

HESG PAPER

05 June 2003

**Selecting Unit Costs for Economic Analyses: Some
conceptual and practical issues**

First draft

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TABLE OF CONTENTS

BACKGROUND	3
OBJECTIVES	3
METHODS	4
APPROPRIATE UNIT PRICES	5
RESULTS	6
DISCUSSION	8
REFERENCES.....	9

BACKGROUND

The increased use of cost-effectiveness analysis in explicit decisions on the utilisation of health technologies has led to closer scrutiny of the data used in such economic evaluations. The observed variability in cost data at the patient level, caused by variation in the use of health care resources, produces problems for economic evaluations based on trials. The interest of policy-makers is in the total costs of utilising in technology, making mean cost the relevant variable, but the skewness and dispersion of the data can make testing the significance of differences in means problematic (Thompson and Barker, 2000).

While most attention has been paid to cost-effectiveness produced by variation in resource use, less attention has been given to differences which might arise from variation in the unit prices of the resources. Riskou et al (2000) showed that using the centre-specific prices to evaluate resource use, as opposed to applying average prices across all centres can produce different estimates of average costs. This problem is compounded when the centre in a study are spread across countries (Greinar et al, 2000), and the dangers of trying to transfer the cost element of studies between countries are highlighted by Gosden and Tergersen (2002). To examine fully the impact of unit price variations on the results of economic evaluation, a full breakdown of resource use pattern and unit prices is needed for all centres. An example of a study which did this is Grieve et al (2001) on the cost of acute stroke, but examples of such studies are rare.

OBJECTIVES

The ongoing work described in this paper attempts to shed more light on three aspects of unit costing in economic evaluations: what are the appropriate unit prices; are appropriate unit prices being used in published studies; and if not, does it matter?

METHODS

To answer the second and third questions, and to provide some background information for discussion of the first, a review of recently published economic evaluations was carried out. In order to constrain the numbers of studies for review we decided to limit ourselves to cardiovascular diseases and oncology and focus on the main European countries including the UK. We searched the literature using the MEDLINE database of the National Library of Medicine as well as the NHS Economic Evaluation Database (NHS EED). We wanted to include recently published articles only and therefore limited the search period to January 2000 until April 2003.

The preliminary exercise was used to develop a system of classifying the information in the papers relevant to the unit values used. This resulted in a standardised structure including a series of parameters by means of which all relevant costing information was recorded. Key items for which we were looking included study type and objective, stated cost perspective, type of unit cost data used, cost sources, aggregation level at which unit costs were applied to resources, and the results of any sensitivity analysis on unit values. We also looked at various presentational elements such as analysis year, methods of uprating unit cost values to the analysis year, and existence of tables on unit values.

To assess the importance of the selection of unit resource values the results of any published sensitivity analyses were examined, as were the authors' conclusions.

The results discussed in this paper relate to a sub-sample of 15 papers in the cardiovascular area. For future versions of the paper the results of the full review will be available.

The appropriateness of the unit values was judged in relation to the study objective and the studied cost perspective. Whether the selection of unit values was important to the results of the study was judged from the impact of unit cost changes as shown in any sensitivity analysis.

APPROPRIATE UNIT PRICES

The appropriateness of prices can be judged on two levels. The policy-relevance test is whether they are in accord with the stated requirements of decision-makers in the country of interest. The conceptual test is whether they measure opportunity cost appropriately from the perspective of the decision-maker.

When perspective is considered with regards to economic evaluation in health care the main concern is usually with the range of resources included. For example, if a societal perspective is stated, are resources provided and used by patients, their families and non-health care services included? Little attention has been paid to whether the unit prices used should vary between analyses conducted from the societal or health system perspective.

The traditional cost-benefit analysis literature on costing is largely concerned with the adjustment which should be made to the observed market price of resources, in order to correct for distortions caused by market failure. The standard sources of distortion considered are monopolistic influences, taxation and trade barriers. These factors are rarely considered in health economic evaluations, which often use expressed willingness-to-pay for outputs, e.g. reimbursement fees, as a proxy for the value of inputs needed to provide a service. Another common approach is to use charges by service providers as a proxy for the value of inputs. This is clearly a unit value which reflects the competitive position of the service provider as well as the input costs for providing the service. Cost-to-charge ratios are often applied to such figures to make crude adjustments.

