

# IMPLEMENTING THE FINDINGS OF HEALTH TECHNOLOGY ASSESSMENTS

## *If the CAT Got Out of the Bag, Can the TAIL Wag the Dog?*

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### Abstract

**Objective:** To explore whether more could be done to increase the implementation of health technology assessment (HTA) findings.

**Methods:** A literature review was undertaken to identify the main barriers to implementation, the mechanisms that influence the diffusion and use of health technologies, and evidence of the successful implementation of findings.

**Results:** Numerous barriers to the implementation of HTA findings exist at the public policy, health-care professional, and general public levels. Several mechanisms for influencing the use of health technologies exist, and there are some examples of findings being implemented through these mechanisms. However, there are also concerns about the aggressive implementation of findings. A balanced approach to the implementation of HTAs is required.

**Conclusion:** The main elements of a successful implementation strategy are: a) defining a clear policy question; b) defining a clear research question; c) making recommendations commensurate with the evidence; d) identifying the implementation mechanism; e) paying attention to incentives and disincentives; and f) clarifying the roles and responsibilities of the various parties. Further research is also required into several aspects of implementation.

**Keywords:** Cost-benefit analysis, Diffusion of innovation, Health technology assessment, Motivation

Considerable amounts of scarce resources are invested in health technology assessment (HTA). Hence, it is important to maximize the benefits from HTA activities. Most researchers involved in HTA argue that the ultimate objective of their work is to improve decision making about the diffusion and use of health technology. However, in practice it is not clear which HTA findings impact upon decision

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making, or how they do so. This paper investigates what mechanisms promote, and what mechanisms reduce, the influence and diffusion of HTA.

Tugwell et al. (33) characterize HTA as an iterative process whereby “synthesis and implementation” is a key step in the Technology Assessment Iterative Loop (TAIL). One of the objectives they report is to make recommendations about optimal facilities planning for diffusion of technology. The field of HTA has made considerable progress over the past 20 years, particularly in respect to earlier stages in the TAIL, such as developments in the methods for assessing the efficacy, effectiveness, and efficiency of health technologies (13;29).

In the latter stage of the TAIL, i.e., synthesis, implementation, monitoring, and reassessment, concerns continue about the lack of impact of HTA findings. In the early days of HTA, Drucker (8) noted that, despite attempts to gather reliable evidence on the diagnostic accuracy, clinical efficacy, and cost-effectiveness of the computer-assisted tomography (CAT) scanner, the technology diffused widely before such evidence was available; that is, the “CAT got out of the bag,” despite attempts to inform its rational diffusion.

More recently, dissemination and implementation of HTA findings have been the subject of a EUR-ASSESS project report (15). In particular, this report concentrated on dissemination, considering the barriers to change and the effectiveness of different dissemination activities. The report identified strategies for informing decision makers and implementation, which it defined as “a still more active process, including interventions to reduce or eliminate barriers to behavior change and/or activities to promote behavior change.”

The objective of this paper is to explore whether more could be done to increase the implementation of HTA findings; that is, if the CAT did get out of the bag, what can be done to ensure that, in the future, the TAIL wags the dog? First, the main barriers to the implementation of HTA findings are reviewed, and examples of the mechanisms available to implement HTA findings are given. Several concerns about the more aggressive implementation of HTA findings are discussed. Following this, the elements of a good implementation strategy are outlined, a research agenda on implementation is proposed, and finally, some policy implications are presented.

Within the broader field of HTA, the emphasis here is on HTAs that include an economic evaluation. The reasoning is that these studies also include all the clinical data, yet often raise additional concerns among practitioners because of the inclusion of cost considerations.

## **BARRIERS TO IMPLEMENTING HTA FINDINGS**

There are a number of key decision makers in the healthcare system, each of whom could place obstacles in the way of implementing HTA findings, namely, public policy makers, healthcare professionals, and the general public. This section, based on the work undertaken in the EUR-ASSESS report (15), analyzes barriers to implementation according to each of the three sets of actors in the healthcare system.

### **Barriers to Implementation at the Policy Level**

***Differing Perspectives.*** At the health policy level, factors that relate to the decision-making environment are significant barriers to behavior change. Perhaps the most fundamental issue obstructing the implementation of HTAs is the divergence between the public policy and the HTA framework. In the public policy field, the environment tends to be action-orientated and concerned with what is practicable,

given constraints such as time and finance. Decisions must be made often, over a relatively short period of time, and of course, unequivocal answers to policy questions are best. In contrast, much research is conducted over a long time horizon and involves uncertain outcomes. The question is to what extent do HTA findings meet the objectives of the decision makers? Different tools are required to disseminate and communicate HTA findings, depending on the audience targeted.

