

# Health economists and medical writers: Collaboration or collision?

Ruth Whittington

*Rx Communications, Mold, Flintshire, UK*

## Correspondence to:

Ruth Whittington  
Rx Communications  
Pistyll Farm  
Nercwys, Mold, Flintshire  
CH7 4EW, UK  
ruth.whittington@rxcomms.com

## Abstract

Medical writers are perceived by many health economists to be incompetent in health economics writing. Medical writers need to abolish this common perception, and so must develop an understanding of cost-effectiveness, cost-utility, and other health economic concepts. To be accepted as useful members of the publications team, medical writers must also adapt to and understand health economists and their needs. Health economics research is often poorly communicated and medical writers can make a great deal of difference in this increasingly important area.

**Keywords:** Health economic, Medical writer, HTA, Health economist

Health economics and outcomes research is becoming increasingly important for healthcare decisions and policies. Health economic data are now permeating into healthcare delivery at primary levels, with budget impact analyses used by most fund holders, and many therapeutic guidelines influenced by health economic study results. Therefore, medical writers need to understand health economic concepts and study methods in order to support effective communication of this research. Understanding the history of health economics can also make working with health economists more effective. This article provides a background to health economics as a discipline, explains how health economists are trained and therefore might perceive writers, and discusses some of the issues (with solutions) that may occur when health economists and medical writers work together. Much of this advice is based on personal experience over 20 years and so may not reflect your own perceptions! A glossary of common health economic terms and concepts is also provided after the end of this article.

## Background to health economics

The history of health economics is an interesting one: long periods of nothing much happening at all, interspersed with spurts of activity. And, considering the recent sudden world attention to it, health economics has a longer history than one might suspect. For example, the American Medical Association set up the Bureau of Medical Economics in 1931 to study all economic matters affecting the medical profession. However, the first real start of health economics as a discipline is attributed to Kenneth Arrow,<sup>1</sup> who, in 1963, compared the economics of healthcare to that of other goods and services. (Note: medical economics and health economics are synonymous, with health economics the standard nomenclature today.)

Another very important concept was Michael Grossman's model of health production, which views each individual as both a producer and a consumer of health. Health is viewed as a sort of capital, which degrades over time in the absence of 'investments' in health. Therefore, health is both a 'consumption good' that yields direct satisfaction and utility (e.g. improved quality of life), and an 'investment good' that yields satisfaction to consumers indirectly through increased productivity, fewer sick days, and higher wages. Investment in health is costly as consumers must dedicate time and resources to health, such as exercising at a local gym, which conflicts with other goals.<sup>2</sup> Grossman's theoretical approach has influenced many of the practical aspects of health economic analyses.

Before proceeding any further, it may be helpful to distinguish between health economics, pharmacoeconomics, and health technology assessment (HTA) (Fig. 1; see also the Glossary provided after the end of this article). Much of the current focus in pharmacoeconomics is in preparing submission dossiers for HTA organisations; alongside the clinical value dossier, many countries demand

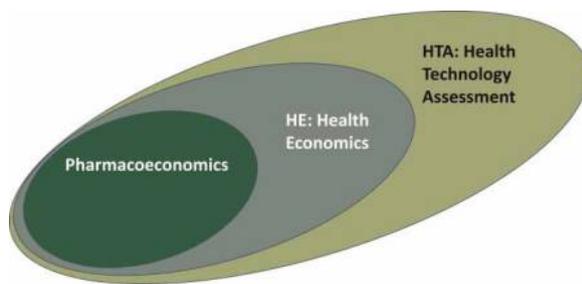


Figure 1: The interrelationship between health economic-related disciplines.

complementary health economics data. A medical writer is likely to be needed for these dossiers as well as for health economic publications and presentations.

In the health economics field, we tend to think of the USA as behind the times compared with Europe – for example, the USA does not really have a formalised system of HTA. In fact, America was a very early player in the HTA process: the US Office of Technology Assessment was founded in 1965. Ironically, it was disbanded in 1995 for political reasons, just as other countries were getting interested in HTA – but many HTA organisations are loosely based on the Office of Technology Assessment, for example, Sweden’s Council on Health Technology Assessment which came into being in 1987.