The fact that fees and charges are based on average costs raises the further issue of how to reflect the marginal social opportunity cost in evaluation. This becomes relevant as soon as an element of fixed costs enters the equation; and over a one year time horizon even many labour inputs have fixed cost characteristics. The possibility of wider variation in marginal costs between providers is most obvious in services using significant elements of capital equipment, e.g. diagnostic imaging, radiotherapy and surgery. Differences in capacity utilisation can mean that at any point in time the marginal opportunity cost value of the resources used to provide a test or procedure can be different on each provider site.

Using the “health care system” perspective (often called third party payer insurance-based system) avoids some of these issues by considering only accounting data. This is most straightforward when service providers are paid on a fee-for-service basis and the financial cost to payers is clearly linked to volume of services purchased. In the NHS identifying what is “paid” for services is often no easier to identify than the true social opportunity costs (and in many cases may be the same figure). Perhaps it could be argued that for the NHS the difference between “social opportunity cost unit values” and “health care system unit values” is whether the prices paid for resource have been adjusted for market failures of various kinds. How often such adjustments are made in analyses claiming a social perspective is a question we hoped to answer in the review.

RESULTS

For this version of the paper we are only able to present preliminary findings from a subsample of 15 studies in the cardiovascular area. The full range of studies identified will be reviewed for future drafts. Details of the search strategies and the number of hits are included in Appendix 1. Although we attempted to restrict the search to the major European countries, several non-European studies and articles on other European countries were picked up. The distribution of the 15 studies between countries is as follows: France (2), Germany (1), Italy (2), UK (4), Netherlands (2), Sweden (2) and multiple countries (3). One study (Casciano et al, 2001) included two countries (Italy and The Netherlands). The distribution of study types was as follows: cost-effectiveness analyses (8), cost-minimisation analysis (2), cost-benefit analysis (1), and cost comparison or cost analysis (3). The information for the 15 studies is included in Appendix 2. Each study was given a number for easy reference in reporting the results.

The first finding was that although the studies were very recently published, the presentation means that it was difficult to interpret how the costing had been done. For example, 4 studies did not state a perspective and one claimed a societal perspective but presented from the health system point of view. Of the other, 4 were from the hospital

perspective, 4 were from the perspective of the health system (social security), and 2 from that of the society.

Two studies did not indicate the base year for costing, and for three other studies the base year was assumed. In 7 cases the method of adjusting unit costs to the base year was not described. However, it was not clear whether or not the source year for unit values was the same as the analysis year. The need for uprating for inflation depends upon the perspective of the study and the type of unit costs used. If the perspective is the health system and if reimbursement fees are used (e.g. study 4), costs are to be maintained at the initial actual fee rate. This was not done so in study 4. Ideally, specific health care price indices are used such as the Aggregate Medical Consumption index for France (study 2), or the Hospital and Community Health Services Pay and Prices Index for the UK (study 12). If not available, consumer price indices from international institutions or national statistics can be used (three studies). Study 4 used a fixed annual rate of 3%, while more accurate rates derived from above mentioned sources could have been used.

Four studies (4, 7, 11 and 15) reported extensive sensitivity analysis of costs included, unit values as well as resource use rates. Of the others, seven did not report any sensitivity analyses around costs and three included one-way SA around aggregated figures (1, 4, and 14). In 4 cases we were able to identify unit values of particular resources to which the results were sensitive.

In all studies the sources of unit values were a mixture of fees, charges and costs calculated from hospital accounting data. Insofar as it was possible to determine, average costs were used. In the multi-country studies the sourcing of unit costs was variable between countries, being driven by data availability.

To provide a table with unit values and proper source references for (at least) the main resource items increases transparency and understanding of the costing process. Most studies provided unit values with sources for the main resource items only. Study 15 did very well by listing all average resource use data in one table, and all corresponding unit value data in another. This enabled to easily replicate aggregated cost results. Some studies did not provide a table and only presented aggregated results (4, 6, 8, 12, and 13).

DISCUSSION

Although not wholly unexpected, the difficulty in extracting the information necessary to address our questions was a little surprising. Cardiovascular disease was chosen for the preliminary exercise partly in the grounds of the long experience of applying economic methods in the area. However, before we can judge whether appropriate unit costs are being used we have to know the basis of the unit costs. We hope that the review of the full sample of studies in cardiovascular disease and the extension to oncology will clarify the extent of the presentational problems.

