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HEALTH TECHNOLOGY ASSESSMENT IN EUROPE

Improving Clarity and Performance

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Abstract

This paper discusses the challenges facing health technology assessment (HTA) in Europe, based on an explicit analysis of the characteristics of an "optimal" HTA system. It has three objectives: a) to elaborate an explicit system of policy goals and the characteristics of an optimal HTA system that facilitates the achievement of these goals; b) to identify the general institutional incentive barriers (government and market failures) that prevent the attainment of an optimal HTA system in Europe; and c) to argue that evaluation of the implications of health technologies for equity and inequality in health is an essential part of this optimal system and a considerable challenge for HTA decision makers, especially as national governments realign policy toward equity goals.

Keywords: Technology assessment, biomedical, Evidence-based medicine, Evaluation research, Healthcare quality, Access and evaluation

Structures of health technology assessment (HTA) in Europe appear to have developed in an ad hoc manner with imprecise goals. This imprecision leaves providers (especially clinicians) and policy makers with wide margins of discretion. Such discretion may satisfy the individual needs of these key decision makers but ensures that social policies are nonoptimal, opaque, and difficult to monitor to ensure accountability.

The purposes of this paper are: a) to elaborate an explicit system of policy goals and the characteristics of an "optimal" HTA system that facilitates the achievement of these goals; b) to identify the perverse institutional incentives (government and market failures) that prevent the attainment of an optimal HTA system in Europe; and c) to argue that the evaluation of equity implications of HTA is an essential part of this optimal system and a considerable challenge for HTA decision makers, especially as national governments realign policy toward equity goals.

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POLICY GOALS

The three primary concerns of policy makers in European Union healthcare systems are expenditure control or cost containment, efficiency, and equity.

Macroeconomic Expenditure Control

Households, always and everywhere, fund healthcare expenditure. Resources can be extracted from households by various means: by income taxation (which may be progressive); by social insurance (disguised taxation usually in the form of a proportional tax); by private insurance, paid by employers often in the form of reduced worker remuneration; and by user charges (both the latter financial methods may be regressive, i.e., the poor may pay a higher proportion of their income than the rich). The implications for payer and provider incentives, and for equity in funding, vary according to the mix of funding methods used (35).

There is argument about the relative merits of alternative methods of control (i.e., managed growth) of healthcare spending. There are some who argue that private, for profit managed care, when efficiently regulated, can control expenditure growth (11). U.S. expenditure on health care has been limited to 13.6% of gross domestic product (GDP) for 5 years (18), but there is now considerable evidence of premia increases that are two or three times the rate of inflation (23).

An alternative paradigm is the single-payer, global budget approach. This is the most usual method of financing health care in developed countries outside the United States. The argument is that with one funding "pipe" (general taxation), and with global (cash-limited) budgets, government can control expenditure and its growth. In practice, of course, this funding mechanism cannot guarantee expenditure control: politicians may, in certain parts of the electoral cycle, manipulate expenditure to garner votes.

The evidence about these two "schools" of expenditure control is incomplete, but opinion outside the United States favors single-payer global budget. However, in Europe there is a fluctuating consensus on this issue. These fluctuations are associated with the electoral implications of expenditure controls, which disadvantage provider and patient groups. In circumstances of electoral uncertainty coupled with widely perceived underfunding, one response of providers (e.g., the pharmaceutical industry and medical professions) can be to advocate fragmented funding (e.g., user charges and private insurance), which would enhance their income but undermine cost control.

Efficiency

The discussion of efficiency by economists and quality by medical practitioners and other health professions is confusing. The dominant paradigm in clinical research is the measurement of efficacy (effect on health status as demonstrated in carefully designed and executed clinical trials) and effectiveness (effect on health status when a technology is in general use). The former is usually somewhat artificial, for example, in that patient entry criteria to clinical trials are often strict (e.g., focusing on single rather than multiple medical conditions and the exclusion of the elderly, who are the major consumers of pharmaceuticals and other technologies). Effectiveness is often poorly measured because postmarketing evaluation is usually limited.

