CEESTAHC 2013
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The Roles of HTA Agencies: Implications for Independence and Objectivity

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Origins of Technology Assessment

- Technology assessment (TA) arose in the mid-1960s from an appreciation of the critical role of technology in modern society and its potential for unintended, and sometimes harmful, consequences.
- The term “technology assessment” was introduced in 1965 in the US House of Representatives, with the primary purpose of serving policymaking.
- Examples of early assessment topics were offshore oil drilling, pesticides, automobile pollution, nuclear power plants, supersonic airplanes, and the artificial heart.

See, e.g.: Brooks H, Bowers R. The assessment of technology. Science 1970;222(2):13-20; and US Congress, House of Representatives. Committee on Science and Astronautics. Technology Assessment. Statement of Emilio Q. Daddario, Chairman, Subcommittee on Science Research and Development. 90th Cong., 1st sess., Washington, DC; 1967.

Early Health Technology Assessments

Development of TA in 1960s and 1970s coincided with the introduction of health technologies that prompted widespread interest in matters that transcended their intended health effects. Examples of early HTAs:

- Multiphasic health screening (NAE* 1969)
- In vitro fertilization (NRC* 1975)
- Predetermination of the sex of children (NRC 1975)
- Retardation of aging (NRC 1975)
- Modifying human behavior by neurosurgical, electrical or pharmaceutical means (NRC 1975)
- Drug bioequivalence (OTA* 1974)

*NAE: National Academy of Engineering; NRC: National Research Council; OTA: US Congressional Office of Technology Assessment

What Is Health Technology Assessment?

- HTA is the systematic evaluation of properties, effects, or other impacts of health care technology.
- The main purpose of HTA is to inform policy making for technology in health care.
- HTA may address the direct and intended consequences of technologies, as well as the indirect and unintended consequences of technologies.
- HTA is conducted by interdisciplinary groups.
- HTA uses explicit analytical frameworks and a variety of methods.

Health Care Technology

- Drugs: e.g., aspirin, antibiotics, cancer chemotherapy
- Biologics: e.g., vaccines, blood products, biotechnology-derived substances
- Devices, equipment, supplies: e.g., cardiac pacemaker, MRI scanner, mosquito netting
- Medical and surgical procedures: e.g., acupuncture, bariatric surgery, cesarean section
- Public health programs: e.g., water purification system, vaccination program, smoking prevention program
- Support systems: e.g., clinical laboratory, drug formulary, electronic health record system
- Organizational, delivery, managerial systems: e.g., primary care network, health care payment system

Various Roles of HTA Agencies/Organizations

- Advise regulatory agencies about allowing the marketing / indications of use of technology
- Advise payers (health authorities, health plans ,drug formularies, etc.) about technology reimbursement: coverage, coding, and payment amounts (prices)
- Advise/guide clinicians and patients (and caregivers) about technology use (evidence-based clinical practice guidelines)
- Help managers of hospitals, health care networks, other provider institutions to make decisions about acquiring or investing (or dis-investing) in technology (e.g., imaging equipment, robotic surgery)
- Support decisions by national and regional public health authorities about conducting population health programs (e.g., immunization, cancer screening)
- Support decisions by health technology companies about technology development and marketing
- Support decisions by investors in the health care sector
- Inform research agencies about evidence gaps, unmet needs

Horizon-Scanning

- Provides rapidly completed, brief descriptions of new/emerging technologies and their potential impacts
- Can be used to:
  - Identify emerging ("rising") technologies that have potentially major implications for health care
  - Identify emerging new uses/indications of existing technology
  - Manage adoption and use of new technologies
  - Identify inappropriate use of technologies (under-use, over-use, and improper use)
  - Enable health care providers, payers to plan for, adapt to technological change
  - Identify potentially obsolescent ("setting") technologies
  - Plan data collection to monitor adoption, use, and impacts
- Trade-off: incomplete information earlier vs. better information later

Horizon-Scanning Programs - Examples

- EuroScan (members from INAHTA; secretariat at NHSC, UK)
  - Renamed: International Network on New and Changing Health Technologies
- National Horizon Scanning Centre (NHSC, UK)
- Australia & New Zealand Horizon Scanning Network (ANZHSN)
- Canadian Agency for Drugs and Technologies in Health (CADTH) Horizon Scanning Service
- AHRQ Healthcare Horizon Scanning System
- ECRI Emerging Technology Services (USA and Europe)
  - TARGET™ (TA Resource Guide for Emerging Technologies)
  - Health Technology Forecast, Health Technology Trends

Barriers to HTA

- Technological imperative (new is always better)
- Competition among health care providers (e.g., clinicians, hospitals, health plans) for technological superiority
- Limited resources for HTA
- Prestigious proponents of technology
- Clinicians wanting to maintain decision-making autonomy
- Patients (and patient advocacy groups) seeking unlimited choice of treatment options
- Health technology marketing
- Financial incentives (clinicians, payers, industry, patients)
- Insufficient primary data
- Timing of HTA misaligned with decision-making needs
- Political actions (e.g., legislative mandates contrary to evidence)
- Implementation barriers

HTA Agencies and Networks Around the World: Continued Growth

- Increase in number of agencies
- Increase in international collaborations/networks
- Especially increased number and prominence in:
  - Latin America
  - Asia/Pacific