Up until about the 1970s, studies purporting to be cost analyses were few and far between (what *was* the Bureau of Medical Economics doing?). However, as can be seen in Fig. 2, the number of health economics articles increased rapidly from 2003 onwards. As usual, pharmaceutical companies’ interest in health economics (and therefore big injections of funding into such studies) took an upswing around the time the first government regulatory bodies started asking for cost data alongside clinical data. Oddly enough, it was Australia’s

Pharmaceutical Benefits Advisory Committee (PBAC) and Canada’s Agency for Drugs and Technologies in Health, which were the first to request such information in the 1980s. But because those agencies were not based in key markets, global change was very slow until the 1990s. In fact, although PBAC was requesting health economics information, it was not until 1992 that formal guidelines for reimbursement were established in Australia. The National Institute for Health and Care Excellence (NICE) in the UK did not come into existence until 1999 – but as its decision processes are transparent, and the UK is a key European market, it had and continues to have a strong influence on other countries and their set-up of HTA organisations. However, just as in the PBAC, it took some years before NICE was clear about the information it wanted: at health economics congresses an underlying complaint was that research was performed after advice from the agency, but subsequently disallowed.

Starting in the late 1990s, HTA organisations have been and are continuing to be set up worldwide. Most have different evidence requirements for the assessment of healthcare and reimbursement (and are often unclear). However, since 2005, EUnetHTA (the European network for Health Technology Assessment) organisation ([www.eunetha.eu](http://www.eunetha.eu)) has been working to set up high-quality standard information sets that all European HTA bodies can use. Although this organisation is making good progress, at present, each HTA organisation wants different information or formats, and writers and health economists should consider them as unique entities, and approach each dossier afresh.

## Understanding health economists

In the early days of health economics, the subject was taught as an adjunct to other studies; for

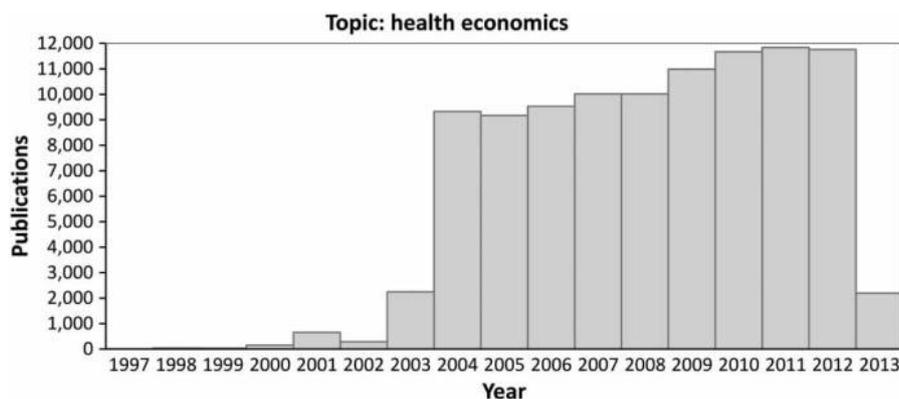


Figure 2: Growth in the volume of health economics publications. From: <http://www.Gopubmed.org>, search term ‘health economics’ accessed 12/06/2013. Reproduced with permission from Transinsight GmbH.

example, as a part of health policy, statistics, or epidemiology courses. Typically, the first health economists in pharmaceutical or medical device companies were statisticians or people from other disciplines who had an interest in health economics. In pharmaceutical and medical devices affiliate companies, you may still find that the health economics work is undertaken by medical directors or even marketing directors. Even now, there are more health economics jobs available than there are experienced people to fill them – it is a familiar lament among heads of health economics departments in the commercial sector. Although academic departments of health economics began being set up in universities in the early 1980s, these were not widely available for would-be students until the 1990s when the subject became suddenly more fashionable (at least among health economists).