In the majority of studies the use of accounting data with a stated provider or health system perspective was potentially consistent. As long as these studies are used to address appropriate questions, and the decision-makers understand the nature of the cost information, consistency of unit costing may be sufficient. This is only half the story, however, as we have not addressed the approaches to outcome measurement in those studies. The costing should be internally consistent but it must also be in line with the way outcomes have been assessed. For now we have set a more limited objective of examining costing methods.

The absence of extensive sensitivity analysis on unit costs in published studies may reflect the absence of any major effect and/or the constraints of space in journals. In some cases it was clear that the results were dependent on a key cost value. We shall be looking for more examples of this in our extended review and will see whether any general implications for the choice of unit values. If the number of such instances is small, and the vast majority of aggregate cost variation is the result of variable resource use, the value of more detailed examination of unit costs may be small. It is interesting to note that while the scientific community is emphasising the need to take explicit account of data variability in evaluations, the decision-making community is looking for consistency and ease of comparison by producing standardised lists of unit costs.

We do not yet know enough to say that the latter approach will lead to serious mis-allocation of resources, but we feel that more careful research of the types we are proposing is needed before unit cost variability is excluded from consideration.

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Appendix 1

1. MEDLINE Database search

#1	Search oncol*[Title/Abstract] OR cancer[Title/Abstract]	411436
#2	Search CVD[Title/Abstract] OR cardiovascular disease?[Title/Abstract] OR coronary heart disease?[Title/Abstract] OR stroke[Title/Abstract] OR MI[Title/Abstract] OR m?ocardial infarction[Title/Abstract]	135167
#3	Search UK[Title/Abstract] OR United?Kingdom[Title/Abstract] OR Great?Britain[Title/Abstract] OR Wales[Title/Abstract] OR Schotland[Title/Abstract] OR Britain[Title/Abstract]	41266
#4	Search France[Title/Abstract] OR French[Title/Abstract] OR Germany[Title/Abstract] OR German[Title/Abstract] OR Italy[Title/Abstract] OR Italian[Title/Abstract] OR Spain[Title/Abstract] OR Spanish[Title/Abstract] OR multi?country[Title/Abstract]	101202
#5	Search economic evaluation[Title/Abstract] OR CEA[Title/Abstract] OR cost?effectiveness?analysis[Title/Abstract] OR CBA[Title/Abstract] OR cost?benefit?analysis[Title/Abstract] OR CUA[Title/Abstract] OR cost?utility?analysis[Title/Abstract] OR cost?effectiveness[Title/Abstract] OR cost?benefit[Title/Abstract] OR cost?utility[Title/Abstract]	32869
#6	Search #1 AND #3 AND #5	52
#7	Search #1 AND #4 AND #5	107
#8	Search #2 AND #3 AND #5	38
#9	Search #2 AND #4 AND #5	37

2. NHS Economic Evaluation Database (NHS EED) search

#1	oncolog? or cancer/All fields AND UK or Great?Britain or England or Wales or Schotland/All fields AND CEA or cost?effectiveness?analysis or economic evaluation or CBA or cost?benefit?analysis or CUA or cost?utility?analysis/All fields	226 Hits
#2	CVD or CHD or stroke or m?ocardial infarction or coronary heart disease? or cardiovascular disease? or heart disease/All fields AND UK or United?Kingdom or Great?Britain or England or Wales or Schotland/All fields AND CEA or cost?effectiveness?analysis or economic evaluation or CBA or cost?benefit?analysis or CUA or cost?utility?analysis/All fields	226 Hits
#3	oncolog? or cancer/All fields AND France or Germany or Spain or Italy or French or German or Spanish or Italian/All fields AND CEA or cost?effectiveness?analysis or economic evaluation or CBA or cost?benefit?analysis or CUA or cost?utility?analysis/All fields	175 Hits
#4	CVD or CHD or stroke or m?ocardial infarction or coronary heart disease? or cardiovascular disease? or heart disease/All fields AND France or Germany or Spain or Italy or French or German or Spanish or Italian/All fields AND CEA or cost?effectiveness?analysis or economic evaluation or CBA or cost?benefit?analysis or CUA or cost?utility?analysis/All fields	100 Hits

