

Technology assessment and knowledge brokering: The case of assisted reproduction in The Netherlands

Jessika van Kammen

Netherlands Organisation for Research and Development ZonMw

Carin W. Jansen

Paediatric Association of the Netherlands

Gouke J. Bonsel

Amsterdam Medical Centre

Jan A. M. Kremer

Radboud University Nijmegen Medical Centre

Johannes L. H. Evers

Maastricht University

Juriy W. Wladimiroff

Erasmus Medical Centre

Objectives: Even when policy makers show interest and evidence-informed and convincing HTA studies are available, use of assessment products is not guaranteed. In this article, we report our experience with knowledge brokering to foster evidence-informed policy making on cost-effective treatment and reimbursement of assisted reproduction in The Netherlands.

Methods: From earlier work in the field of knowledge brokering, we foresaw the need for a deliberative strategy to manage the inherent tension between scientific rigor demanded by researchers and responsiveness to real-time needs demanded by policy makers. Therefore, we structured the process in three distinct steps: (i) agreement about the main messages from the research, (ii) analysis of the policy context and of the meaning of the main messages for the actors involved, and (iii) an invitational meeting to make recommendations for action.

Results: One of the recommendations that would require changes in ministerial policy was followed up instantly, whereas the other recommendation is still under debate. The Dutch Society of Obstetrics and Gynecology activated the revision of two guidelines. The patient organization uses the new scientific insights in informing members and the public. Closing the loop, The Netherlands Organisation for Health Research and Development (ZonMw) funded research to close knowledge gaps that became apparent in the process.

This knowledge brokering process greatly profited from advice from Jonathan Lomas, PhD, CEO of the Canadian Health Services Research Foundation. Ingrid Maas, PhD, played a pivotal role in initiating this trajectory. Madelon van Wely, PhD, did the systematic literature review. Willieanne Nelen, PhD, made a description of the common practice of subfertility care in The Netherlands. Rene Eykemans, PhD, re-analyzed the primary data of the studies to make them comparable. The authors thank them for their valuable contributions. The Netherlands Organisation for Research and Development (ZonMw) funded the process of knowledge brokering described in this article.

Conclusions: Knowledge brokering is a promising approach to bring HTA into practice. We conclude that the methodologies to feed research results into the policy process are still in an incipient stage and need further development.

Keywords: Knowledge transfer, HTA impact, Stakeholder involvement, Assisted reproduction

There is a growing international interest in encouraging health policy to be better informed by the results of relevant and valid research (3;7). And there is a growing body of health technology assessment (HTA) reports aimed at providing scientific support to policy decisions. However, policy makers do not use research findings routinely in their decision making. The reason for this finding is that there is a huge gap to bridge between the kind of questions that policy makers would like to be seen answered and the kind of answers that researchers can provide. For example, policy makers rarely transmit clear messages on their knowledge needs to inform a feasible and timely solution to the policy problem that they face in their specific context. Researchers on the other hand produce scientific evidence that is not always tailor-made for application in different contexts, and they en-wrap their findings with many specifications and grades of uncertainty.

Knowledge brokering as an approach to foster evidence-informed decision making has been pioneered by the Canadian Health Services Research Foundation (4;5). The approach starts from the recognition that health research and policy making usually operate in different dimensions, each with its own professional culture, resources, imperatives, and time frames. Therefore, initiatives are needed to bring researchers and policy makers together and facilitate their interaction. Essentially, knowledge brokering is a two-way process: it aims to influence policy to be more responsive to research and to stimulate researchers to translate their findings in terms meaningful to policy makers. In this way, evidence-based and context-informed policy options can be coproduced by the researchers and policy makers involved.

POLICY CONTEXT

Expanding new technologies, budget constraints, deregulation, and many different stakeholders being involved are the contexts that reimbursement decisions on assisted reproduction in The Netherlands have to take into account. In 1999, the Ministry of Health asked The Netherlands Organization for Research and Development (ZonMw) to develop a research program on the cost-effectiveness of subfertility care. To determine priorities for research, ZonMw consulted health-care providers, policy makers, and researchers in the field of subfertility care. Next, ZonMw selected and funded six high-quality studies on the cost-effectiveness of subfertility care. The research program was cofunded by the Ministry of Health and the Health Insurance Board, whose policy mak-

ers had been involved in setting priorities. The subjects of the six studies were deemed very relevant for decision making regarding the cost-effectiveness and the way of financing assisted reproduction, that is, expectant versus active management, natural versus stimulated cycles, and single versus double embryo transfer.