A common problem with well-trained health economists is that they have rarely entered their profession to be skilled communicators. Typically, if their passion is health economic modelling, and/or they have a background in statistics or epidemiology, they will tend to believe that nobody can understand their research as well as they can, so they are likely to look on medical writers with doubt and even derision. However, with the complex statistics behind mixed treatment or indirect comparisons, for example, and more complicated analyses being developed every year, they may have justification for scepticism. This negative perception is also widespread in health economics agency researchers, who instead often use their most junior health economists as writers, with predictably dismal effect. Similarly, the number of assumptions that may have to be made to derive health economics data may cause the clinically trained medical writer to assign health economics to fantasy land. The issue, unsurprisingly, is that health economics data are often hard to obtain.

## Potential communication issues and solutions

### *Writers: Lack of health economic understanding*

Writers who wish to be successful in this field must put a great deal of their own time into mastering the basics of health economics. The attached Glossary is a good starting point; Wikipedia is useful, and there are introductory texts<sup>3–5</sup> on the market, although many of these books are designed for would-be health economists. The International Society of Pharmacoeconomics and Outcomes Research ([www.ispor.org](http://www.ispor.org)) has a great deal of free resource material on its website and also offers books,

courses, and workshops. This is, however, a mere starting point, and to understand a health economist's explanation of his or her study, the following tactics may be useful for the inexperienced writer:

- Ensure that you get a chance to review the data and study protocol (if there is one) before discussing the study with the health economist. You will need it.
- Look up similar studies in the field on PubMed and familiarise yourself with the types of information included and the key points that the manuscript or document should cover.
- Use a checklist to ensure that you know the key components of a health economic study (e.g. perspective, design, data sources, analyses done) and therefore any gaps in the information supplied. Look at the CHEERS guidelines for health economic research (<http://www.ispor.org/taskforces/EconomicPubGuidelines.asp>) to help identify sensible questions to ask the health economist researcher regarding study limitations or missing information. (This is very important as not all health economic data packages are complete at the project initiation.)

### *Health economists: Continual data adjustments*

One point about health economic studies that may not be obvious from the data package you receive is that the model may still be undergoing change as more information is added or parameters and functionality are altered. This is a common trait among health economics modellers – they like to tweak their models continuously to determine the effect on the results and thereby improve their understanding of the drivers that determine the outcomes. Therefore, the printed report from the model in the data package may not be the one from the last version of the model, and you will need to check frequently during the production of publications whether you have the final dataset. Check also the following:

- If working with a health economist who has built a modelling study in Excel, ask for the working model and check you have the latest version.
- If working with a report from other software (e.g. TreeAge or Arena), check the date on it to ensure that it is the most recent.
- Check that the sensitivity analyses are part of the report; you will need these for the publication. Few models or analyses will be accepted for publication if sensitivity analyses are not included.

### *Writers: Improving your reputation with health economists*

In my experience, many health economists have had bad experiences with medical writers on global publications teams, who may have been very experienced in the therapeutic field but less so in health economics. While a good knowledge of the disease area and available therapies is very important, it is not enough. Admitting that you are not an expert in health economic analyses is much better than trying to bluff your way through. Showing that you have done some background health economics reading and have made an effort to understand will help, especially if your questions regarding the data package are relevant. Unlike clinical trials data, you cannot assume that one health economics study design is the same as another.

### *Health economists: Ignorance of publications policies and ethics*

Publications policies and ethics are not important to a health economist, until you spend some time educating him/her accordingly. Health economists often come from academic backgrounds and will have published a few articles beforehand, usually with their research supervisor as the lead author. They therefore think that publication processes are an open book and there is not much you can teach them about it. If you have worked as a publications manager in a pharmaceutical company, you may be aware how problematic Health Economics Departments can be regarding timelines, review stages, authors, and other aspects of the publication process. Here are some ways of alleviating this problem:

- Ensure that you are familiar with your health economist's company publications policy and processes, and do your best to make them as easy for your client as possible. This will endear you to them and will potentially overcome their reaction to any silly questions you might ask about their work.

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## Author information

**Ruth Whittington's** career paths have included nursing, academia, teaching, medical writing, sales, and company ownership. As a medical writer, Ruth wrote some of the inaugural drug evaluations in the journal *PharmacoEconomics*. In her company Rx

- Scare tactics about ghost authorship and bad publicity may help.

