 (1655)	442 (296 , 588 ; 0)	5697 (1536)	6022 (1563)	325 (156 , 494 ; 0)
Patients returning to theatre, n(%)	105 (893)	99 (528)	-7 (-74 , 61 ; 0.849)	106 (553)	118 (601)	12 (-51 , 75 ; 0.706)
Total post-operative costs <sup>2</sup>	537 (1209)	701 (2543)	165 (-23 , 352 ; 0.085)	750 (2991)	844 (2568)	94 (-211 , 399 ; 0.544)
Total in-hospital sternal wound problems	9 (256)	65 (759)	56 (3 , 109 ; 0.039)	11 (279)	54 (573)	43 (-5 , 91 ; 0.081)
All in-hospital non-sternal wound related adverse events, n(%) <sup>3</sup>	181 (965)	211 (1156)	30 (-68 , 129 ; 0.547)	157 (891)	253 (1248)	97 (-21 , 214 ; 0.106)
Total cost of in-hospital ward stay	3161 (4098)	3273 (3277)	112 (-231 , 454 ; 0.523)	3313 (3277)	3530 (3448)	218 (-148 , 584 ; 0.243)
<b>Total cost of initial inpatient admission</b>	<b>9639 (6388)</b>	<b>10437 (6666)</b>	<b>798 (193 , 1402 ; 0.01)</b>	<b>10033 (6396)</b>	<b>10821 (6474)</b>	<b>789 (88 , 1490 ; 0.027)</b>
Total costs of discharge locations	460 (3420)	537 (3816)	77 (-258 , 413 ; 0.651)	578 (3859)	406 (2419)	-172 (-527 , 182 ; 0.341)
Sternal wound problems up to 6 weeks	139 (1239)	201 (1757)	61 (-80 , 203 ; 0.394)	56 (723)	313 (2265)	258 (78 , 437 ; 0.005)
Medications discharge to 12 months - mean number of medications (SE)	56 (73)	57 (70)	1 (-6 , 8 ; 0.762)	57 (73)	62 (76)	5 (-4 , 13 ; 0.27)
Health care contacts discharge to 12 months (all)	1738 (2617)	1726 (3019)	-12 (-289 , 264 ; 0.93)	1563 (2401)	2054 (3704)	491 (153 , 830 ; 0.004)
All non-sternal wound related adverse events from discharge to 12 months	584 (2669)	460 (1857)	-124 (-336 , 87 ; 0.25)	564 (2628)	793 (4120)	229 (-143 , 602 ; 0.228)
<b>Total costs from discharge to 12 months</b>	<b>2977 (6328)</b>	<b>2981 (6705)</b>	<b>4 (-606 , 613 ; 0.991)</b>	<b>2817 (6047)</b>	<b>3628 (7690)</b>	<b>811 (61 , 1561 ; 0.034)</b>
<b>Total overall costs at 12 months</b>	<b>12617 (9931)</b>	<b>13418 (10256)</b>	<b>801 (-137 , 1740 ; 0.094)</b>	<b>12850 (9452)</b>	<b>14449 (10911)</b>	<b>1599 (490 , 2708 ; 0.005)</b>

<sup>1</sup> Includes: Time in theatre (minutes), duration related theatre costs and staff, duration related anaesthetic costs, time on bypass (minutes), and other surgery costs (consumables, blood products, aprotinin); <sup>2</sup> Includes: Ventilation time, Intra-aortic balloon pump, Inotropic support, Renal support therapy, Hemofiltration; <sup>3</sup> Includes: Myocardial Infarction, Cerebrovascular accident, Further CABG, Further PTCA, Revascularisation with catheter, Major bleed, Other AEs (cost of hospital stay only), Death (cost of hospital stay only)