The dominant strand in the evidence-based medicine (EBM) movement is the measurement of comparative effectiveness (i.e., effect in general use as compared to the leading alternative technology) and the design of protocols and guidelines based on the systematic review of the associated knowledge base. Sackett and colleagues argue:

> Doctors practising evidence based medicine will identify and apply the most efficacious interventions to maximise the quality and quantity of life for individual patients; this may raise rather than lower the cost of their care. (32)

This EBM perspective is a natural concomitant of the individual perspective of the physician. The tradition associated with the Hippocratic Oath is that the medical practitioners will do everything possible for the patient in their care, i.e., provide care until the marginal benefit in terms of improvements in health status is zero. Such an approach ignores social opportunity cost and the possibility that redirection of resources from the treatment of patients with low benefit from care might produce more benefit for other patients, for instance, those waiting to enter the healthcare system (19).

Many in this EBM fraternity work in relation to the Cochrane Collaboration (25). However, their position is inconsistent with that of Cochrane himself, who argued:

> Allocations of funds and facilities are nearly always based on the opinions of senior consultants, but, more and more, requests for additional facilities will have to be based on detailed arguments with "hard evidence" as to the gain to be expected from the patient's angle and the cost. Few can possibly object to this. (5)

Cochrane's position of identifying, measuring, and valuing the costs and benefits of competing technologies is an economic one: economics-based medicine, which is, of course, an appropriate form of EBM if society's goal is maximizing population health gain from a fixed budget. This approach requires the economic evaluation of diagnostic and therapeutic interventions, rehabilitation, social care, and palliation. This social perspective, favored by both public health practitioners and economists, facilitates the targeting of scarce healthcare resources on those patients who gain the most per unit of cost. Cost-effective allocation of resources ensures, with a given global budget, the maximization of improvements in population health.

This economic evaluation would, in principle, provide data to inform efficient choices in health care. In practice the quality of economic evaluation, like that of clinical evaluation, is uneven (12;20;29), even though the principles have been nicely articulated and refined over 25 years (10;14;36).

What does the purchaser of HTA want in terms of data to inform decisions? If the objective of European Union (EU) healthcare systems is the allocation of resources to maximize improvements in population health, efficient purchasing of HTA requires the economic evaluation of health care and health policy investments, an approach that involves, but is not just involved in, the assessment of comparative effectiveness. Evaluation of safety and comparative effectiveness alone is insufficient, except as a means of identifying and evaluating therapies that harm or have no value for patients. As most interventions appear to have some (often small) benefit for patient health, HTA investments should be made on the basis of acquiring knowledge of the costs and benefits of alternatives. Without such data, purchasers in insurance (social and private) and state-run healthcare systems will be unable to allocate resources to maximize improvements in population health.

Equity

Most societies do not appear to be interested in efficiency alone. Concerns about equity are ubiquitous and poorly articulated. For instance, the policy concern may be equity in the distribution of financial resources between geographical regions (equity in inputs). Or it might be defined as equity in health (equity in outcomes) or in utilization of health care (equity in access) or in rules for appropriate decision making (equity in procedures) (40). Since so many definitions are possible, clarity in equity objectives is essential. Once clear equity objectives have been set, HTA can then be designed to measure them.

In principle, what is needed to inform investment is an equity-weighted measure of outcome (an equity-weighted quality-adjusted life-year measure). For example, one possible equity goal is to reduce inequalities in health over the life cycle (e.g., between social classes,

ethnic groups, generations, disabled, and able-bodied). The relevant policy consideration is then how much efficiency (in terms of population health gain) is society prepared to forgo to reduce inequalities in lifetime health (38).

However, the articulation of explicit rationing criteria for any country is noticeable by its absence. Rationing has been defined by A. Williams (personal communication, 1998) as occurring when someone is denied (or simply not offered) an intervention that everyone agrees would do them some good and which they would like to have. He has suggested the following rationing principles (37):

1. To treat individuals equally and with due dignity, especially when near death;
2. To meet people's needs for health care as efficiently as possible (imposing least sacrifice on others); and
3. To minimize inequalities in the lifetime health of the population.

