



Health Economics Unit achievements

R. Crott, N. Neymark* on behalf of the EORTC Health Economics Unit

EORTC Data Center, Avenue E. Mounier 83, bte 11, B-1200 Brussels, Belgium

Abstract

This article describes the activities of the EORTC Health Economics Unit since its inception in early 1994. The aim of the unit is to carry out economic evaluations of competing treatment options in common cancers in order to provide health care decision makers with useful information about the relative benefits and costs of the therapies they have to choose between. These assessments are mainly carried out by integrating collection of economic data in selected phase III randomized controlled clinical trials conducted by the EORTC collaborative groups. Studies with an economic evaluation integrated are currently becoming mature enough for analysis and several publications have resulted or are in press. Some studies with data from other sources than EORTC trials have also been performed and published. In addition, the unit has actively followed and contributed to the continuous methodological development in the field of economic evaluation of health care interventions. © 2002 Elsevier Science Ltd. All rights reserved.

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1. Background

Economic considerations have informally influenced healthcare policy decision-making for many years in the past. However, during the last decade, a number of countries have introduced legislation that make it compulsory for producers of new (drug) treatments to provide the regulatory authorities with evidence of the ‘value for money’ of their products as a condition for making these entitled to reimbursement from the public health insurance system. Such legislation was first introduced in Australia and Canada, but similar initiatives are now also seen in Europe, first in Finland and Portugal and more recently in the UK with the creation of the National Institute for Clinical Excellence (NICE). Several other European countries, such as Belgium, are in the process of implementing similar legal requirements.

Health policies in Europe and elsewhere tend to increasingly focus on cost-containment, introducing new financing modalities to that end such as capitation fees for private medical practitioners or the financing of hospitals by diagnosis-related payments. To further

rational decision-making that ensures that the limited resources available for health care are used efficiently, it will become more important in the future to carry out economic evaluations to determine the relationship between costs and outcomes of new treatments compared with the available options.

2. Aims of the Health Economics Unit (HEU)

Within this general health policy context, the aim of the HEU is to conduct economic evaluations of new cancer treatments in an international setting. These evaluations will generally, but not exclusively, be carried out in relation to prospective clinical trials conducted by the EORTC. The studies chosen for inclusion of an economic evaluation are primarily those concerning new treatment options for common cancers which, through the sheer number of patients, may have a significant impact on health care budgets, and trials analysing new expensive treatments, such as those evolving from genetic and biotechnology research.

The field of economic evaluation of medical technologies is characterised by a continuous debate about numerous methodological issues and the development and discussion of new approaches to design and analysis. The HEU follows this methodological debate closely and is also actively involved in developing such new methods.

* Corresponding author. Tel.: +32-2-774-1655; fax: +32-2-772-6701.

E-mail addresses: rcr@eortc.be (R. Crott), nne@eortc.be (N. Neymark).

3. History of the HEU

The HEU was officially established in January 1994 with financial support from the European Commission through a concerted action ‘Cost evaluation for treatment modalities in common cancers’ under the BIOMED 1 research programme. This project was later extended to three Eastern European countries (Poland, Slovakia and the Czech Republic) within the framework of the programme for Co-operation in Science and Technology with Central and Eastern European countries (PECO).

In the beginning, a principal task of the Unit was to make clinicians familiar with the very idea of determining the costs of medical treatments and comparing alternative treatment options in terms of a comprehensive and joint assessment of both their outcomes and costs. The Unit delivered numerous educational lectures to the collaborative EORTC groups and the educational activity was also presented in several publications such as those in Refs. [1–3]. Another important task was to identify new phase III EORTC trials of particular interest from an economic point of view and to motivate the study coordinators of such trials to integrate an economic evaluation as part of the trial. Upon a positive response and an interest in collecting data on the use of medical resources within a particular trial, the subsequent task was to construct data collection instruments such as separate case report forms or addition of questions to the standard clinical case report forms.

During the first 2 years of activity of the HEU, an economic evaluation was integrated prospectively in eight new phase III trials. A new concerted action contract was obtained with the European Commission under the BIOMED 2 programme and this helped finance the continuation of the activities of the unit. The 3-year project ‘Rapid assessment of the cost-effectiveness of new treatment strategies through training and coordinated data collection’ was started in April 1996. Apart from continuing the evaluations already begun and initiating new ones, the principal objectives of the project were to establish a team of cost data collectors in several European countries and to induce and aid the clinicians’ involvement in proposing, planning and coordinating economic evaluations in connection with clinical trials. The project resulted in precise descriptions by the team of cost data collectors of the health care financing and reimbursement systems of the countries involved and collection of a comprehensive set of unit costs to be used for determination of treatment costs. However, a database of unit costs must be kept up to date continuously to be of much use but this has not been possible since the termination of the BIOMED 2 project in 1999. Thus, for each new economic evaluation, collection of unit costs must be carried out anew, albeit within the structure laid out by the previous work.

Phase III clinical trials in cancer usually take several years to recruit the number of patients required and after the end of recruitment a certain time period (depending on the type and stage of cancer investigated) must pass before the data are mature enough for the final clinical analysis. As the economic analysis of a trial must await the completion of the clinical analysis, there is inevitably a lag in time before this can be achieved, so only few economic analyses based on prospectively collected data have been finalised until now. An economic evaluation is currently integrated in 18 trials, of which five have been closed according to the protocol and the clinical analysis finalised. As of October 2001, the economic evaluation of one of these trials (on advanced ovarian cancer) is currently under publication [4], while the four other analyses are still under preparation, but close to completion. From now on, trials with economic data are expected to mature for economic analysis successively at a sustained rhythm of 3–4 per year, while new trials with an economic evaluation integrated will continue to be initiated, probably at an increasing rate.