Both the objectives and the approaches to work differ between the decision makers and the HTA researchers. While the latter group argue, for example, that the relative cost-effectiveness of a treatment is an important measure for decision makers to consider, in practice purchasing choices may reflect value based on the prestige of the treatment (21). As Lomas (20) argues, "Where you stand depends on where you sit." The perspective taken in the HTAs also influences the use of study findings. For instance, an assessment based on a societal perspective would include a broader approach to the measurement and valuation of costs and effects compared to a patient or a hospital perspective.

The potential for lack of fit between researchers' and policy makers' work is explored by Battista and Jacob (2), who argue that there is a distinction between the scientific and policy paradigms and that this has implications for the way that researchers conduct their investigations. While the positivist approach to science means that every assertion must be verifiable, policy making is an interpretative process whereby numerous dimensions are combined at the broad picture level. A major task for those conducting HTAs is to synthesise and channel the information derived from scientific practice into the public policy domain.

In a pluralistic decision-making process, research evidence competes with other types of information for the attention of policy makers, and this may conflict with recommendations proposed by other groups. An example is the failure of the Oregon experiment to impact upon the healthcare administration (3). In part this resulted because the methodology used led to the prioritization of healthcare provision in a way that did not secure political or professional acceptance. Maynard (24) provides another example. Within the cancer field a highly mobilized group of patients and medical professionals campaign to promote the philosophy that much cancer is avoidable and curable. Although this may be true, rarely is effectiveness demonstrated or the trade-offs required to produce health improvements fully explored.

***Timeliness and Accessibility of HTA Findings.*** Timeliness is also an important barrier to the implementation of HTA. HTA needs to be conducted early in the life cycle of medical technologies and repeated as new data becomes available. Repeating HTAs can be a costly experience. The concept of the value of information is illustrated by Claxton (5) in relation to the regulation of new pharmaceuticals. The additional benefits of early assessments, repeated at a later date, need to be compared with the extra costs. However, such an approach would avoid the difficulties encountered in changing behavior once interventions are in widespread use (30).

An example that illustrates the importance of timing is provided by Ross (28). In an interview of 34 Australian decision makers, it was found that the highest number of respondents within the study (47%) perceived the decision-making process as the most important barrier to using economic evaluation information. It was argued that in pursuit of political expedience, decisions were frequently

taken at short notice when information was not available and when there was insufficient time to commission a new study. Similarly, the time barrier to behavior change was discussed by Soumerai and colleagues (32). In their study on the determinants of change in policies to control Medicaid policy, they found that policy makers were given a very limited time frame, in some cases only one week, to resist change.

Clearly, if the TAIL is to wag the dog, HTA must be available, readily identifiable, and accessible. Policy makers' receptivity to behavior change is, in part, a reaction to the accessibility of the HTA (11). Limited research knowledge by policy makers reduces the extent to which available economics information may be utilized. Indeed, Ross (28) found that 26% of interviewees expressed the concern that study findings may be misunderstood because the language used by academics was difficult to understand, and that this was a significant impediment to the use of economic analysis results. As these findings also suggest, researchers influence the use of their work by the way they communicate their ideas.

**Reliability of Study Findings.** Lack of study credibility is another important obstacle to the use of HTA. In a national telephone survey of 51 managed care pharmacy directors, reasons for not using external drug assessments included concern about the study sponsor and the potential for bias, as well as the applicability of the results to the managed care plan's population (22). HTA results are system-dependent in the sense that they can only be as good as the data on which they are based and from the perspective and context on which they were assessed.

The reliability of study findings also depends on the quality of the research. The gold standard for evaluating the efficacy of healthcare interventions is the randomized controlled trial (RCT). However, in regular practice effectiveness is paramount. Although RCTs have high internal validity, they are conducted under artificial, idealized conditions, so estimations have to be made about the effectiveness of the interventions as used in regular clinical practice (6). The generalizability of results at key decision points may be debatable.