**Supplementary Table 8: Costs for subgroups: NYHA class**

Resource use/cost category	NYHA class I & II (n=2431)			NYHA class III & IV (n=669)		
	Mean cost (SD)		Mean difference in costs (95% CI, p-value)	Mean cost (SD)		Mean difference in costs (95% CI, p-value)
	SIMA	BIMA	BIMA vs. SIMA	SIMA	BIMA	BIMA vs. SIMA
Total initial surgery costs <sup>1</sup>	5756 (1554)	6152 (1628)	396 (269 , 523 ; 0)	5339 (1274)	5747 (1542)	408 (192 , 625 ; 0)
Patients returning to theatre, n(%)	106 (817)	106 (538)	0 (-56 , 55 ; 0.989)	105 (504)	120 (647)	15 (-74 , 103 ; 0.747)
Total post-operative costs <sup>2</sup>	622 (2280)	762 (2640)	140 (-57 , 337 ; 0.163)	663 (1755)	753 (2230)	90 (-216 , 396 ; 0.563)
Total in-hospital sternal wound problems	12 (300)	69 (754)	57 (11 , 102 ; 0.015)	0.0 (0.5)	52 (551)	52 (-8 , 112 ; 0.09)
All in-hospital non-sternal wound related adverse events, n(%) <sup>3</sup>	166 (926)	215 (1188)	49 (-36 , 134 ; 0.257)	187 (962)	273 (1201)	86 (-80 , 253 ; 0.31)
Total cost of in-hospital ward stay	3223 (3995)	3348 (3356)	125 (-169 , 419 ; 0.404)	3242 (2698)	3483 (3322)	241 (-220 , 702 ; 0.306)
<b>Total cost of initial inpatient admission</b>	<b>9885 (6781)</b>	<b>10651 (6700)</b>	<b>766 (230 , 1303 ; 0.005)</b>	<b>9536 (4640)</b>	<b>10428 (6253)</b>	<b>892 (52 , 1732 ; 0.038)</b>
Total costs of discharge locations	532 (3711)	403 (2450)	-129 (-379 , 122 ; 0.314)	437 (3252)	768 (5356)	331 (-347 , 1009 ; 0.338)
Sternal wound problems up to 6 weeks	111 (1116)	252 (2053)	141 (10 , 272 ; 0.035)	70 (716)	223 (1679)	153 (-45 , 351 ; 0.13)
Medications discharge to 12 months - mean number of medications (SE)	57 (74)	58 (72)	1 (-5 , 7 ; 0.747)	54 (68)	62 (75)	8 (-4 , 21 ; 0.178)
Health care contacts discharge to 12 months (all)	1630 (2372)	1789 (3036)	159 (-64 , 382 ; 0.163)	1782 (3041)	2091 (4127)	308 (-260 , 877 ; 0.287)
All non-sternal wound related adverse events from discharge to 12 months	559 (2617)	537 (2366)	-22 (-221 , 176 ; 0.827)	633 (2779)	789 (4506)	156 (-417 , 729 ; 0.593)
<b>Total costs from discharge to 12 months</b>	<b>2889 (6121)</b>	<b>3039 (6244)</b>	<b>150 (-345 , 644 ; 0.553)</b>	<b>2976 (6530)</b>	<b>3933 (9538)</b>	<b>957 (-298 , 2211 ; 0.135)</b>
<b>Total overall costs at 12 months</b>	<b>12774 (9968)</b>	<b>13690 (623)</b>	<b>916 (128 , 1703 ; 0.023)</b>	<b>12513 (8751)</b>	<b>14361 (12852)</b>	<b>1849 (166 , 3532 ; 0.031)</b>

<sup>1</sup> Includes: Time in theatre (minutes), duration related theatre costs and staff, duration related anaesthetic costs, time on bypass (minutes), and other surgery costs (consumables, blood products, aprotinin); <sup>2</sup> Includes: Ventilation time, Intra-aortic balloon pump, Inotropic support, Renal support therapy, Hemofiltration; <sup>3</sup> Includes: Myocardial Infarction, Cerebrovascular accident, Further CABG, Further PTCA, Revascularisation with catheter, Major bleed, Other AEs (cost of hospital stay only), Death (cost of hospital stay only)