As part of the original BIOMED 1 project, a report was to be made on the available publications about the costs of cancer treatments in Europe. This report was expanded into a comprehensive survey and systematic review of the cost analyses and economic evaluations of cancer treatments published between and including 1985 and 1996. This survey was published by Springer Verlag in 1998 under the title ‘*Assessing the Economic Value of Anticancer Therapies*’ [5].

Several other projects financed by unconditional educational grants from pharmaceutical companies have also been carried out and resulted in publications from the unit. The most important of these was a retrospective cost-effectiveness analysis of the trial EORTC 22863, a trial which has set the current treatment standard for locally advanced prostate cancer [6]. This economic evaluation was used as an illustration of a new method for estimating mean survival time, which arguably is the most relevant outcome measure for economic assessments of trials with survival as the principal endpoint. An article describing and discussing this method pioneered by the unit is under publication in the journal *Health Economics* [7].

Other industry-financed projects concern an assessment of the costs of managing patients with colorectal cancer in 10 centres in five different countries [8] and an economic evaluation of irinotecan versus infusional 5-fluorouracil (5-FU) as second-line therapy in patients with advanced colorectal cancer. Finally, a questionnaire-based survey of the standard management of peripheral stem cell transplantations in breast cancer patients has been carried out and published in 2000 [9]. 162 centres from all over Europe completed and returned the questionnaire, and the survey documented

that there are vast differences in patient management and resource use patterns.

A further, recurrent activity of the unit is the arrangement of the European Conference on the Economics of Cancer. The first took place in November 1997 and the second in September 2000, both in Brussels and with important financial support from unconditional educational grants from pharmaceutical companies. Each of the conferences were attended by 250–300 persons, evenly split between academia and industry, and the number of abstracts submitted for review increased from the first to the second, although modestly. All accepted abstracts were published in supplements to the *European Journal of Cancer*, and the authors of the best rated abstracts were invited to develop their presentation into a full article aimed at clinicians and to appear in a peer-reviewed Special Issue of a medical journal. The invited papers from the first conference were published in *Critical Reviews of Oncology and Hematology*, while those from the second appeared in the *European Journal of Cancer* [10].

The conference aims to provide a forum for the presentation of original empirical studies, as well as more methodologically-oriented work concerning healthcare interventions (broadly understood, i.e. prevention, screening, treatment, supportive care, palliation, etc.) in cancer. The conference allows people with an interest in this field to meet and exchange and share their ideas, and for the HEU it represents an important opportunity to establish ties and perhaps even to form more or less formalised collaborations with other researchers working in this field. The conference has already received broad recognition as an important event, for which we regularly receive enquiries and the third conference is foreseen to take place in the autumn of 2003.

4. Methodological developments

In addition to following the methodological developments in carrying out economic evaluations of healthcare interventions closely in order to apply ‘state-of-the-art’ or ‘cutting-edge’ methods in our applied work, the HEU has taken several initiatives to also contribute actively to this development. In December 1995, a 2-day workshop with invited experts on the methodological problems of economic and quality of life evaluations in cancer clinical trials was arranged in collaboration with the EORTC Quality of Life Unit. The arrangement of the workshop was financed by a grant from the European Commission under the DG V programme ‘Economic evaluation of cancer treatment in Europe: exchange of research experience and education for practitioners in oncology’. The discussions of the workshop were reported in a comprehensive article written by the unit and published in the *European Journal of Cancer* in 1998 [11].

By the end of 2000, ongoing methodological research in the unit and ideas to be developed in the future were combined in an actual methodological research programme. After implementation and refinement of non-parametric methods to analyse the impact of uncertainty on the incremental cost-effectiveness ratio or net benefit of a new treatment, the current focus is on the analysis of various methods of extrapolating censored cost and survival data, methods of imputing missing cost data and a comparison of methods to correct for the censoring of cost data. Another important issue is how to tackle the problem of possible differences in resource use patterns and patient management between centres or countries, where the application of mixed models methods is one promising approach. Some of this methodological development will benefit from collaboration with researchers at the Department of Statistics at Limbours Universitair Centrum in Hasselt, Belgium.

In 2001, a series of biannual seminars on methodological and more practical issues in carrying out economic evaluation of health care interventions was launched with the financial support from two pharmaceutical companies. In addition to furthering the contact and collaboration between the HEU and other research centres around Europe, the purpose of these seminars is to provide European researchers an opportunity to present their work to an invited audience from academia and industry.

5. Future developments

Several other areas of work are envisioned for the future. A major challenge that will be pursued by the HEU is the optimisation of the process of collecting economic data in randomised controlled trials. This means that a balance has to be struck between completeness and exactness, which in practice amounts to focusing the data collection on items that are *a priori* thought to be the principal cost factors involved in a particular medical intervention. Whether this will introduce a bias and the importance of the possible bias is a matter for empirical investigation.

The most appropriate approach to analyse economic data collected in trials that are recruiting patients from many centres in several different countries remains another unsolved methodological problem of immediate importance for the HEU, because all EORTC trials are designed in this way. Finally, the use of the standard *QLQ-C30* questionnaire for the collection of quality of life data does not directly allow the performance of cost utility analysis, in which the treatment outcomes are estimated in quality-adjusted life-years (QALYs). The possible use of the general health status measure from the Quality of Life-Core 30 (*QLQ-C30*) instrument in

economic evaluation and the relationship between this measure and preference-based measures usually used to estimate the utility of health states remain to be ascertained.

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