The last principle is one of several found in the Swedish report on health inequalities (34) and implies the application of Williams' "fair innings" arguments (38). This approach suggests that resources should be transferred to the inefficient treatment of the young, the poor, and the chronically ill so that their lives are augmented and life cycle inequalities are mitigated. Furthermore, this approach highlights the uncomfortable yet inescapable consequence of this equity policy that resources must be transferred away from efficient treatment of the elderly and others who have had, or can expect to have, a reasonably long and good-quality life.

This approach is contentious, but has merit. It raises questions such as:

- In depriving the elderly (as well as the healthy and the wealthy) of resources to transfer to the young (and the chronically ill and the deprived), what principle would be used?
- In allocating health transfers to the young, the chronically ill, and the deprived, what principle would be used?
- What political mechanisms would be used to determine the degree of transfer in the EU, where transfers are implicit rather than explicit?

OPTIMAL HTA

The purpose of HTA is to facilitate the allocation of resources in relation to the goals of the healthcare policy maker. More wide-ranging use of HTA may help to improve cost control strategies, through evaluation of how far "technologies" such as competition or global budgets facilitate the better management of expenditure inflation. However, the principle purpose of HTA is to inform efficient and equitable allocation of resources. The impact of more systematic use of HTA on overall cost control is always uncertain, since good HTA will identify underutilization as well as overutilization and has ambiguous effects on price determination.

This applies to private healthcare systems governed by competition and the price mechanism as well as to public healthcare systems. Insurance firms can use HTA evidence to help define the package of healthcare coverage that achieves their commercial goals. Generally, these commercial goals may tend to focus less on equity and more on efficiency (for customer subgroups rather than the population at large) than the goals of public healthcare organizations. However, once purchaser goals have been defined, it then becomes possible to define an optimal HTA system that provides scientific information about how best to achieve those goals.

The characteristics of an optimal HTA system are:

- A complete range of health technologies are identified and prioritized as candidates for evaluation, including healthcare and nonhealthcare policies;
- Health technologies are evaluated comprehensively, in terms of an explicit system of policy goals (i.e., total costs, efficiency, and equity);
- Health technologies are evaluated early and routinely; and
- HTA effort is itself prioritized according to its costs and benefits in terms of the achievement of policy goals.

The achievement of health policy goals requires consideration not merely of clinical technologies but also the broader "technologies" of organizing health care and improving health through interventions outside the healthcare sector. At present, however, the focus of HTA in Europe is on limited evaluation (clinical effectiveness) of "what doctors do to patients," rather than all policies introduced by decision makers in a range of functions both inside and outside the healthcare sector. In other words, evidence-based policy as well as evidence-based medicine are important parts of economics-based medicine.

To the extent that healthcare systems have identified the need to evaluate service and organizational issues, as in the U.K. National Health Service (NHS), this has happened very recently and investment is minimal: at the time of writing, the management structure for this program has been established, but its budget to fund research is zero! Some policy makers recognize the need to increase investment, but this recognition is absent in many parts of Europe, particularly where the narrow medical paradigm continues to dominate (e.g., in Germany).

Health technologies should be evaluated comprehensively. HTA evaluation that focuses on only one narrow part of the system of policy goals cannot achieve those goals. Currently, much research effort is focused on HTA evaluations of safety and clinical effectiveness, which are incomplete methods for attaining the goals of efficiency and equity. Furthermore, comprehensive evaluation should be performed early and routinely, making explicit and systematic use of "soft" forms of evidence and expert opinion in modeling data when "hard" evidence is not yet available. Evaluation of efficiency and equity should not be left until after the introduction and diffusion of a technology. Once an effect, however small, is identified, consumer and producer groups may adopt the technology, and the results of economic evaluation, delivered later, may be ignored.