In October 2003, the Ministry of Health had decided to withdraw the reimbursement of first in vitro fertilization (IVF) cycles and all medication for fertility treatment. There was broad agreement that this decision was not based on evidence about medical or economic benefits. After questions in Parliament, the Minister of Health stated that he would take into account the results of the ZonMw studies in his next assessment about the financing of IVF. Prompted by these policy developments, the researchers expressed interest in stimulating the uptake of their results in the policy process.

Favorable Conditions at the Start

According to policy scientists, the involvement of the foreseen users of the research, such as policy makers and health-care providers, would favor the uptake of research results (6). In addition, subfertility care is high on the agenda of policy makers. This finding is partly because its status as part of the healthcare basket is regularly contested and partly because the theme is emotionally laden and, therefore, sensitive to media hype. Other conditions that can be expected to favor utilization were met as well. For example, in The Netherlands, subfertility care is well-organized and centered in thirteen licensed clinics, all of which were involved in the research program. The gynecologists in subfertility care have a strong tradition in evidence-based practice. Patients are well-organized too, and their organization actively monitors both scientific developments and the policy process. However, ZonMw believed that, regardless of the favorable conditions, there was no assurance that the research results would indeed be used in the policy process. Therefore, ZonMw initiated a process of knowledge brokering. The aim of this process was to contribute to rational decision making on cost-effective subfertility care and reimbursement, by using the results from the recent cost-effectiveness studies.

A Steering Committee was established to obtain input and quality control for the process and to involve potential ambassadors for the outcomes. A member of the ZonMw commission on Health Care Efficiency Research presided over the Steering Committee. Other participants were established researchers and gynecologists in subfertility care, an expert on cost-analysis, a person from the Health Insurance

Board, and a senior officer from the Ministry of Health. We, the authors of this article, took part in the Steering Committee.

METHODS

From the work on knowledge brokering for policy makers by the Canadian Health Services Research Foundation, the Québec government agency responsible for health services and technology assessment (AETMIS), and the National Health Service Service Delivery and Organisation Programme in the United Kingdom, we foresaw the need for an appropriate strategy to carefully manage the inherent tension between scientific thoroughness demanded by researchers and responsiveness to real-time needs demanded by policy makers (1;2). The process, therefore, was broken down in different steps. Step 1 would result in agreement about the main messages that can be derived from the research; step 2 was to analyze the policy context and to identify in an interactive process what these messages would mean to the different actors involved (contextualization); and step 3 was the synthesis of the empirical information in an accessible format and making recommendations for action for all the actors involved.

Being responsive to policy meant that we had to attune our planning to the policy cycle. To be able to send the report to the Ministry of Health before the annual budget would be established, we ran step 1 and step 2 in parallel. We, therefore, had to ask the researchers to trust us to work with their yet-unpublished data. Researchers who were acquainted with the field of subfertility care carried out step 1. In a series of meetings, the researchers agreed upon their outcome measures, both clinical outcomes and cost-calculations. The data of the studies on the cost-effectiveness of distinct IVF schemes were made comparable to enable stronger conclusions. The findings from the Dutch studies were completed with a systematic review of the international literature on cost-effectiveness of assisted reproduction. This step was a key requisite to weigh and interpret the new evidence that the research had produced. A description of the organization and actual care for people with subfertility in The Netherlands was provided as well.

An analysis of the policy context and the reimbursement situation of subfertility care was made by ZonMw. This organization also mapped out what the research findings would mean to different actors involved (step 2). It was concluded that gynecologists, patients, researchers, the Ministry of Health, health insurers, and the Health Insurance Board each hold a stake. Although the pharmaceutical industry is an obvious stakeholder as well, we decided not to involve them in the process because their involvement would potentially interfere with our scientific credibility in the eyes of policy makers. For contextualization, social scientific methods were used such as a desktop study and semistructured interviews. The interviews focused on the

stakeholders' major concerns about assisted reproduction, what the research findings would mean to them, and what instruments they possessed to influence the use of research findings.

