

Contribution of medical decision-making to consensus development conferences*

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Summary

A description is given of the consensus development conference as a method for either technology assessment or quality assurance in health care. The general features of the methodology are discussed, the Dutch approach is explained in more detail, and medical decision analysis and its potential contribution to consensus development are described. Examples are given of the use of this technique during 6 of the 22 consensus conferences held in The Netherlands since 1982.

Consensus development conference; Quality assurance; Technology assessment; Medical decision-making

Introduction

The consensus development conference in the field of health care is advocated as a method for either technology assessment or quality assurance, and can thus become an instrument of health policy. The main goal of such conferences is the establishment of criteria and guidelines pertaining to controversial subjects. Medical decision analysis can contribute to consensus development. This article describes our experience with the use of decision analysis during the process of consensus development in the Netherlands.

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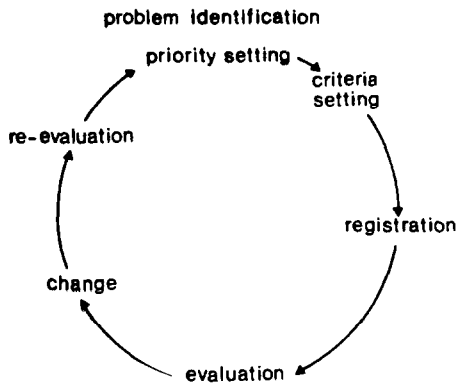


Fig. 1 Schematic representation of the circular peer review process.

Consensus development and peer review

In the Netherlands, since 1979, the National Organization for Quality Assurance in Hospitals (CBO) has promoted the introduction of a system of peer review among medical specialists. As Fig. 1 shows, the peer review system is a very simple one, each hospital having a peer review committee which coordinates the evaluation of medical activities by conducting audit studies on selected topics in a systematic way. At present, this peer review system is functioning in the majority of Dutch hospitals [1–3].

One of the problems encountered during the implementation of this system concerned the formulation of criteria. Although for many medical issues (e.g. pre-operative screening, antibiotic policy, anti-coagulation policy) physicians were able to formulate explicit criteria for good medical care from research results and from their own 'implicit' experience, some issues remained controversial and could not be solved at the local hospital level. This situation led CBO to start a consensus development program on a national level in 1982. This program is supplementary to the peer review activities in hospitals; consensus guidelines can be translated into local audit criteria in the hospitals (Fig. 2).

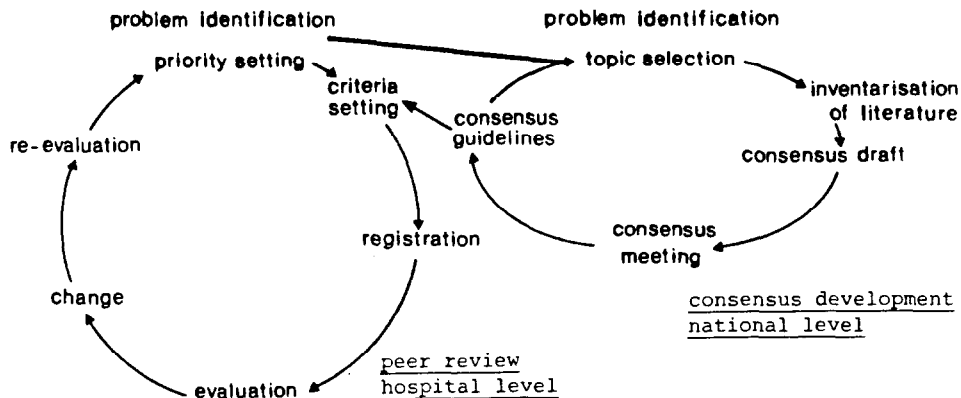


Fig. 2 Intertwinement of peer review and consensus development.

General features of a consensus development program

Consensus development programs are found in several Western industrial countries. Although the purpose and methodology of the various programs can differ to some extent, they share a general framework (Fig. 3).

This framework consists of a cyclic process, similar to the methodology of peer review. Within this framework the 4 most important features of consensus development can be recognized.

- (1) Consensus development is a group process. The participation of as many persons as possible means that a wide range of opinions will be heard and maximum commitment achieved. This implies that for most medical topics the participation of a substantial and representative part of the medical profession in the process of consensus development is essential.
- (2) Consensus development aims at integration of scientific facts and 'normative aspects' (e.g. costs and ethics). Besides the evaluation of scientific evidence, it tries to cover issues of acceptability and affordability.
- (3) The result is a set of statements which represents the state of the art. These consensus statements are seen as guidelines for the medical profession and/or government, depending on the scope of the consensus development program.
- (4) The whole process is directed to modification of behaviour. The formulation of the consensus text is only the short-term aim. For the long term the initiators of consensus development conferences hope that medical practice will conform to the lines agreed upon during the consensus conference.