Finally, HTA and the wider research effort should be prioritized according to costs and benefits in achieving policy goals. It is possible to distinguish primary from secondary research. Primary research generates the data that is later used in more comprehensive secondary HTA. Primary research includes studies of the determinants and patterns of disease and of technology use, as well as studies of the effects of health technologies using experimental or observational methods.

Currently, much primary and secondary research is prioritized according to the perceived importance of the problem (e.g., the burden of disease) rather than the potential benefits of additional information in helping decision makers find solutions that will achieve the policy goals of equity and efficiency. This is a particular danger with primary research, since it is often far removed from a specific policy context in which the results would be used.

INCENTIVE BARRIERS TO OPTIMAL HTA

What are the institutional incentives that prevent attainment of optimal HTA? There are numerous different kinds of incentive barriers, which will vary according the particular social, political, and institutional circumstances involved. However, four quite general and fundamental incentive problems can be identified on both demand and supply sides of the HTA market.

Demand-side incentive barriers:

1. Doctor incentives to provide the best care for their own patients, regardless of the costs and consequences for others.
2. "Expert" incentives to avoid accountability and to prevent the production and use of evidence from challenging decisions.

Supply-side incentive barriers:

3. Provider incentives to supply selective evidence to market their products.
4. Researcher incentives to supply interesting rather than integrated and focused research.

One way or another, these incentive barriers create a wide range of practical difficulties and frustrations for researchers and practitioners (e.g., lack of resources or staff or methodologies for research). Unfortunately, practical difficulties and frustrations tend to receive more attention than more fundamental incentive problems that underlie the practical difficulties associated with the translation of evidence into practice (15).

Doctors: The Expert Judges of Need

Doctors, who over the centuries have been given the task of judging the relative needs of patients, have emerged with much mystique and power being acquired by them in the 20th century. The reluctance of this group to move from opinion to evidence-based practice is demonstrated by the slow application of randomized controlled trial (RCT) techniques, articulated by Bradford-Hill in the 1930s and popularized but relatively ignored, for a further decade or so, by Cochrane (5). While Cochrane accepted the economic paradigm (above), his colleagues focused on HTA investment in RCTs of clinical effectiveness, and there remains a conflict between the clinical and economic paradigms.

The explicit judges of need—doctors—feel challenged. The individual perspective of potentially providing care until benefit is zero is now constrained by the social perspective of opportunity cost and population health. However, such constraints still sit unhappily in the context of the Hippocratic tradition, medical school training, and career reaccreditation. In Europe doctors are being required increasingly to be the rationing agents of society and to allocate resources and access to care on the basis of economics-based medicine (i.e., efficiency). This pressure is uncomfortable for providers, in part because of the failure to articulate equity goals and equity-efficiency trade-offs. The old-fashioned clinical effectiveness perspective is redundant, but this is yet to be replaced by the evaluation of well-articulated efficiency-equity objectives.

The Accountability of Experts

Doctors, managers, politicians, and other expert decision makers all have to be accountable for their governance of the processes by which evidence is generated. They also have to be accountable for their own performance in relation to the evidence base. The patchy nature of clinical accountability in the United Kingdom was amply demonstrated by the recent Bristol tragedy, where professional mores prevented timely evaluation and remedy of avoidable mortality in pediatric cardiac surgery.

Yet the accountability of practicing clinicians is rigorous compared with that of policy makers responsible for initiating new forms of healthcare service, delivery, and organization. The remarkable reluctance of practitioners in the areas of HTA and health service research to re-deploy their skills in the design and application of experimental techniques to understand the rapid development in incentive structures, organizational structures, and training/reaccreditation methods is impressive. For instance, everywhere in the world reform of the skill mix in the delivery of health care is vigorous, uncharted, and poorly evaluated. A review of the literature shows that most experimental studies of doctor-nurse skill mix

combinations took place before 1990 in trials of often inadequate design (30). The confidence (and arrogance) of practitioners and reformers to change labor market policies without evidence and subsequent evaluation is remarkable.