Appendix 2: Review of selected economic evaluations

	Title / Year	Country	Study Type and Objective	Cost Perspective (hospital, NHS, society)	Unit Cost Type (fees, charges, accounting data, prices)	Unit Cost Sources (hospital accounting data, private health insurance data, NHS data, etc)
1	Economic Evaluation of Enoxaparin Sodium versus Heparin in Unstable Angina (2000)	France	Evaluate cost of treatment with enoxaparin sodium vs unfractionated heparin in patients with unstable angina and non-Q wave myocardial infarction (CMA)	health system (public and private)	public and private sector costs	public sector: Assistance Publique-Hopitaux de Paris (aggregated accounting data); private sector: bills of unstable angina patients hospitalised in 1 private hospital
2	Economic Assessment of the Secondary Prevention of Ischaemic Events with Lysine Acetylsalicylate (LAS) (2000)	France	Evaluate economic benefits of LAS compared with placebo for secondary prevention of ischaemic stroke and MI (CBA)	social security (direct medical costs and social sec costs); society (indirect costs)	DRG costs; costs derived from macro-economic data	drugs: French market price; adverse events (gastrointestinal disorders), stroke and MI: DRG cost; outpatient cost: EPPM macro data; daily sickness benefit: Dep Social Sec; production loss: mean individual wage
3	Cost-effectiveness of Dual-chamber Pacemaker Therapy: Does Single Lead VDD Pacing Reduce Treatment Costs of Atrioventricular Block? (2001)	Germany	Compare long-term costs of single-lead VDD versus DDD pacemaker implantation in patients with atrioventricular block (CMA)	not indicated	hospital prices and charges	device and materials: hospital price; staff time: standard charges for implantation (BpFv, 1995); diagnostic investigations: standardised physician charges (GOA, 1996)
4	The Cost-effectiveness of Doxazosin for the Treatment of Hypertension in Type II Diabetic Patients in the UK and Italy (2001)	Italy and UK	Assess CE of achieving "tight control" versus "less tight control" of blood pressure in patients with type II diabetes (CEA)	government payer (NHS)	cost per health state per year consists of direct costs for lab tests, procedures, hospitalisation, visits, rehabilitation and nursing care and drugs	published sources (including articles)
5	European Comparison of Costs and Quality in the Treatment of Acute Myocardial Infarction (2000-2001) (2002)	multicountry	Compare inpatient costs and process quality in the treatment of patients with AMI in France, Germany, Italy, The Netherlands, Sweden, Switzerland, and UK (cost analysis)	hospital perspective	micro-costing focusing on reperfusion therapy, general medicine ward and critical care unit (personnel costs only)	drugs: BNF, Rote Liste, and enquiries to drug manufacturers; personnel costs: calculated from gross annual salaries (per minute)
6	The Development and Use of a Method to Compare the Costs of Acute Stroke across Europe (2001)	multicountry	Develop and use a method to compare the costs of acute stroke across Europe in patients with first-ever stroke (cost comparison)	hospital perspective	micro-costing using hospital accounting data	hospital finance departments
7	A Comparison of the Costs and Survival of Hospital-admitted Stroke Patients across Europe (2001)	multicountry	Compare costs and survival of different ways of providing stroke care in patients with first-ever stroke (cost comparison)	hospital perspective	micro-costing using hospital accounting data	hospital finance departments; consumables, drugs, and overheads derived from annual expenditures and expressed as cost per occupied bed-day; investigations expressed as price charged by relevant department
8	Cost-efficacy in Interventional Cardiology (2001)	Netherlands	Weight additional costs against effects for the combined use of abciximab and stenting as an adjunct to PTCA in diabetic and no-diabetic patients (cost-efficacy analysis)	societal perspective	intervention period: direct medical costs for initial procedure, abciximab cost, bail-out stent implantation, cost of additional stent; follow-up period: open abciximab use, revascularisations, MI	no sources

