Unit costs for Multi-Country Economic Evaluations

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Background

Health economists have been interested in the comparative costs of health care in different countries for many years. Much of this work has been related to health policy issues, such as the optimal organisation of service delivery, using accounting data and allocating costs using 'top-down' methods. More recently the rapidly growing use of economic evaluation to aid decisions on the adoption and utilisation of health technologies has generated different needs for cost data.

Many clinical trials of new technologies are now carried out across international boundaries, especially for pharmaceuticals. There are several reasons for this primarily related to the regulatory requirements for safety and efficacy data on new drugs. There is a strong commercial incentive for companies to complete pivotal phase III trials as quickly as possible. The rate of patient recruitment can be speeded-up by using many research sites in several counties. Pooling of clinical data between countries is not thought to present analytical problems. However, the analysis and interpretation of economic data from such trials raises many conceptual and practical issues, as there is rarely a large enough sub-sample of patients from a single country for separate analysis. For example, clinical practice patterns vary between countries leading to different patterns of resource use for treating similar patients. It is therefore possible for a product to be cost-effective in one health system but not in another. The pooled data analysis may produce a result that does not reflect the true cost situation in any of the countries. To address this problem the standard practice is to measure resource use in natural units for the multi-country patient population, ie. hospital days, diagnostic tests and so on. A variety of analyses can then be performed using different vectors of unit prices. Further adjustments can be made by modelling the resource use data to reflect practice in each country. The different approaches were well discussed by Drummond et al (1992). Given the desire of economists and decision-makers to compare the results of different-economic studies, use of consistent price vectors will enhance comparability.

Purpose

To address the need for consistent sets of unit prices for health care resources across countries, in 1998 MEDTAP International embarked on a project to collect and collate such cost data from publicly accessible sources. The aim was to produce data suitable for micro-costing exercises (based on trials or models) that adopted the 'bottom-up' approach of aggregating observed or estimated resource use. Costs based on procedures, episodes of care or case-mix groups are rarely sufficiently disaggregated for this purpose. Consequently, many of the official cost lists produced by European governments and health financing agencies do not meet the need.

There are notable exceptions, such as the community care costs published in this series of volumes in the UK, but in most countries the exact equivalent is not available.

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Approach

Cost data are available across countries from a range of sources and in a variety of forms. These include reimbursement lists based on DRGs or individual medical services, fee lists charged by providers, average episode costs from national surveys, and specific costing studies in the published literature. As the purpose of the data was use in economic evaluation, the aim was to produce unit costs which reflected the social opportunity costs of resources. Many of the sources did not provide this so the guiding principle was to use the best available data, to adjust to opportunity costs where deviations were obvious, and to seek better data over time for those items about which there was concern over accuracy. Most of the items are average costs rather true marginal costs and must be used with this in mind.

Process

The process of assembling the data is characterised in Figure 1. Having defined the purpose of the data set, and hence the scope and perspective of the costs, a list of relevant resource items was identified. The data were initially characterised by country and disease area, although experience showed that there was a large overlap between disease areas. For example, hospital in-patient costs, diagnostic tests, and clinical personnel costs were similar for many disease areas.