But no more so than the remarkable capacity of healthcare reformers to alter service structure in the absence of evidence. In Britain both the Thatcher and Blair governments did not wish to be "confused" by the facts! Large Parliamentary majorities facilitate major structural changes of uncertain value: few questioned the failure to evaluate such social experimentation. As a consequence GP fund holding and the purchaser-provider split are "sold" internationally as solutions to imperfectly articulated problems. Such "sales" should be accompanied by acknowledgment that the evidence base for their advocacy is absent: their effects on efficiency and equity are unknown (17;22;31). Similar reform ventures worldwide have been devised with little reference to the knowledge base and have not been evaluated systematically to enhance the size and quality of that base. Indeed, much reform effort involves the "reinventing of wheels" already demonstrated to be inadequate in the past, e.g., reform efforts in New Zealand have been described as "jumping on the spot" (8).

The failure of HTA investors to recognize the need to explore such issues is noteworthy. The development of HTA appears to have been medically driven and focused on how to treat the patient after diagnosis. Other health service researchers have "coat-tailed" this growth industry in research, even though potentially the scope of health economics and health service research is much broader (21;27). Without a broader research into incentive and organizational issues with appropriate use of experimental methods, the neutrality of the agent of society in the resource allocation process in health care (i.e., the doctor) cannot be demonstrated.

HTA as Marketing

Suppliers of health care (pharmaceutical firms, medical equipment firms, and doctors) have a commercial incentive to provide selective and biased information to market their products and services (13). But why is there no thriving market for independent suppliers of unbiased information about the quality of health care (as there sometimes is in relation to consumer products such as cars, homes, personal finance, and personal computers)?

One possible explanation is that users of HTA evidence (managers and senior consultants) find it difficult to assess the quality of that evidence, because they are not themselves HTA practitioners. So, like buyers of used cars, they may be wary of "lemons" (i.e., poor-quality products masquerading as high-quality ones) and spurn the high-cost, high-quality end of the HTA market spectrum (2). In other words, lower quality HTA evidence may tend to drive out more costly, higher quality HTA evidence, and the free market for high-quality HTA may tend to unravel. As with used cars, however, one would then expect private sector mechanisms to emerge that help deal with this problem, such as large dealerships in HTA with a reputation to keep up, or perhaps even "warranties" guaranteeing compensation if the quality of the HTA product is later shown to be lacking.

Another possible explanation, therefore, is that independent HTA consultancy firms face substantial barriers to entry into the HTA industry, since healthcare suppliers control access to the primary data (e.g., trial data about costs and outcomes) needed to perform HTA and will use this power to "capture" private firms that attempt to play this role.

Academic Incentives

Health researchers win peer approval, promotion, tenure, and status by investing in the skills and expertise to produce research that is original and technically proficient rather than research that helps healthcare purchasers achieve their goals. This tension between academic merit and practical relevance tends to reduce the supply of independent researchers with the skills and motivation to undertake HTA. This inflates the costs to buyers

of commissioning independent HTA evaluations that have both scientific rigor and practical relevance.

However, the question again arises: why cannot private HTA consultancy firms produce HTA that is independent, rigorous, and relevant? As before, the problem appears to be one of barriers to entry and "capture" by healthcare suppliers. A big challenge facing HTA is the identification of an efficient role for private consultancy firms, which guarantees independence from both healthcare suppliers and from perverse academic incentives, while at the same time maintaining a strong profit motive to provide high-quality, integrated, and relevant HTA evidence. A step may be for greater openness in the peer review and explicit quality rating of organizations, as happens, for example, in bond markets (29).

EQUITY: A NICE CHALLENGE FOR HTA

The biggest challenge facing HTA in Europe is the measurement and valuation of equity and its incorporation into assessments. In the past, healthcare reform has often focused on efficiency (e.g., managed care, internal market reforms involving the purchaser-provider split, and better clinical governance). Such reforms often ignore equity and/or fail to integrate efficiency/equity trade-offs into policy and the design of HTA. As European nations realign healthcare policy to pursue equity goals, however defined, the scope and nature of HTA will be altered radically.