**Supplementary Table 9: Costs for subgroups: CCS class**

Resource use/cost category	CCS class 0 , I , II (n=2143)			CCS class III, IVa/b/c (n=959)		
	Mean cost (SD)		Mean difference in costs (95% CI, p-value)	Mean cost (SD)		Mean difference in costs (95% CI, p-value)
	SIMA	BIMA	BIMA vs. SIMA	SIMA	BIMA	BIMA vs. SIMA
Total initial surgery costs <sup>1</sup>	5801 (1595)	6205 (1727)	404 (263 , 545 ; 0)	5365 (1236)	5748 (1297)	382 (222 , 543 ; 0)
Patients returning to theatre, n(%)	118 (867)	102 (513)	-16 (-77 , 45 ; 0.612)	78 (436)	123 (663)	45 (-26 , 116 ; 0.214)
Total post-operative costs <sup>2</sup>	655 (2516)	741 (2711)	86 (-137 , 309 ; 0.449)	573 (1068)	802 (2173)	229 (11 , 447 ; 0.039)
Total in-hospital sternal wound problems	7 (230)	59 (721)	52 (7 , 97 ; 0.024)	15 (335)	78 (699)	62 (-8 , 132 ; 0.081)
All in-hospital non-sternal wound related adverse events, n(%) <sup>3</sup>	174 (951)	215 (1212)	40 (-52 , 133 ; 0.391)	160 (888)	256 (1151)	96 (-35 , 227 ; 0.149)
Total cost of in-hospital ward stay	3233 (4262)	3308 (3447)	75 (-254 , 403 ; 0.656)	3213 (2220)	3533 (3118)	319 (-24 , 663 ; 0.069)
<b>Total cost of initial inpatient admission</b>	<b>9988 (7281)</b>	<b>10630 (6898)</b>	<b>641 (40 , 1243 ; 0.037)</b>	<b>9405 (3584)</b>	<b>10540 (5909)</b>	<b>1135 (513 , 1756 ; 0)</b>
Total costs of discharge locations	430 (3091)	415 (3114)	-15 (-278 , 248 ; 0.913)	698 (4598)	636 (3748)	-62 (-593 , 469 ; 0.819)
Sternal wound problems up to 6 weeks	120 (1171)	277 (2202)	157 (8 , 306 ; 0.039)	63 (672)	177 (1354)	114 (-22 , 250 ; 0.102)
Medications discharge to 12 months - mean number of medications (SE)	56 (73)	57 (72)	1 (-5 , 8 ; 0.734)	58 (72)	63 (74)	6 (-4 , 15 ; 0.26)
Health care contacts discharge to 12 months (all)	1638 (2396)	1726 (2552)	88 (-133 , 309 ; 0.435)	1714 (2797)	2141 (4540)	427 (-65 , 918 ; 0.089)
All non-sternal wound related adverse events from discharge to 12 months	564 (2698)	528 (2364)	-36 (-251 , 179 ; 0.741)	598 (2538)	734 (4007)	136 (-291 , 562 ; 0.533)
<b>Total costs from discharge to 12 months</b>	<b>2807 (5886)</b>	<b>3003 (6324)</b>	<b>196 (-326 , 717 ; 0.462)</b>	<b>3132 (6874)</b>	<b>3751 (8588)</b>	<b>619 (-374 , 1612 ; 0.221)</b>
<b>Total overall costs at 12 months</b>	<b>12796 (10250)</b>	<b>13633 (10047)</b>	<b>837 (-27 , 1701 ; 0.058)</b>	<b>12537 (8387)</b>	<b>14291 (11525)</b>	<b>1754 (470 , 3038 ; 0.007)</b>

<sup>1</sup> Includes: Time in theatre (minutes), duration related theatre costs and staff, duration related anaesthetic costs, time on bypass (minutes), and other surgery costs (consumables, blood products, aprotinin); <sup>2</sup> Includes: Ventilation time, Intra-aortic balloon pump, Inotropic support, Renal support therapy, Hemofiltration; <sup>3</sup> Includes: Myocardial Infarction, Cerebrovascular accident, Further CABG, Further PTCA, Revascularisation with catheter, Major bleed, Other AEs (cost of hospital stay only), Death (cost of hospital stay only)