Therefore, to make progress, often an element of judgment is required in the absence of adequate data. In such situations it may be possible to quantify the extent of any uncertainty by examining the sensitivity of study results to key assumptions (economists call this approach "sensitivity analysis" [13]). Also, the lack of data at key decision points reinforces a comment made earlier; that is, HTAs may need to be repeated as better data become available.

**Incentives and Uncertainties.** Organizational structure also affects behavior change. The incentives that motivate actions differ within the environments of researchers, HTA agencies, consultancies, and public policy makers. For example, observing the two extremes, within the academic arena the reward structure means that researchers' careers largely depend upon publishing their findings in good quality journals. In contrast, public policy makers advance in their careers by providing solutions to policy questions. The incentives of these two groups are not complementary, nor are they constructed to promote cooperation between the two groups. Added to this, the professional training of either group shares little in common with the other.

It is time-consuming and resource-intensive to reduce the level of uncertainty surrounding predictions made by HTA researchers. As Granados et al. (15) argue, those risks that are concentrated in time and place are often perceived as greater than dispersed risks. An example of this is that relatively small risks, such as the

risk of serious side effects from the pertussis vaccine, may be overemphasized compared with relatively large risks such as those surrounding smoking.

### **Barriers to Implementation at the Healthcare Professional Level**

**Practice Environment.** The practice environment has an important impact upon clinician behavior. As clinicians are the gatekeepers to the healthcare system, they must find HTA results acceptable if findings are to be implemented. Currently the idea that HTA information may be incorporated within clinical guidelines is being embraced (23). However, as Battista (1) argues, high-quality HTA is a necessary, but not a sufficient, condition for implementation.

**Knowledge and Beliefs.** Furthermore, if the mechanism to change behavior is to take effect, factors that predispose, enable, and reinforce the change are required. As Haines and Jones (18) argue, there is a “long standing cultural divide between researchers, practitioners and administrators.” Each group of healthcare professionals within the decision-making chain have developed their own technical language, and this may prevent effective communication.

Another issue that may distort good practice is the conflict between individual clinical freedom and compliance with externally imposed guidelines, especially when the health professionals’ information is limited. Haines and Jones (18) provide a spectrum of behavior ranging from innovative and early adopter behavior to the laggard approach. As Smith and coworkers (31) note in their study of obstetricians’ and midwives’ knowledge of routine prenatal screening tests for abnormality, lack of knowledge on the part of health professionals may act as a barrier to providing information to patients.

**Lack of Consensus.** Considerable evidence suggests that marked and systematic variations in medical practice continue to exist within and between countries. For example, in a study that compared the incidence of seven common surgical procedures in Norway, the United Kingdom, and the United States, McPherson et al. (25) found that tonsillectomy and hysterectomy were four times as common in the United States as in Norway. The rates of all procedures in the United States were greater than those in Norway and the United Kingdom, with the exception of appendectomy.

A major job of HTAs is to stimulate the reduction of inappropriate and inefficient care as well as the inequitable variation in the quality of care. If there is a lack of agreement about what constitutes best practice, then it is likely that the confusion will transmit to the healthcare professional level. Battista and Jacob (1) found that different and opposing recommendations concerning cholesterol screening were supplied by technology assessment agencies, consensus conferences, and task forces. It seems likely that, faced with such a situation, clinicians would adhere to their current mode of practice. If the standards of practice and guidelines recommended by HTA findings do not match current practice, clinicians may be reluctant to adopt them.

Patient expectations, the compulsion to act, and the threat of legal action motivate clinicians at a professional and at a personal level. Demanding work schedules placed on clinicians may limit the time allocated to the implementation of continuous quality improvement. However, as Wilcock (34) points out, it is not just the workload that prevents clinicians from taking on board quality improvement. He makes the point that there is little explicit emphasis on the topic within the

training of most undergraduate health professionals. For those clinicians who undertook their training some time ago, it is particularly important to update their knowledge about the value that new techniques can contribute to the management of health care. Continued professional education is therefore essential.

**Autonomy and Uncertainty.** In terms of professional attributes, at the conceptual level, a paradoxical relationship between professional autonomy and clinical guidance may occur (27). Clinicians are a key audience for economic evaluations, but since clinicians do not appear to think of health care in terms of economic outcomes, different models for implementation are required. If clinicians are not included within the process of HTAs, the results will have less credibility among the group, and without adequate training in HTA, clinicians will be reluctant to act upon findings, even if these are valid.