Evaluation of Interventions to Reduce Health Inequalities

For instance, the British government might decide to ignore income and wealth (financial) equity because it has a low tax policy, but to reform the resource allocation formula so that funding is targeted at reducing inequalities in health within a policy framework of efficiency. This decision would require HTA activity that develops the knowledge base about the effects of health technologies on different social groups. For instance, coronary artery bypass grafts (CABG) may give less health gain to the poor, who smoke more, than to the middle classes. Concern with inequalities of this kind would imply more investment into HTA that evaluates how alternative smoking cessation policies can reduce differences in CABG outcomes.

It would also require investment in HTA concerning, for instance, why the poor and middle income groups have similar levels of utilization of primary care in Britain, but there is a class differential in referrals to hospitals. What is the technology (the primary care production function) that generates this result, and what is the relative efficiency of alternative methods of altering provider and patient behavior? Some of those methods are known to be inappropriate but are continually reinvented by self-interest groups who ignore the evidence base. For instance, Stoddart et al. (33) reviewed the literature on user charges and concluded that such proposals "reduce to misguided or cynical efforts to tax the ill and/or drive up the total cost of health care while shifting some of the burden out of governments budgets." The relative failure to deploy HTA resources to the evaluation of these and other mechanisms means that those societies that wish to pursue equity-orientated policies have a very limited knowledge base to exploit. As a consequence, they are open to the siren calls of well-motivated advocates of uncosted and unevaluated policies, e.g., policies to reduce health inequalities (1;2;4;6;39).

Determinants of Access to Health Care

For most Europeans, access to health care is determined by the principle of need, defined as ability to benefit. However, the evidence base about the relative cost-effectiveness of technologies remains poor, and differences in use remain inadequately "mapped" and explained.

A significant minority of Europeans have private insurance that in part or in whole funds their health care. The identification and evaluation of the criteria that determine access to care in this sector is relatively unexplored. Are there more unnecessary or low health gain technologies used in the private sector and, if so, why? Or, given that clinical providers often work in both the public and the private sector in some European countries, is access and utilization similar across these sectors?

With the development of the Internet and consumer lobbies, the information levels of patients and caregivers are improving, reducing the asymmetry of information between patients and health professionals. The impact of this on access and utilization is as poorly evaluated as the development of electronic means of diagnosis and treatment (telemedicine). For instance, the development in Britain of a nurse-led national telephone health advice network (NHS Direct) will affect the role of the primary care gatekeeper and emergency admissions to hospitals. The effects of this consumer revolution on safety and effectiveness are being evaluated (16). However, the effects on inequalities of access to health care, and the resulting population health outcomes, remain to be explored more fully. For example, if the poor cannot access information technology, how will their interests be protected and enhanced in the face of middle class use of such services?

Equity-Weighted Efficiency

In all healthcare systems providers pursue equity objectives at the expense of efficiency. For instance, providers care for low-birth-weight babies with inefficient technologies that preserve young people to live severely disabled lives, with the costs of such choices often being very high for families and the budgets of insurers or the state. Choices such as these are exercised unequally (i.e., they vary between practitioners and localities) and are implicit rather than explicit, with inadequate participation of well-informed caregivers.

If public preferences about such equity issues were more explicit, policy makers would have to alter appropriately the orientation of HTA and the behavior of purchasers and providers. One simple method of improving consistency and accountability in the pursuit of equity goals would be to introduce a framework for setting out the equity implications in HTA. This could specify requirements for analyzing age, social class, and other key patient characteristics from an equity point of view. This would also facilitate the recording and monitoring of equity considerations actually used in purchasing decisions.

A more radical step would be to require quantification of equity considerations. One possibility is to use a simple points system based on expert opinion. Some public healthcare systems, including New Zealand and the United Kingdom, are already beginning to experiment with systems of this kind for particular specialties (24). Another possibility is to experiment with the more sophisticated tools for quantifying equity considerations that health economists have been developing (38). Even if equity evidence is soft, it can still help improve the consistency with which equity considerations are applied.