## Conclusion

In conclusion, medical writers who make an effort to understand the field of health economics can reap a number of rewards. Apart from being constantly in demand as one of the elite, you will also be privy to some of the most interesting, provoking, frustrating, complex, and challenging projects a medical writer has to face. Once you have won the respect of health economists and their publishers, you can truly consider yourself a master of your craft.

## Acknowledgements

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## Conflicts of interest and Disclaimers

The author declares no conflicts of interest. The above article contains personal opinions and unsubstantiated assertions. To be read with tongue firmly in cheek.

## References

1. Arrow KJ. Uncertainty and the welfare economics of healthcare. *Am Econ Rev* 1963;53(5):941–73.
2. Grossman M. On the concept of health capital and the demand for health. *J Political Econ* 1972;80(2):223–55.
3. Whittington R, editor. Introduction to health economics concepts: a beginner's guide. Flintshire: Rx Values Group; 2008.
4. Rascati KL. Essentials of pharmacoeconomics. Baltimore: Wolters Kluwer; 2009.
5. Berger ML, Bingefors K, Hedblom EC, Pashos CL, Torrance GW, editors. Health care cost, quality and outcomes: ISPOR book of terms. Dix Smith M, managing editor. Lawrenceville: ISPOR; 2003.

Communications, approximately 60% of the projects involve health economics communications. Ruth is also a charter member for ISPOR (International Society of Pharmacoeconomics and Outcomes Research). Her health economics experience spans over 20 years.

## Health economics glossary

| Group of terms/term                              | Definition   |
|--|--|
| Health economics                                 | A sub-discipline of economics that is concerned with the efficient allocation of healthcare resources. It analyses the economic aspects of health and health care, and usually focuses on the costs (inputs) and consequences (outcomes) of health care interventions.   |
| HTA  | Includes the assessment of drugs, devices, medical and surgical procedures, diagnostics and the systems, processes and programmes that deliver health care. HTA is a broader concept than health economics, and is designed to assist in healthcare provision and policy decisions.  |
| Pharmacoeconomics                                | A sub-discipline of health economics which focuses solely on pharmaceutical products.  |
| <b>Difference between cost, price, and value</b> |  |
| Cost   | <p>The amount of money that has been used up to produce something (e.g. the cost of manufacturing and marketing a medicine or the cost of a specific medical device). For pharmaceutical products, the cost incorporates a number of components including:</p> <ul style="list-style-type: none"> <li>● R&amp;D expenses (for this product and others that may not have made it to market)</li> <li>● Manufacturing costs of the product</li> <li>● Distribution costs for getting the product from the manufacturer to the patient via the necessary intermediaries (e.g. wholesalers)</li> <li>● Marketing costs to advertise the availability of the product to increase demand (and, therefore, sales)</li> </ul> <p>These costs are to some degree fixed for a given product and will play a part in influencing the price.</p>   |
| Price  | <p>The amount of money that is paid for the item. The price of an item is often different from its cost and is often a reflection of its value to the purchaser. It is possible that there are a number of prices associated with any given product. For example, in the UK, the relevant prices to consider are:</p> <ul style="list-style-type: none"> <li>● Ex manufacturer price – the price paid if purchasing from manufacturer</li> <li>● Ex wholesale price – the price paid by pharmacies purchasing from wholesalers</li> <li>● Public/list prices – the cost to the public purse</li> </ul> <p>In healthcare, considerations that set the price are complex, taking into account the novelty of the product, the cost to bring it to market, the competitive arena, and the global market competition, i.e. how many other alternative products and services exist worldwide.</p> |
| Value  | <p>The decision as to whether something is 'worth' the price depends on a wide range of factors and is highly influenced by perspective. The value of any given product will be different for a payer, a prescriber, and a patient and very often, the more valued an item, the higher the price that can be charged despite the costs remaining the same. In many cases, the party who pays for the healthcare is not directly involved with either the delivery of it or the party who receives it. Therefore, with decisions about value of healthcare being made on another's behalf, it is important to consider how value is perceived by the different stakeholders in health care.</p>   |
| <b>Cost types in health economic analyses</b>    |  |
| Direct medical costs                             | Costs directly associated with the treatment or intervention (e.g. drug price, cost of physician office visits, costs of staying in hospital)  |
| Direct non-medical costs                         | Costs associated with the use of the intervention but not as part of the medical treatment, (e.g. transport to clinic, childcare)  |
| Indirect costs                                   | Costs that result from loss of time due to illness (e.g. loss of productivity)   |
| Intangible costs                                 | Costs related to health <i>per se</i> and quality of life that can be difficult to measure (e.g. impact of poor health or time away from social activities)  |
| Opportunity costs                                | The cost of an alternative that must be forgone in order to pursue the chosen intervention   |
| Incremental costs                                | Additional total costs of a healthcare product or service compared with an alternative   |
| Marginal costs                                   | Additional or reduced costs that result from slight changes to the treatment or intervention   |
| Benefits   | Economic evaluations consider both the costs and benefits of alternative courses of action. A 'benefit' in health economic terms has the same meaning as elsewhere – it simply refers to a positive or favourable outcome of the treatment. There are two ways we judge benefit and assess treatment progress and they are termed intermediate endpoints and final outcomes.   |
| Intermediate endpoints                           | Markers used to determine therapy benefit (e.g. mmHg dropped in patients undergoing anti-hypertensive therapy)   |
| Final outcomes                                   | <p>The end result of treatment. Outcomes research may simultaneously measure economic, clinical, and humanistic outcomes:</p> <ul style="list-style-type: none"> <li>● Clinical: treatment outcome, lives saved</li> <li>● Economic: costs spent and/or saved</li> <li>● Humanistic: patient reported outcomes or preference-based outcomes or utilities, e.g. QALYs</li> </ul>  |