	Relevant costing information	Aggregation Level	Analysis year	Currency	Inflation (method and source)	Separate table for main unit costs?	Clear what costs include?	Sensitivity analysis on unit costs?	Results expected sensitive to which unit costs?
1	Procedure LOS is assumed similar for public vs private sector; Procedure and hospital day costs based on assumption of follow-up in public vs private being 50/50	not relevant	1996	French Francs	not specified	yes	no; min/max cost ranges given	on-way sensitivity analysis on PTCA unit cost (sensitive)	sensitive to PTCA, non-ICU LOS
2	Cost of stroke and MI are critical to determine economic justification for prevention	soc sec perspective: direct medical costs and sickness benefit costs aggregated; societal perspective: production loss aggregated	1996	FRF converted to USD	Aggregate Medical Consumption (AMC) price index, GDP price index	no detailed cost calculation in tables, but in text	yes: DRGs are total episode costs; no cost ranges	one-way sensitivity analysis on DRG costs for MI or stroke	sensitive to level of DRG costs (change over time); cost of sickness benefit and production loss depends upon estimated number of days
3	primary costs: implantation phase; secondary costs: pacemaker-related complications and re-operations (calculated from LOS)	long-term costs beyond implantation phase are aggregated (few impact, so less relevant)	not indicated; average price for materials calculated for time period between 92-97 (1 hospital)	Euro in virtual cost units	not specified	yes	yes; mean and SD for aggregated long-term costs and LOS	not included	sensitive to lead hardware and staff cost (hospital costs to a lesser extent)
4		cost per health state per year aggregated	1999 GBP and Lira	comparison in USD	annual rate of 3% to 1999 (3% estimates based on historical CPI)	no, only overview of main sources	no; no cost ranges	one-way sensitivity analysis on cost of doxazosin (much stronger impact in Italy) and discount rate (few impact); multivariate analysis on cost of hypertension tx and cost of complication states (random variation within +/-10% of estimated cost showed relative insensitivity)	
5	country-specific relative cost weights calculated when unit costs unavailable	cost for drug treatment options and intracoronary lysis aggregated; details on resource use and unit cost for procedures	assumed 2000/2001, not explicitly indicated	Euro	not indicated	yes, but some costs aggregated without details provided	yes; no cost ranges	not included	cost comparison so less relevant
6	average number of resources provided for each centre (including average staff time)	costs for non-staff categories aggregated per centre (no indication of unit costs)	1995	local currencies converted to USD	using relevant price indices from OECD and World Bank	table with hourly staff cost in each country; aggregated mean cost per category	yes; no cost ranges	not included	cost comparison so less relevant
7	average number of resources provided for each centre (including average staff time)	aggregated mean total cost per centre; ; no details on how been calculated	1998	local currencies converted to USD	using relevant price indices from OECD and World Bank	table with most important unit costs	yes; no cost ranges	impact of between-centre differences in unit costs was examined by using the unit costs from the centre with median per diem coststo calculate total costs	cost comparison so less relevant
8	incremental cost per event-free survivor	no indication of resources used per event, only aggregate costs provided	1998	Euro	not indicated	table with aggregated event costs, no details	no	not included	sensitive to drug costs for comparison stent/placebo with stent/abciximab; sensitive to stent and PTCA procedure for comparison stent/abciximab with PTCA/abciximab

	Title / Year	Country	Study Type and Objective	Cost Perspective (hospital, NHS, society)	Unit Cost Type (fees, charges, accounting data, prices)	Unit Cost Sources (hospital accounting data, private health insurance data, NHS data, etc)
9	Routine Duplex Surveillance does not Improve the Outcome after Carotid Endarterectomy (2002)	Netherlands and US	Investigate costs and effects of various follow-up strategies to determine the optimal strategies after carotid endarterectomy (CEA)	not indicated	direct medical costs for diagnostic procedures and carotid surgery (US: Medicare reimbursement rates; Netherlands: real costs of diagnostic procedures from detailed analysis in 1 hospital, charges for carotid surgery)	US: Medicare; Netherlands: hospital finance department; published papers for stroke
10	The Cost-effectiveness of Ramipril in the Treatment of Patients at High Risk of Cardiovascular Events: a Swedish Sub-study to the HOPE Study (2002)	Sweden	Evaluate if long-term treatment with ramipril is cost effective in patients at high risk of cardiovascular events (CEA)	not indicated	micro-costing using data from various sources	drugs: official drug list; hospitalisations: DRGs; visits: price list from 1 region; transportation costs from private sources; lost production cost from official statistics
11	Cost of Identifying Patients for Carotid Endarterectomy (2002)	UK	Estimate total direct program cost (1 hospital) of carotid endarterectomy in patients with possible TIA or stroke-like symptoms (cost analysis)	government payer (NHS)	NHS costs, hospital accounting data	attendance: Scottish Health Service; investigations: detailed micro-costing using hospital data; CEA: prospective costing study at 1 hospital
12	Transcranial Doppler-directed Dextran-40 Therapy is a Cost-effective Method of Preventing Carotid Thrombosis after Carotid Endarterectomy (2000)	UK	Determine if extra costs for setting up and maintaining post-operative monitoring program outweigh cost-savings in terms of reduced numbers of stroke in patients with carotid endarterectomy (CEA)	hospital perspective	not indicated (assumed hospital accounting data)	stroke rehabilitation costs: aggregation of inpatient day costs in stroke and rehabilitation units, inpatient day costs in community hospital, and standard work-up, all assumed from hospital accounting data; longer-term costs from prospective trials; cost of TCD procedure: assumed from hospital accounting data
13	Cost-Effective Analysis of Primary Infarct-Artery Stenting Versus Optimal Primary Angioplasty (The Florence Randomized Elective Stenting in Acute Coronary Occlusion [FRESCO] Trial) (2000)	Italy	Analyse the costs and effects of elective stenting compared with PTCA in the cohort of patients of the FRESCO Trial (CEA)	not indicated	hospital accounting data	drugs: not indicated (assumed hospital price); procedures and hospital days: hospital accounting data (Careggi hospital)
14	A Cost-Effectiveness Model of Alternative Statins to Achieve Target LDL-Cholesterol Levels (2001)	UK	Evaluate cost-effectiveness of the 5 statins in treating secondary prevention CHD patients to attain target LDL-C of 3mmol/l or less (CEA)	healthcare system	published sources	GP and nurse consultation: Netten; lab tests: average 3 laboratories; drugs: BNF
15	Cost-Effectiveness of an Invasive Strategy in Unstable Coronary Arteru Disease. Results from the FRISCII invasive trial (2002)	Sweden	Analysethe care of patients with unstable coronary artery disease from the perspective of costs and medical effects (CEA)	societal perspective	direct medical costs: hospital accounting data, regional cost data; indirect costs (production loss): national data	drugs: official price list; health care visits: county council southern Sweden; hospitalisations, investigations and interventions: hospital accounting data from 36 centres; production loss: statistical yearbook Sweden