**Supplementary Table 10: Costs for subgroups: by country**

Resource use/cost category	UK (n=2053)			Poland (n=606)			Australia (n=192)		
	Mean cost (SD)		Mean difference in costs (95% CI, p-value)	Mean cost (SD)		Mean difference in costs (95% CI, p- value)	Mean cost (SD)		Mean difference in costs (95% CI, p-value)
	SIMA	BIMA	BIMA vs. SIMA	SIMA	BIMA	BIMA vs. SIMA	SIMA	BIMA	BIMA vs. SIMA
Total initial surgery costs <sup>1</sup>	5655 (1223)	6031 (1565)	376 (254 , 498 ; 0)	5051 (1315)	5569 (1098)	517 (324 , 711 ; 0)	8329 (2173)	8245 (1941)	-84 (-672 , 504 ; 0.779)
Patients returning to theatre, n(%)	103 (838)	105 (557)	2 (-59 , 64 ; 0.947)	104 (597)	99 (519)	-5 (-95 , 86 ; 0.919)	194 (816)	137 (579)	-57 (-258 , 144 ; 0.577)
Total post-operative costs <sup>2</sup>	648 (2643)	726 (2287)	78 (-136 , 292 ; 0.474)	597 (690)	603 (508)	6 (-92 , 104 ; 0.906)	591 (856)	601 (797)	10 (-225 , 246 ; 0.932)
Total in-hospital sternal wound problems	8 (237)	49 (549)	42 (5 , 78 ; 0.026)	23 (413)	92 (793)	68 (-32 , 168 ; 0.181)	0.1 (0.8)	236 (1738)	235 (-166 , 587 ; 0.188)
All in-hospital non-sternal wound related adverse events, n(%) <sup>3</sup>	149 (880)	227 (1189)	78 (-13 , 167 ; 0.092)	215 (970)	176 (883)	-39 (-187 , 110 ; 0.609)	280 (1292)	220 (1126)	-60 (-405 , 284 ; 0.73)
Total cost of in-hospital ward stay	3213 (4379)	3208 (3079)	-5 (-332 , 322 ; 0.976)	3230 (1210)	3522 (2683)	292 (-38 , 621 ; 0.082)	3022 (1855)	3526 (3153)	504 (-238 , 1246 ; 0.182)
<b>Total cost of initial inpatient admission</b>	<b>9776 (7390)</b>	<b>10348 (5999)</b>	<b>571 (-11 , 1153 ; 0.055)</b>	<b>9221 (2867)</b>	<b>10061 (3985)</b>	<b>840 (288 , 1392 ; 0.003)</b>	<b>12416 (4847)</b>	<b>12964 (5921)</b>	<b>549 (-998 , 2095 ; 0.485)</b>
Total costs of discharge locations	486 (4406)	433 (4012)	-53 (-418 , 312 ; 0.775)	739 (1093)	743 (1093)	3 (-172 , 179 ; 0.969)	187 (677)	213 (731)	26 (-179 , 231 ; 0.801)
Sternal wound problems up to 6 weeks	112 (1121)	258 (2029)	146 (4 , 288 ; 0.044)	78 (820)	160 (1559)	82 (-115 , 280 ; 0.413)	163 (1356)	651 (3292)	488 (-231 , 1207 ; 0.183)
Medications discharge to 12 months - mean number of medications (SE)	48 (64)	52 (67)	4 (-2 , 10 ; 0.187)	74 (83)	77 (79)	3 (-11 , 17 ; 0.687)	38 (46)	43 (63)	5 (-13 , 22 ; 0.602)
Health care contacts discharge to 12 months (all)	1839 (2707)	2061 (3386)	222 (-46 , 491 ; 0.104)	1074 (1851)	1099 (1630)	25 (-333 , 384 ; 0.887)	1727 (2511)	1613 (2216)	-144 (-795 , 566 ; 0.741)
All non-sternal wound related adverse events from discharge to 12 months	724 (3134)	686 (3422)	-38 (-322 , 246 ; 0.795)	303 (1383)	179 (934)	-124 (-314 , 65 ; 0.198)	213 (724)	581 (2077)	369 (-76 , 813 ; 0.104)
<b>Total costs from discharge to 12 months</b>	<b>3209 (7238)</b>	<b>3491 (7884)</b>	<b>282 (-375 , 938 ; 0.4)</b>	<b>2268 (3083)</b>	<b>2258 (3329)</b>	<b>-10 (-561 , 540 ; 0.97)</b>	<b>2329 (3940)</b>	<b>3101 (6329)</b>	<b>773 (-736 , 2282 ; 0.314)</b>
<b>Total overall costs at 12 months</b>	<b>12985 (11334)</b>	<b>13838 (10817)</b>	<b>853 (-107 , 1812 ; 0.082)</b>	<b>11489 (11489)</b>	<b>12319 (5519)</b>	<b>830 (9 , 1650 ; 0.048)</b>	<b>14744 (6265)</b>	<b>16066 (8709)</b>	<b>1322 (-843 , 3486 ; 0.23)</b>

<sup>1</sup> Includes: Time in theatre (minutes), duration related theatre costs and staff, duration related anaesthetic costs, time on bypass (minutes), and other surgery costs (consumables, blood products, aprotinin); <sup>2</sup> Includes: Ventilation time, Intra-aortic balloon pump, Inotropic support, Renal support therapy, Hemofiltration; <sup>3</sup> Includes: Myocardial Infarction, Cerebrovascular accident, Further CABG, Further PTCA, Revascularisation with catheter, Major bleed, Other AEs (cost of hospital stay only), Death (cost of hospital stay only)

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