Naturally, clinicians are uncomfortable with uncertainty, and this promotes cautious behavior. For instance, clinicians may prefer to order a diagnostic test for a patient even if the test is not deemed cost-effective (15). Added to this, conduct of clinical practice has traditionally been the sole preserve of the medical profession, whereas increasingly practice is evidence-based, and other arguments, e.g., cost-effectiveness, are incorporated within the analysis of healthcare interventions. Health technology assessors are dependent upon the dynamism of health-care professionals if HTA findings are to translate into practice.

### **Barriers to Implementation at the Level of the General Public**

As consumers of healthcare interventions, the general public, and patients in particular, are an important focus of HTA. The public has a direct role to play in terms of its contribution to the decision-making process, as well as an indirect influence through the ballot box. In spite of the importance of individuals as a target group for HTAs, little research has been undertaken on the implementation of HTA at this level. The impact of study findings at this level is particularly difficult to assess given the volume of the audience.

**Financial Barriers.** In a private healthcare system, actual demand will be less than socially optimal if medically beneficial treatments are prohibitively expensive for the consumers of health care. On the other hand, within public healthcare systems, rationing of the limited supply of available health care at the public policy level may equally prevent the use of appropriate medical care by the general public, in spite of sound economic information advocating the use of the treatment. Another aspect relating to finance is the issue of socioeconomic status, and this will influence the accessibility of the healthcare system to its citizens. For example, healthcare service inaccessibility is heightened when individuals' incomes are limited.

**Information Asymmetry.** Due to the information asymmetry between patients and their doctors, an agency relationship exists. In terms of maximizing health outcome, it is not clear whether people always know what their own best interests are, or that their stated preferences match their actual preferences. Often individuals rely on the doctor's knowledge for their healthcare requirements, hence barriers to implementation at the healthcare professional level may influence the behavior of the general public. To some extent the mass media provides useful health-related information to the general public. However, often the healthcare needs of an individual or a small group of people are publicized and, depending on the perspective taken, there may be tension between socially and privately optimal health solutions.

**Attitudes and Behavior.** People's own personal perceptions, expectations, and desires to alter their lifestyle greatly influence the extent to which HTA may be implemented. Individuals' belief systems are important, as are their attitudes toward compliance and adherence to medical treatment instructions. The perspectives of HTA studies vary and are not always compatible with individual patient preferences, and since few individuals are trained in HTA, many study findings are not immediately accessible.

Paradoxically, in a survey that explored the assumptions underlying patient responses to NHS resource prioritization, it was found that respondents did not like to base resource allocation on their own needs; instead, they took a collectivist approach (7). The authors attempt to explain this by saying that responses may be based on a paternalistic National Health Service (NHS) model of care as well as limited information. Given that the NHS is free at point of delivery, traditionally the general public does not have to consider costs explicitly.

The examples given above illustrate that there are several significant and complex barriers to the implementation of HTA findings. Hence, there is a need to focus evaluations so that the options produced are relevant and valuable to a predefined target audience. The challenge is to integrate economic evaluation, and HTA more generally, with mechanisms to encourage a rational diffusion and use of health technology. The following section provides examples of the ways in which such links have been made in the past, as well as presenting suggestions for future initiatives.

## **MECHANISMS TO ENCOURAGE RATIONAL DIFFUSION AND USE OF HEALTH TECHNOLOGY**

The mechanisms available to facilitate the use of HTA findings have been set out by Haan and Rutten (16). These are divided into regulation by directive and regulation by incentive. The potential for use of a given mix of mechanisms varies by healthcare system, but the main message is that any given healthcare system has some scope to influence the diffusion and use of health technologies, given the political will.

Examples of the use of HTA findings in informing particular policies for the diffusion and use of health technologies have been discussed earlier by Drummond (9). Also, within the literature there are numerous examples of successful influence of HTA on health and the practice of health care (17;19). Therefore, only a brief summary will be given here. First, there is evidence from the United Kingdom that HTA findings can contribute to decisions about the planning of specialist facilities; for instance, data from a study on heart transplants were influential in deciding whether the program should be expanded (4).

Second, there is evidence of the use of HTA findings in decisions about limiting the reimbursement for technologies. For example, in The Netherlands the Health Insurance Executive Board linked decisions about inclusion of health technologies in the health insurance "envelope" to the availability of evidence on cost-effectiveness (14). Also, a growing number of countries now require data on cost-effectiveness in support of decisions to reimburse new pharmaceuticals (12).