INAHTA – International Network of Agencies for Health Technology Assessment

- Established in 1993
- Purposes
  - Accelerate exchange and collaboration among agencies
  - Promote information sharing and comparison
  - Prevent unnecessary duplication of activities
- Compiles HTA report database (accessible via Cochrane Library)
- Members are non-profit organizations producing HTAs
  - Linked to regional or national governments
- Today: 56 member agencies from 31 countries
  - North America
  - Latin America
  - Europe
  - Asia
  - Australia and New Zealand

International Collaborations/Networks in HTA

HTA organizations rely on multiple extensive information and professional networks:

- AHRQ Evidence-based Practice Centers (EPCs)
- Cochrane Collaboration and Library
- European Network for Health Technology Assessment (EUnetHTA)
- EuroScan International Network
- Health Technology Assessment International (HTAi)
- HTAsiaLink
- International Health Economics Association (iHEA)
- International Network of Agencies for Health Technology Assessment (INAHTA)
- International Society for Pharmacoeconomics and Outcomes Research (ISPOR)
- Red de Evaluación de Tecnologías Sanitarias (RedETSA)

HTA Programs Differ in Important Ways (1)

- Organizational status: government, quasi-government non-profit, for-profit
- Funding: source, adequacy, stability
- Target audiences or clients
- Strength/directness of relationship with policy-making, e.g., for coverage and pricing. HTA agency/organization could:
  - Provide findings (not recommendations) for general use
  - Provide findings and recommendations to particular policy-makers who can choose to follow those recommendations
  - Provide findings and recommendations to particular policy-makers who are obliged to follow those recommendations
  - Provide findings and recommendations to itself (or to an agency of which HTA agency/organization is a part) and make/take policies accordingly

HTA Programs Differ in Important Ways (2)

- Technologies assessed, i.e., one or more of: drugs, biologics, devices/equipment, medical/surgical procedures, systems, etc.
- Impacts assessed, i.e., one or more of: technical quality; safety; efficacy or effectiveness; economic (various types); ethical, legal, social; other
- Selection of evidence standards, criteria, or grading
- Locus of HTA report generation (e.g., in-house, commission externally)
- Stakeholder involvement/access in, e.g.: topic selection, key questions, expert consultation, review of draft reports
- Transparency of process

Potential Sources of HTA Vulnerability

- Actual or perceived lack of independence
- Actual or perceived lack of objectivity, e.g., due to bias or conflict of interest by HTA organization or its leaders or staff
- Inadequate or unstable funding
- Inadequately trained or compensated staff
- Time needed to generate credible HTA reports too long for policy-makers' needs
- Findings and recommendations not as definitive as policy-makers want (e.g., due to inadequate or non-definitive evidence)
- Inadequate ability to convey rationale of HTA findings or recommendations (clinical, economic, statistical, evidentiary, other methodological aspects) to target audiences
- Lack of political protection from influence of stakeholders (clinical groups, clinicians, patients, industry, other) whose authority, credibility, choices/preferences, or finances are threatened by HTA findings and recommendations

Toward "Good Practices" in HTA Programs

Around the world, HTA is improving the state of the art and identifying and encouraging use of good practices, e.g., in:

- Establishing and implementing HTA programs
- Involvement in international networks
- Educational programs

Even so, **there is no one right way** to do this

- HTA programs can and should draw from good practices from other programs and international collaborations
- However, HTA programs should adapt to national or regional conditions, consistent with their purposes
- This extends to HTAs themselves: the content and findings of reports from an HTA program in one country are not necessarily appropriate for an HTA program in another country

Emerging Good Practices in HTA

1. Explicit, valid processes, methods, and standards for conducting clinical, economic, other analyses
2. Explicit mission or purpose of HTA program, including its mandate or other origins and how and by whom its reports and other products are to be used
3. Transparent, adequate, and stable funding
4. Explicit provisions and processes for governance, e.g., in bylaws and related documentation, appointment and roles of governing board members or other oversight
5. Explicit provisions and processes for hiring and ongoing training of properly qualified staff
6. Explicit provisions and processes for engaging outside expert consultants, advisors, and reviewers appropriate for HTA topics

Source: Goodman C. Toward international good practices in health technology assessment. Int J Technol Assess Health Care 2012;28(2):169-70.

Emerging Good Practices in HTA

7. Provisions to minimize scientific biases, e.g., pertaining to evidence gathering and interpretation, and to disclose and neutralize potential conflicts of interest, e.g., among board and committee members, staff, and reviewers
8. Ongoing participation in international HTA collaboration and networks
9. Explicit process and criteria for priority setting, topic selection, and determining assessment questions, using, e.g., horizon scanning, priority criteria, stakeholder input
10. Explicit, transparent, consistently implemented, and documented processes for conducting HTA
11. Explicit, valid processes, methods, and standards for identifying and assessing evidence

Source: Goodman 2012.

Emerging Good Practices in HTA

12. Explicit provisions for independent review of draft reports
13. Explicit provisions for input by stakeholders, e.g., to governance, priority setting, and HTA report review
14. Explicit process for dissemination or transfer of HTA reports to policy-makers, decision-makers, and other target groups, including via appropriate media for the respective groups
15. Provisions for outside appeals of HTA findings
16. Explicit process and criteria for reassessment, i.e., updating or revising assessments
17. Independent review of HTA program performance and impacts

Source: Goodman 2012.

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