To enhance the legitimacy of measures of equity and to prevent them reflecting the prejudices of unaccountable expert groups, the views of the general public should be embedded from the start. There are broadly two ways of obtaining public views for this purpose: a) questionnaires; or b) more deliberative modes of consultation, such as small group discussions and citizens' juries (28). Instinctive public opinions expressed in questionnaires may differ from more considered public opinions (7;9). Given the complex and unfamiliar nature of the issues regarding use of economic evidence in healthcare purchasing, it can be argued that considered public opinions are the appropriate ones to use in this context.

However, perhaps the main potential benefit of equity evidence—an increase in transparency and accountability of decisions—can only be realized if that evidence is published. Publication of equity evidence is likely to be resisted by decision makers for many reasons; for example, health care suppliers have a strong vested interest in remaining silent about

any unfavorable equity implications of their products, and the government and medical profession alike fear the effects on practice that might be provoked by more explicit public debate on the rationing of health care to achieve equity goals.

An evidence-based approach to achieving equity goals would help: a) to ensure that policies achieve intended equity goals; b) that equity considerations are dealt with consistently; and c) that policy makers are held accountable for the policies they implement and the equity claims they make for them, by evaluating practice in relation to socially agreed goals. However, the articulation and measurement of equity-efficiency trade-offs remains frustratingly sidelined, even though providers and others pursue social policies that are clearly equity-orientated and that impose significant opportunity costs.

POLICY IMPLICATIONS

The phrase "health technology assessment" is over 20 years old, and health economics has evolved as a subdiscipline over 30 years. However, both activities have developed narrowly, driven apparently by narrow medical imperatives rather than broad economic and public health perspectives that emphasize population health, equity in the distribution of health, and the development and evaluation of technologies across the whole range of healthcare and health production activities.

This narrow development of research and the knowledge base has resulted in the issues central to the efficient and equitable purchasing of health care being ignored by HTA. Two policy challenges for HTA in Europe are particularly pressing: a) the need to broaden the focus of HTA beyond clinical technologies and toward the wider "technologies" for organization and delivery of care; and b) the need to start evaluating the implications of health technologies for equity and inequality as national governments realign policy toward equity goals.

These challenges have been recognized in some countries, for instance, the United Kingdom and the United States. However, generally in Europe they continue to be ignored relative to the confines of the narrow medical imperative. If the medical paradigm alone continues to drive the research agenda, healthcare purchasing will be distorted and European societies will not achieve their social goals.

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APPENDIX 1

ASTEC: A BRIEF DESCRIPTION

ASTEC is a multicenter research project on the evaluation of health interventions in the European Union (EU), funded by the European Commission and run by the London School of Economics (LSE Health). The research is being done by a network of partners based at universities, HTA agencies, and Cochrane Centres throughout the European Union.

Title: Analysis of **S**cientific and **Tec**hnical Evaluation of Health Interventions in the European Union (ASTEC)

Outputs:

- *Methods report:* A review of methods and systems for evaluating health interventions, inside and outside the healthcare sector;
- *EU country reviews:* Reviews of current health evaluation initiatives in all 15 EU member states;
- *Non-EU case studies:* Studies of significant health evaluation initiatives in Australia, Canada, Japan and the United States; and
- *Proposals:* Proposals for coordinating health evaluations carried out in different member states

Methods: Literature review, contact with stakeholders, and common case studies.

Key research questions:

- Who commissions health evaluations in public, private, and charitable sectors?
- What are the current initiatives for evaluating health interventions?
- What evaluation topics receive most attention and why?
- What evaluation methods are used by researchers and why?
- What mechanisms are used to control the quality of evaluations?
- What incentive mechanisms are used to implement evaluation evidence in decisions?
- What influence does evaluation evidence have on decisions and why?

Timetable: A final report is due for completion by April 2000.

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