	Relevant costing information	Aggregation Level	Analysis year	Currency	Inflation (method and source)	Separate table for main unit costs?	Clear what costs finclude?	Sensitivity analysis on unit costs?	Results expected sensitive to which unit costs?
9	stroke costs divided in acute costs and annual costs of major and minor disability after stroke; costs follow-up visits not included	aggregated mean life-time cost per patient; no details on how been calculated	2001	Euro and USD	not necessary (all costs 2001)	table including unit costs for procedures and stroke	no because costs are from different perspectives (real costs, charges); stroke costs unclear	not included	sensitive to duplex scan
10	primary and secondary analysis include direct medical costs; tertiary analysis also includes direct non-medical and indirect costs	hospitalisation costs were aggregated without indication of incidence rates	1999	SEK	not indicated	table including unit costs and resource use	yes	one-way sensitivity on direct medical costs based on borders of CI	inpatient DRG costs for events with highest difference in incidence rates
11	costs divided in workup cost and procedure cost, the sum of which is direct program cost		1997-1998	GBP	not indicated		yes: detailed explanation; direct and allocated costs	one-way and multi-way sensitivity analysis on costs	program cost and CEA cost is determined by number of patients using each resource; more sensitive to attendance cost
12		aggregated short-term and long-term costs; same for TCD procedure	assumed 1997, not explicitly indicated	GBP	Hospital and Community Health Services Pay and Price Index	no	no	not included	cost-saving depends more on cost per stroke than cost of program
13	first admission and follow-up: LOS and procedures counted; cost calculations included professional charges (fixed component) and costs of disposable devices and stents (variable component)	aggregated mean total cost per patient; no details on how been calculated	not indicated	USD	not indicated	no, only aggregate costs	yes, ranges for mean total cost per patient, no ranges for unit cost values	not included	stenting, angioplasty and LOS
14	calculation methods for therapy initiation and monitoring are detailed in text	aggregated mean annual cost per patient; no details on how been calculated	not indicated (assumed 1999)	GBP	not relevant if 1999	table including unit costs with source reference		one-way sensitivity analysis on physician cost (few impact)	drug costs and proportions achieving target LDL-C levels
15	cost for inpatient day is based on annual cost of running the ward, including physician's fee, divided by number of bed-occupancy days over the year	aggregated mean cost per patient for all items (can be replicated from resource and unit cost data)	2000	SEK	Consumer Price Index (Statistics Yearbook Sweden)	table including unit costs and mean resource use	hospitalisation yes, investigations and interventions assumed all costs are included; min/max cost ranegs for all unit costs	sensitivity analysis on cost: min and max costs for all centres applied	invasive procedures and inpatient hosp