HOSPITAL-BASED TECHNOLOGY ASSESSMENT: A Case Study Involving Laser Treatment of BPH

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Hospitals in British Columbia seldom use formal health technology assessment (HTA)\(^1\) processes to assist in capital acquisition decisions, to organize health services, or to influence clinical care.

The Greater Victoria Hospital Society (GVHS)\(^2\) in contrast, has an established Technology Assessment Committee (TAC), project-specific Working Groups, and a rigorous, explicit HTA process that requires input from both hospital administrators and clinical care providers.

The TAC, which began in 1990, is a joint medical staff/administrative committee that reports directly to the Hospital Executive Committee. All new technologies are brought to the Committee, prioritized and, where necessary, delegated to a TA Working Group (TAWG). TAWGs' examine a technology in detail following an explicit process. The review involves considering the technology and its potential application, as well as hospital and community needs.

Until 1994, the TAWGs' considered technology without critical appraisal\(^3\) of clinical efficacy and effectiveness evidence. During 1994, a member of the British Columbia Office of Health Technology Assessment (BCOHTA),\(^4\) who regularly attends TAC meetings, began to informally contribute critical appraisal to the HTA projects. The Laser Treatment of Benign Prostatic Hyperplasia (BPH) project, which began at this time, was the first project in which BCOHTA contributed a systematic and explicit critical appraisal of the literature on the effectiveness of such a device.

Neither the laser treatment of BPH, nor its proponents, are singled out for criticism. Rather, the explicit purpose of this HTA project was to examine some of the wider issues relevant to health care reform. Of particular interest were the costs and benefits of integrating an appraisal of effectiveness evidence into an TAC project, as this directly challenged the expert opinion of the clinicians involved.

The TAC laser project brought together, into one venue, representatives from four disparate groups: GVHS urologists and GVHS administrators, the device industry, and researchers from the BCOHTA. Although the TAC brought the groups together, it did not bring about consensus, as each group entered into, and largely maintained, a different conceptual framework, value system, and practical agenda, with:

- the laser industry arguing 'the need for progress'
- the GVHS urologists and administrators arguing 'the need to compete with other hospitals'
- BCOHTA arguing 'the need for research and evaluation'.

\(^{1}\) Health technology assessment (HTA)
\(^{2}\) Greater Victoria Hospital Society (GVHS)
\(^{3}\) Critical appraisal
\(^{4}\) British Columbia Office of Health Technology Assessment (BCOHTA)
Several debates about efficacy and effectiveness evidence ensued. Of importance was not so much the contents of the debates, although there were interesting differences in the evaluation methods and presentational strategies used by the local urologist, the BCOHTA representative and the device industry. Rather, of importance was the circumstance in which clinicians and industry representatives faced an unprecedented systematic challenge to their professional authority and their responses to that challenge.

This HTA project was largely unsuccessful in the narrow sense of determining which technology to purchase for the surgical treatment of BPH, because rapid technological evolution continually results in outdated clinical trial evidence. However, several lessons were learned. First, building an evidence-based medicine infrastructure in the hospital setting requires an appreciable amount of hospital resources and a wide range of personnel. Second, systematically examining, as in this instance, clinical efficacy and effectiveness evidence acts as a direct challenge to the clinical experts involved, as those clinicians expect to hold the exclusive right to determine the state of evidence regarding clinical care. Directly challenging the expert opinion of clinicians requires rigorous research, credibility and confidence. Third, incorporating a systematic examination of the clinical efficacy and effectiveness literature adds a very powerful tool to a hospital TAC committee: a tool that allows it, for the first time, to formally challenge the opinions of clinical experts. Fourth, while adding critical appraisal expertise to hospital committees gives the committees a powerful means of challenging the opinions of clinical experts, the ultimate objective is that of improving patient care. As the introduction of HTA to hospital decision-making is a new phenomenon, its impact on this long-term objective remains unquantified. In the interim, the focus should be on the efficacy and effectiveness of the intervention and not the debate itself.

The key issue remaining is to what extent and in what role should a hospital utilize critical appraisal expertise. Is this expertise best kept in the background in the form of written reports, or should there be a direct exchange, as described in the report, between the clinical expert providing clinical care and the critical appraisal expert interpreting the efficacy and effectiveness of clinical care? The problem with a confrontational exchange is that too much rests on its public display; that is, on style rather than content. In addition, a clinical care provider, who may have otherwise supported the idea of evidence-based medicine, could become potentially lost to the evidence-based medicine movement.

In summary, integrating an appraisal of the efficacy and effectiveness evidence into the TA process, while helping to clarify the state of knowledge for laser treatment of BPH, did not solve the problem of deciding which technology to purchase for treatment of BPH. Rather, adding a critical appraisal of the effectiveness evidence had the more subtle and
potentially far reaching effect of opening up clinical effectiveness claims to systematic review and debate.

Several recommendations concerning evidence-based medicine in hospital settings seem appropriate:

- Clinicians need far more training in, and better opportunities for, adequately examining the state of efficacy and effectiveness evidence.
- Hospitals need to establish ongoing contexts, such as the TAC described in the report, in which to critically examine efficacy and effectiveness evidence.
- Public policy makers and funding agencies, that is, the BC Ministry of Health and its relevant programs, need to identify and to financially support hospitals making systematic efforts to deal with areas of clinical uncertainty, such as that for the surgical treatment of BPH.

NOTES

1 Health technology assessment is defined as "any process of examining and reporting properties of a medical technology used in health care, such as safety, efficacy, feasibility, and indications for its use, cost, and cost-effectiveness, as well as social, economic and ethical consequences, whether intended or unintended" [Source: Institute of Med. Division of Health Sciences Policy, Division of Health Promotion and Disease Prevention. Committee for Evaluating Medical Technologies in Clinical Use. Assessing Medical Technologies. Washington, D.C.: National Academy Press, 1985.]

2 The GVHS consists of three facilities with 800 acute and 700 extended, long term, and psychiatric care beds. These hospitals serve Victoria itself, and act as a referral center for southern Vancouver Island.

3 Critical appraisal, following a systematic review, involves applying strict criteria in assessing the validity of knowledge for a given device, drug, or procedure. Its goals are to highlight knowledge strengths and to direct further research towards knowledge gaps. Critical appraisal, therefore, evaluates rather than simply reviews the state of knowledge.

4 The BCOHTA is a government-funded, university-based, provincial TA program of research which began in 1990. Among other activities, it has contributed written and oral presentations to a wide range of local and national clinical effectiveness debates.