Step 1 and 2 provided the input to a draft report containing realistic and feasible scenarios of how, based upon the evidence from research, the cost-effectiveness of subfertility care in The Netherlands could be enhanced. Using the data that had been gathered in the six studies, the scenarios also contained estimates of the expected size of the savings. The scenarios were discussed at an invitational conference (step 3). Among the participants were all principal players in the field, such as representatives of the professional societies and patient organization, medical advisers of the larger health insurance companies, clinical researchers, and cost-effectiveness experts, and representatives of the Ministry of Health and the Health Insurance Board. The invited stakeholders developed fifteen recommendations following from the research on what should be done to improve the cost-effectiveness of subfertility care.

RESULTS

The four scenario's for evidence-based cost-effective subfertility care are set out in Table 1. On the basis of the scenarios, recommendations were made. The report with the recommendations was sent to the Minister of Health, the Health Insurance Board, the Dutch Society of Obstetrics and Gynaecology, the patient organization, and the organization of health insurers. The report contained clear, concise, and practical messages for all the actors involved, such as "new evidence confirms that the current clinical guidelines on expectant management are evidence based," and "the cost-effectiveness of the four different hormonal stimulation regimens for IVF that were studied is similar."

Table 1. Scenarios for Evidence-Based Cost-Effective Subfertility Care

1. Rational and customized expectant management to optimize the chances for spontaneous pregnancy. In this way, redundant treatments can be avoided, without jeopardizing the pregnancy chance.
2. Selective stimulation for IUI. This strategy leads to a reduction of medication costs and fewer (vulnerable and expensive) twin pregnancies.
3. Minimal hormonal stimulation for IVF leads to a reduction of medication costs while pregnancy chances are similar.
4. Single embryo transfer instead of double embryo transfer in first cycle of IVF for women under 36 years of age. To maintain the pregnancy chance, IVF with single embryo transfer requires more treatments than when more embryos are transferred. In the long-run, however, single embryo transfer leads to a reduction of costs, because twin pregnancies (and their increased costs) are prevented.

IUI, intrauterine insemination; IVF, in vitro fertilization.

The Minister of Health sent the report to Parliament, accompanied by a letter with his reaction. There were two recommendations in the report that would require changes in ministerial policy. The first was that the definition of “IVF treatment” in the Health Insurance Act should be modified. The definition considered the transfer of a cryoembryo as a completely separate, independent IVF treatment, and this definition discouraged the further development of this potentially cost-effective innovation. On the basis of the report, the Minister of Health contacted the Dutch Society of Obstetrics and Gynaecology to agree upon a change of the definition of IVF treatment to include replacements of cryo-preserved embryos. The problem with the definition of “IVF treatment” was detected in the interviews with stakeholders and was considered a drawback by gynecologists, insurance companies, patient organizations, and researchers alike. This point exemplifies the importance of going beyond reviewing the scientific evidence when encouraging rational decision making in health care. Including a description of the current concerns of the stakeholders and analyzing how these concerns are related to the research findings was useful input to the making of recommendations at the invitational conference.

The second recommendation to the Ministry of Health was that the reimbursement policy should be adapted to make single embryo transfer attractive to patients. Single embryo transfer leads to a lower pregnancy rate compared with double embryo transfer, but also to less twin pregnancies with the concomitant risks and costs. The Minister of Health decided not to effectuate this recommendation. He stated that, “. . . it is impossible to develop an arrangement that safeguards the pregnancy chance of all potential parents but demands that, whenever possible, single embryo transfer is performed.” However, as a consequence of the knowledge-brokering process, all field parties supported the recommendations and questions were asked in Parliament about the reaction of the Minister of Health to the report. A majority in Parliament supported a motion that, “. . . confirming that IVF treatment according to the ZonMw recommendations would favor the health of mother and child . . . asks the government to include the first IVF cycle in the health basket . . .” The Minister of Health rejected this motion but said that he was willing to reconsider his decision when the next series of decisions on the health basket are undertaken.

Following the recommendations, the Dutch Society of Obstetrics and Gynaecology activated the revision of its guidelines on intrauterine insemination and on indications for IVF. The quality norm on IVF will be revised as well. The patient organization uses the new scientific insights in informing members and the public. Closing the loop of the interaction between research and policy, ZonMw funded research to ascertain the first year outcome of twin pregnancies, with a focus on costs. This gap in the knowledge basis for determining the cost-effectiveness of different approaches in assisted reproduction had become apparent in the process.