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| Group of terms/term                      | Definition  |
|--|---|
| Quality-adjusted life-years (QALYs)      | A utility score (0 = worst, 1 = best) based on the quality of life experienced by a patient during the life-years gained from treatment.  |
| <b>Types of health economic analysis</b> |   |
| Cost-effectiveness analyses (CEA)        | <p>The most common analyses used in health economics to decide between different treatments for the same condition. In a CEA, costs are measured in monetary units, while the benefits are measured as final outcome measures or in natural units such as life-years gained or symptom-free days. The costs are then correlated with the treatment's effectiveness to calculate a cost-effectiveness ratio (CER). The lower the ratio (i.e. the lower the costs per unit of effectiveness), the more this treatment is preferred, if resources are in short supply. When a new treatment is introduced, it is often necessary to examine the additional costs that one service or programme will incur, as well as the additional effects, benefits, or utilities that it will offer compared with the existing treatment.</p> <p>This is assessed using the incremental CER (ICER), which reveals the cost per unit of benefit of switching from one treatment to another treatment. The ICER is calculated as (cost of A–cost of B)/(benefits of A–benefits of B). If the ICER is within what is considered to be an acceptable range by the payer/provider of healthcare, then there is little reason for the treatment to be rejected on the grounds of cost-effectiveness.</p> |
| Cost–benefit analysis                    | A form of economic evaluation in which both costs and benefits are given in monetary units (e.g. €, £, \$). In this way, very definite criteria can be set and compared. Any treatment or service for which the benefits are greater than the costs is considered 'worthwhile'.   |
| Cost-minimisation analysis               | Compares the costs of alternative forms of treatment or management that produce equivalent health outcomes. The goal is to find the least expensive way of achieving those outcomes.  |
| Cost-utility analysis                    | A form of CEA in which costs are assigned to health outcomes defined as 'utilities'. Utility values are numerical values assigned to measure the extent of improvements in health brought about by different treatment methods. The most commonly used utility unit is the QALY, which combines the benefits of survival and quality of life during the survival period. Healthy-years equivalents and disability-adjusted life-years are other frequently used utility values.   |
| Cost-consequence analysis (CCA)          | A variant of a traditional CEA, in which total costs and consequences are not combined to a single ratio, but instead are computed and tabulated. By not placing units of value on each component, a CCA provides a detailed breakdown of the costs and cost savings in a transparent fashion, allowing decision-makers to select the costs and outcomes that are relevant to them.   |