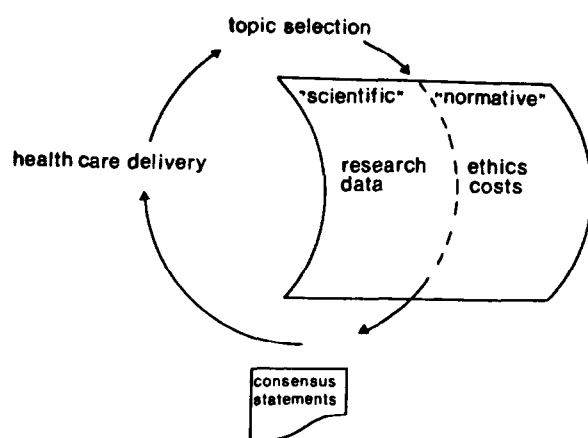


Fig. 3 General framework of consensus development.

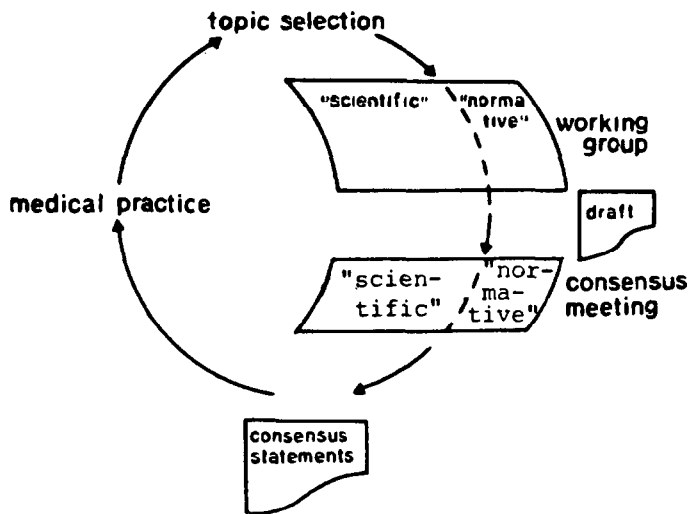


Fig. 4 Framework of CBO consensus development conferences.

The CBO consensus development methodology

The methodology of the CBO consensus development program fits into the framework shown in Fig. 3, but also has a few special characteristics [4,5] distinguishing it from the methods used in other countries (Fig. 4). For example, the CBO consensus development program is primarily directed toward the medical profession, i.e. the behaviour of medical specialists. In contrast to the programs in the U.S.A., Great Britain and Sweden, its roots are anchored in professional quality assurance rather than in technology assessment initiated by the government. Furthermore, the CBO consensus methodology is based on two group processes.

- (1) The work of a preparatory group of 'experts' who have a period of approximately 9 months to formulate tentative answers to questions posed at the beginning of the process. This group is supported by CBO staff members. Most of the experts are representatives of the scientific society in their field. The average preparatory group has 10–15 members and meets 6–10 times.
- (2) The actual consensus meeting, where all of the interested parties comment on the consensus draft. These meetings take 1 or 2 days and are attended by physicians, nurses and other health-care providers interested in the specific topic. Attendance at individual meetings varies between 80 and 1000 persons. The CBO consensus process is closely linked with the peer review activities in hospitals. Consensus guidelines are used for formulation of peer review criteria. This link, which is also supported and guided by CBO staff members, increases the chance of implementation of consensus statements in daily prac-

Table 1

Brief history of the CBO consensus development program, according to dates and subjects of the conferences

1982	Blood transfusion policy
1983	Traumatic lesions of the back Mammography policy
1984	Severe brain damage Melanoma of the skin Thrombocyte-transfusion policy
1985	Solitary thyroid nodules Prevention of bed sores Osteoporosis Foot problems of diabetic patients
1986	Diagnosis of deep venous thrombosis Non-scrotal testis Treatment of bed sores Drug addicts in prison
1987	Prevention of herpes neonatorum Haemophilia Follow-up of neoplastic colonic polyps Suspect lymph nodules in the neck Hypercholesterolaemia Diagnosis of atopic syndrome Total hip replacement Follow-up of colorectal cancer

tice. Table 1 gives an overview of the CBO consensus development program. By the end of 1987, 22 conferences will have been held.

Intertwinement of the theory of medical decision analysis and consensus development

If the consensus development conference is seen as representing a 'social analysis technique' (i.e. formulation of statements on good medical care on the basis of a structured group process), it can be compared with a formal analysis technique such as decision analysis. The following points are important features of medical decision analysis in this context.

- (a) Decision analysis is partly a 'normative' prescriptive process. Different outcome variables can be used, and the result of an analysis gives a 'prescription' for the best decision in terms of the framework of the analysis.
- (b) Decision analysis offers an explicit structure for reasoning.
- (c) Decision analysis offers a framework for the integration of data (e.g. *P*-values of different chances).
- (d) With the use of various outcome parameters, decision analysis can provide a formal structure for utility analysis, cost-benefit analysis, and cost-effectiveness analysis.