Third, there are a growing number of examples of evidence-based clinical practice guidelines. One of the major tensions is whether such guidelines should be based solely on evidence of clinical effectiveness or whether they should also embrace cost-effectiveness considerations (10). While there are numerous examples

of evidence-based guidelines, relatively few explicitly consider economic data. Recent examples of those that do include the prescribing guidelines developed as part of the Evidence Based Outreach project funded by the NHS Research and Development Directorate in the United Kingdom (23).

Finally, in healthcare systems where there is an increased emphasis on managed competition, there is evidence that HTA findings are being used to encourage cost-effective purchasing of health care. For example, in the United Kingdom the NHS Centre for Reviews and Dissemination produces a series of Effective Health Care Bulletins, outlining effective and efficient healthcare practices and procedures. The bulletins are informed by HTA findings and cover such varied topics as getting evidence into practice, the implementation of clinical practice guidelines, and the management of cataracts (26).

Review of the evidence illustrates that there is no shortage of available mechanisms for encouraging a rational diffusion and use of health technology. However, there may be concerns about using such mechanisms aggressively to implement the findings of HTAs.

## **CONCERNS ABOUT THE AGGRESSIVE IMPLEMENTATION OF HTA FINDINGS**

Among the policies outlined above, several concerns have been voiced about the aggressive implementation of HTA findings. First, the agencies undertaking or commissioning HTAs recognize that there are many actors in the healthcare system (e.g., professionals, policy makers, the health care industry, and the general public) and believe that it is important to remain independent of a particular group's interests.

Most HTA agencies are funded by government but have an "arms-length" relationship. That is, the research agenda of such agencies is typically determined by an advisory committee having representation from all the key actors. To maintain the confidence of healthcare professionals, the agencies, which are usually funded by government or other third-party payers, are especially keen to establish that their research agenda is not driven by cost containment but by a requirement for excellence. HTA agencies are reluctant to be too strident about their recommendations and often suggest cautious adoption of new technologies, pending evidence of efficacy and cost-effectiveness. The HTA agencies are, of course, anxious to avoid any accusations that they are agents of third-party payers.

Second, the agencies undertaking HTAs feel that a clear division of responsibility should be made between those generating evidence on health technologies and those acting on the findings. Therefore, on occasions there may be some reluctance, in the reports of HTAs, to make firm recommendations as to what should be done as a result. The same reluctance is prevalent among the reports of health services research more generally. The feeling is that the researcher is responsible for the generation of data and that the decision maker is responsible for the actions that follow.

In principle, this clear demarcation is fine, but in practice problems occur because of: a) lack of prior agreement or understanding of who will take particular actions; and b) the recognition that certain recommendations will be unpopular with healthcare professionals and the public at large. Therefore, both the HTA agency (or researcher) and the decision maker have an incentive to be unclear as

to their respective responsibilities. The result is that the implementation of HTA findings can often fall between the cracks.

Third, it has to be recognized that policy regarding health technologies does not solely depend on the availability and quality of evidence on efficacy and cost-effectiveness. Therefore, all parties in HTA need to realize that on occasion policies will be followed that reflect other decision-making criteria, such as the need for equity in healthcare provision. For example, HTAs that award special benefits for minority groups may be approved even though they may not be very cost-effective.

Therefore, the conclusion of this section is that, while the implementation of all HTA findings would in principle be beneficial, the appropriate implementation strategy needs careful thought.

## ELEMENTS OF A GOOD IMPLEMENTATION STRATEGY

Whereas HTA agencies may have concerns about becoming increasingly involved in implementation, the paradox is that HTA agencies are often judged on whether the findings of their studies have had any impact. Therefore, it is in the interest of all parties to outline a good implementation strategy.

The main elements of such a strategy are as follows:

1. *Defining a clear policy question.* Buxton (4) points out that, over the 3 years of a health technology assessment of heart transplantation, the precise question(s) being posed by the commissioner of the study, the Department of Health, changed on numerous occasions. Whereas the issues surrounding a new technology inevitably change during the course of a HTA study, clarity in the initial policy question is important.
2. *Defining a clear research question.* Some policy questions may be rather broad, such as “Should this new technology be reimbursed?” By contrast, research questions often have to be more specific, such as “What are the costs and benefits, from a societal perspective, of using the new technology on a particular group of patients, when compared with existing practice?” The main skill here is to make the research question specific and useful without losing sight of policy relevance.
3. *Making recommendations commensurate with the evidence.* The findings of HTA studies may be very strong (e.g., the use of the technology results in a statistically significant increase in deaths) or more equivocal (e.g., patient preferences for one procedure over the other were fairly evenly balanced).