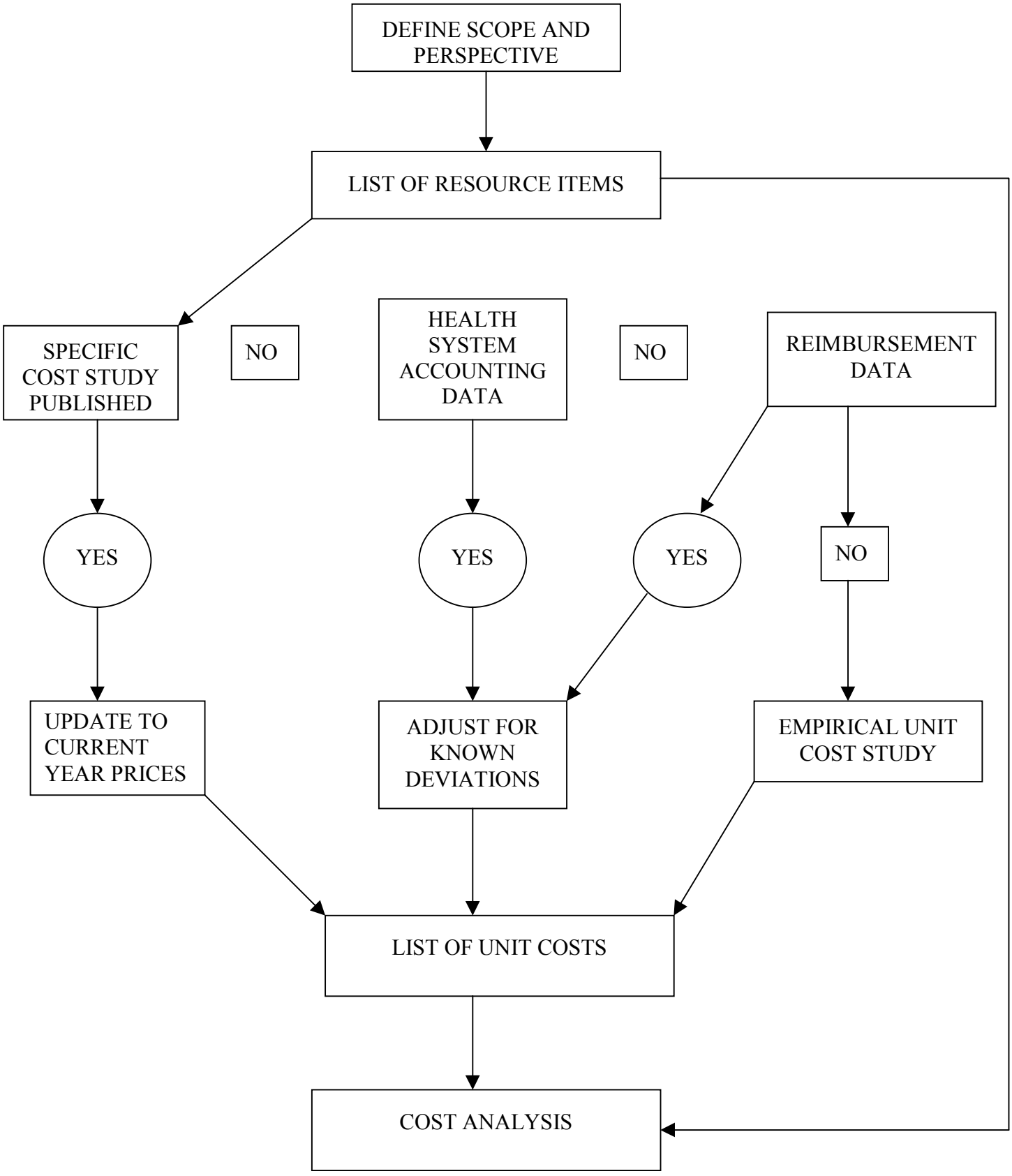
Having established the list the search for unit costs in each country began with published data - from official cost lists and published economic evaluations. In some cases data from unpublished MEDTAP studies were used. Where data reflecting opportunity costs were found these were updated to the appropriate price-base and entered into the unit cost list. Relevant published data included listings of staff salaries and price lists for consumables used in medical care. Drugs were not included on the grounds that all countries had comprehensive price listings already and that reproducing these data would be of little benefit.

In the absence of specific published costs, unit costs were adapted from health system accounting data and recommended reference costs such as those produced in the UK, Australia, Canada and the Netherlands. These were adjusted for known deviations from opportunity costs. In some countries data were available from providers' charges and health service reimbursement fee lists. These financial data may originally have reflected actual costs to the health care system, but may be adjusted over time to reflect policy priorities rather than changes in social opportunity costs. The unit costs for Germany were largely derived from reimbursement data. In the absence of unit cost data from any of these sources the only option is a specific empirical study to estimate the missing items.

Discussion

The database of unit costs was initially assembled for seven countries (US, UK, France, Germany, Italy, Spain and Sweden) and five broad disease areas (Oncology, Cardiovascular, Infectious diseases, Psychiatric diseases and Neurology) (MEDTAP, 1999). The initiative was funded by MEDTAP and a group of pharmaceutical companies. Access to the service is on an annual subscription basis. The database is under constant development with the updating of costs, inclusion of additional diseases and countries and improvement of the electronic format. As the world of economic evaluation is still changing rapidly the nature and purpose of the database is under constant review. As more countries produce recommended cost lists to accompany guidelines on economic evaluation will it remain relevant? If budget impact analysis becomes more important how relevant are the data? Is a completely separate set of health service budget

FIGURE 1 UNIT COST SELECTION PROCESS



costs necessary? These issues are reviewed by a Steering Group of subscribers and development plans agreed annually.

The database was originally seen as a way of pulling together existing knowledge, to improve the efficiency of economic evaluation activities and reduce duplication of effort. It does not claim to be a definitive picture of relative costs which removes the need for further empirical research. In fact the database will only develop in terms of accuracy and scope as more good quality costing studies are undertaken. The act of assembling the data has highlighted the areas where further work is needed and provided a convenient source of collated information in those areas where good data exist.

In all countries there is a need for better data on costs of diagnostic tests. Comprehensive price lists are available from commercial laboratories, but opportunity cost estimates from hospitals are difficult to obtain. The use of average costs for hospital in-patient days does not reflect changes in daily costs for longer lengths of stay. Other areas where the data are currently of variable quality between countries include day care procedures, A&E visits and GP consultations. The presence in some countries of community-based specialist physicians makes costing of ante-patient consultations more difficult.

Whilst the immediate objective is to meet the needs of subscribers, it is recognised that the wider the use and exposure of the data the greater the chance of improving the quality. Independent researchers may request access to the data for specific studies.

The data has been assembled carefully with the sources of each item shown and fully referenced. The main data sources are discussed in each country section, the methods of adaptation described, and the user is able to make her own judgement as to the appropriateness of an item for a particular study.

References

Drummond, M.F. et al. (1992) Issues in the cross-national assessment of health technology, *International Journal of Technological Assessment in Health Care*, 8, 671-682.

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