Some other features of medical decision analysis make it less popular among physicians. For example, it can be very time-consuming. A thorough analysis may take a 'skilled analyst' more than 3 months. Moreover, some of the techniques of decision analysis are difficult to comprehend. Physicians who are not at home with statistics and mathematics may avoid involvement because of becoming discouraged by the (superficial) complexity of decision trees.

Contribution of medical decision analysis to the CBO consensus development program

Although both consensus development and decision analysis have weak as well as strong points, a combination of the two techniques is thought to be reciprocally supportive on theoretical grounds. Until now, little experience has been accumulated with this combination. Pauker [6] has described his attempts to apply it during five NIH consensus development conferences; his main problems were too little time to introduce a medical decision-making strategy (he only had 2.5 days of the conference to introduce his analysis) and the lack of interest in commitment to the process of formal decision analysis on the part of the 'experts' who attended the consensus conferences.

In the Dutch situation these problems are less severe, since the expert group has a preparatory period of 9 months during which a formal decision analysis can be set up and completed. Furthermore, the early introduction of medical decision-making as an element of the consensus development methodology makes it possible to explain the techniques and improves acceptance by members of the group. Not only discussions about the construction of the tree or the formulation of the necessary assumptions but also the actual analysis can take place in collaboration with the experts.

Although the contribution of medical decision-making to our consensus development program has not been substantial so far, more and more opportunities are arising and are being taken. Table 2 gives some examples of questions raised during the process of consensus development and summarizes the various ways in which medical decision-making techniques have been used to arrive at answers.

The contribution of medical decision-making techniques to the CBO consensus development program is becoming more important. In the beginning, this contribution was limited to the use of outside material as part of the literature screened and used by the expert groups for their discussions. Later, however, we performed our own analysis. Decision analysis is becoming a more integral part of the whole consensus development program.

Table 2**Some examples of questions answered by means of medical decision-making techniques**

<i>Consensus topic</i>	<i>Questions</i>	<i>Role medical decision-making</i>
Mammography policy (Dec. 1983)	What strategy should be applied for screening?	Available decision analysis material was used by the expert group.
Diagnosis of the thyroid nodule (Jan. 1985)	In what sequence should diagnostic tests be performed (e.g. cytologic puncture, radiologic techniques)?	A special presentation was made during the conference and a conference paper was written on the decision analysis approach to the question. This analysis was based on material published in the medical literature.
Osteoporosis (May 1985)	Does the benefit of osteoporosis prevention justify administration of oestrogen to post-menopausal women, in view of the risks associated with this drug?	Special presentation and paper based on published material on medical decision making.
Diagnosis of deep venous thrombosis (April 1986)	In what sequence should diagnostic tests be performed (e.g. Doppler, plethysmography)?	Experts developed their own material to make the relative value of the different techniques explicit. Medical decision making made a supportive contribution to the final consensus statements.
Medical treatment of drug addicts in prison (Dec. 1986)	How does one assess pharmaceutical risks and ethical aspects in the treatment of drug addicts in prison?	A decision tree was used to structure the problem. This tree formed the starting point for the consensus developing process and structured the reasoning. Quantification was not pursued.
Herpes neonatorum (Jan. 1987)	What strategy should by preference be used for pregnant women with a genital HSV infection (vaginal delivery/culture and antiviral prophylaxis or caesarean section) to reduce the infant's chance of acquiring herpes neonatorum in the perinatal period?	A decision tree was developed and an analysis performed with the help of the expert group. The tree was an integral part of the conference papers and the results of the analysis were used during the consensus discussion.

Discussion

There are many points of similarity between the theoretical aspects of decision analysis and consensus development. These two methods can be integrated if 3 conditions are fulfilled. First, decision analysis can only be applied to the proper

'consensus' questions: the questions should be related to a limited number of choices and changes that can be represented in a decision tree without oversimplifying the problem. Second, decision analysis should fit into the time frame of the consensus development conference. A preparation time of 9 months gives plenty of time to perform a decision analysis simultaneously with the working-group discussions. Third, decision analysis should be accepted by the members of the working group (experts) as a meaningful contribution to their discussions. This means that the initiators of consensus development conferences must feel and convey an enthusiasm for decision analysis.

More and better use of decision analysis techniques for consensus development is both possible and useful. Consensus development is being increasingly promoted as a method for either technology assessment or quality assurance, and is therefore becoming an instrument of health policy on either a societal or a professional level. It is important that the further development of medical decision analysis should continue to be linked with consensus development conferences. Integration of formal and social analysis techniques offers the best guarantee of a sound basis for the statements and guidelines used for either medical practice or (governmental) health policy.

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