Therefore, the strength of recommendation should vary accordingly. For example, in the first case the technology should be banned. In the second case one might make both procedures available, providing this does not greatly increase costs or suggest further research. Not all the recommendations in HTA reports need to be firm. However, where the results suggest it, HTA assessors are doing the decision maker a disservice if they are unnecessarily tentative.

4. *Identifying the implementation mechanism.* The chances of implementation of HTA findings are likely to be maximized if, at the outset, the implementation mechanism is identified. In some cases this may be self-evident. For example, with “big ticket” technologies, or communitywide programs such as screening or immunization, the implementation mechanism is often a central government decision. In other cases it may not be so clear. For example, the implementation of a new practice at the physician level might be facilitated by the introduction of a new clinical practice guideline, a change in the fee schedule, or both.
5. *Paying attention to incentives and disincentives.* Not everyone may gain from the introduction of a new technology or the abandonment of an existing one. A key actor is the physician, who is unlikely to change his or her practice if income is lost. Therefore, it is

important to anticipate these problems in advance and adjust incentives accordingly by, for example, changing the fee schedule. Economic evaluation can help by identifying the costs and benefits falling on the different parties, including physicians, patients, hospitals, the government, and society at large. Achieving change is not usually a cost-free process, and such costs should be identified as part of the overall HTA strategy. Many HTA agencies now budget for the dissemination of findings, but it is less common for third-party payers to budget for the broader aspects of implementation.

6. *Clarifying the roles and responsibilities of the various parties.* It was mentioned above that there may be good reasons why researchers and HTA agencies should not become too involved in implementation. If so, it should be clear what actions government or health insurers will take as a result of various findings of the HTA. Failure to clarify roles and responsibilities may result in a decision-making vacuum and, occasionally, recrimination on all sides. Often it appears that relatively little attention is paid at the outset to implementation issues. Hence, it is not surprising that on many occasions little change results from the HTAs that are performed.

## A RESEARCH AGENDA FOR IMPLEMENTATION ISSUES

It is clear from the above discussion that little is currently known about the implementation of HTA findings. Therefore, more research is required into questions such as:

1. *What are the barriers to implementation?* Some of the current literature was reviewed in this paper. More research is required to determine, in particular, whether some barriers are more important than others in certain situations.
2. *What are the mechanisms to encourage implementation of HTA findings?* Is the list of mechanisms outlined in this paper exhaustive? If not, which other mechanisms should be considered?
3. *Are certain mechanisms more suitable in certain circumstances or for particular types of technologies?* It is likely that some of the mechanisms are easier to use in some healthcare systems than others. Some are also likely to be more suitable for ensuring a rational use of some health technologies than others (e.g., directives for the planning of specialist facilities are more likely to be suitable for big ticket technologies and in healthcare systems where there is substantial public finance or substantial regulation of health insurance. However, these relationships have not been explored systematically, and this would be a necessary step before proposing particular implementation strategies for particular HTA studies.
4. *What is the relative cost-effectiveness of alternative implementation mechanisms?* It is vital to recognize that few, if any, of the implementation mechanisms discussed above are without costs. In the event that more than one implementation mechanism is feasible in a given situation, it is important to compare their relative cost-effectiveness.
5. *What is the balance of benefit and harm between aggressive and conservative implementation strategies?* Overly aggressive implementation of HTA findings might cause resentment among healthcare professionals or lead to premature adoption of new practices. On the other hand, conservative strategies (e.g., merely publishing results in learned journals) may lead to a lag in the adoption of more cost-effective strategies. Clearly a balance needs to be struck, and this might differ among technologies. The balance may also vary, depending on whether the decision relates to adoption of an existing technology or abandonment of a long-established one. Therefore, more research is required into this issue.

## POLICY IMPLICATIONS

Although many governments are now making considerable investments in HTA, the vast majority of interest and resources are devoted to the assessment component of the process. The policy implications are:

- More attention and resources need to be devoted to dissemination and implementation;
- Those commissioning HTAs should give more attention at the outset to the possible strategies for implementing findings; and
- More research is required into issues surrounding the implementation of HTA findings.

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