DISCUSSION

Structuring the process in three distinct steps was a useful strategy to manage the tension between scientific credibility and independence on the one hand and involving stakeholders and constructing contextualized messages for policy decisions on the other. Including a systematic review as a part of providing scientific support to policy decisions contributed decisively to the usability of the results. The conduit of HTA results to the policy makers was timely, concise, and consistent in its terminology, and we judge that this was more effective than any fragmented approach. The relations of trust between the researchers that had carried out the primary studies and the ones that combined the data to produce the main messages were pivotal for the success of this undertaking as well. As an intermediary organization without interests in the outcomes of the process other than to stimulate the uptake of research findings by policy makers, the ZonMw provided a neutral space where all the actors could and did meet.

The methodologies to feed HTA results into the policy process are still in an incipient stage and need further development. However, there never will be a clear cut between science and policy. Regardless of any strategy to manage the inherent tension between the two fields, much depends on the willingness and ability of researchers and policy makers to learn each other’s languages to bridge the gap.

POLICY IMPLICATIONS

This work suggests that combining research-based evidence with contextual knowledge of the policy environment and with the concerns of the involved stakeholders can contribute decisively to the impact of HTA. This finding poses a challenge to organizations that prepare HTA reports and to agencies that fund HTA to broaden their scope and to engage in the undertaking of knowledge brokering. Knowledge brokering is a relatively new area and needs to develop its methodologies and mechanisms of quality control. Intermediary organizations with a strong orientation toward evidence-based working and stable relationships with both policy makers and the research community, such as many HTA agencies, are well positioned to take up the task.

CONTACT INFORMATION

Jessika van Kammen, PhD (kammen@zonmw.nl), Senior Associate on Knowledge Transfer and Implementation, Netherlands Organisation for Research and Development ZonMw, PO Box 93245, 2509 AE The Hague, The Netherlands

Carin W. Jansen, MD, PhD (jansen@nvk.medweb.nl), Coordinator, Paediatric Association of the Netherlands, P.O. Box 20059, 3502 LB Utrecht, the Netherlands

Gouke J. Bonsel, PhD (g.j.bonsel@amc.uva.nl), Professor of Public Health Epidemiology, Department of Social Medicine, Amsterdam Medical Centre, P.O. Box 22660, 1100 DD Amsterdam, The Netherlands

Jan A. M. Kremer, PhD (j.kremer@obgyn.umcn.nl), Assistant Professor of Obstetrics and Gynecology, Radboud University Nijmegen Medical Centre, P.O. Box 9101, 65 HB Nijmegen, The Netherlands

Johannes L. H. Evers, PhD (jev@sgyn.azm.nl), Professor of Obstetrics and Gynecology, Faculty of Medicine, Maastricht University, 5202 AZ Maastricht, The Netherlands

Juriy W. Wladimiroff, PhD (j.wladimiroff@planet.nl), Professor of Obstetrics and Gynecology, Erasmus Medical Centre, P.O. Box 2040, 3000 CA Rotterdam, The Netherlands

REFERENCES

1. Agence d'évaluation des technologies et des mode d'intervention en santé. Available at: http://www.aetmis.gouv.qc.ca/site/index.php?en_publication. Accessed 2 November 2005.
2. Canadian Health Services Research Foundation and the NHS Service Delivery and Organisation R&D Program. Making evidence synthesis more useful for management and policy-making. *J Health Serv Res Policy*. 2005;10(Suppl 1). Available at: <http://select.ingentaconnect.com/rsm/13558196/contp1-1.htm>. Accessed 2 November 2005.
3. Ham C, Hunter DJ, Robinson R. Evidence based policymaking. *BMJ*. 1995;310:71-2.
4. Lomas J. Using 'linkage and exchange' to move research into policy at a Canadian Foundation. *Health Aff (Millwood)*. 2001;19:236-240.
5. Lomas J. Using research to inform healthcare managers' and policy makers' questions: From summative to interpretive synthesis. *Healthcare Policy*. 2005;1:55-71.
6. Weiss C. The many meanings of research utilisation. *Publ Adm Rev*. 1979;39:426-431.
7. World Health Organization. The Mexico statement on health research. *Knowledge for better health: strengthening health systems*. From the Ministerial Summit on Health Research; November 16-20, 2004; Mexico DF. Available at: http://www.who.int/rpc/summit/agenda/en/mexico_statement_on%20health_research2.pdf. Accessed 10 March 2005.