Evaluation of the
Health Economics Research Inititative
of
The Norwegian Research Council

Report of the evaluation committee

Hans Keiding
Ulf Gerdtham
Pia Maria Jonsson
Eeva Widström

January 2004

Norges forskningsråd

Norges forskningsråd
Postboks 2700 St. Hanshaugen
0131 OSLO
Telefon: 22 03 70 00
Telefaks: 22 03 70 01
Publikasjonen kan bestilles via internett:
http://www.forskningsradet.no/bibliotek/publikasjonsdatabase/
eller grønt nummer telefaks: 800 83 001

Internett: bibliotek@forskningsradet.no
X.400: S=bibliotek;PRMD=forskningsradet;ADMD=telemax;C=no;
Hjemmeside: http://www.forskningsradet.no

Grafisk design omslag:
Foto/ill. omslagsside:
Trykk:
Opplag: 100

Oslo, january 2004
ISBN 82-12- 01907-1

Evaluation Committee for
Research Centers in Health Economics

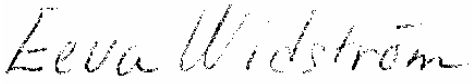
January 30, 2004

The Research Council of Norway

The work of the evaluation committee is completed, and the report of the evaluation follows as the document ”Evaluation of the Health Economics Research Inititative of The Norwegian Research Council”.

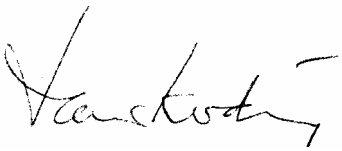
……

Professor Ulf Gerdtham
University of Lund
Sverige



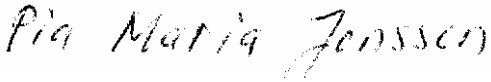
……..

Docent Eeva Widström
Stakes
Finland



……

Professor Hans Keiding
University of Copenhagen
Danmark



……..

MD, PhD Pia Maria Jonssen
Socialstyrelsen
Sverige

Short summary of report

The initiative for promotion of research in health economics was initiated in 1997 and led to the creation in 1998 of two separate research centers in health economics, namely HEB in Bergen and HERO in Oslo. The centers were funded by the Research Council of Norway as well as by the participating institutions, and it was stipulated that the performance of the centers should be evaluated after a period of five years.

The evaluation committee, which in its final version consisted of four persons with background in economics as well as the medical sciences, has carried out the evaluation on the basis of the written reports from the centers, including self-evaluations, as well as selected research publications. Furthermore, the evaluation committee visited the two research centers in August 2003 and participated in presentations and talks with members of the research environments.

Using the information obtained in this way, much of which is summarized in the chapters reporting on the two research centers separately, the committee set out to make a comparison of their performance with the ultimate aim of selecting the center which had the best results. In setting up this comparison, the committee followed the outlines stated in its terms of reference as well as general considerations of what constitutes an excellent center of research; such a research center must deliver published research of high quality, it must provide a well-functioning research environment for present and potential members, and it must establish itself as a center of knowledge and competences. Under each of these headings there are several different aspects to consider.

When the comparison of HEB and HERO was carried out according to this scheme, it became apparent not only that both have performed very well in the project period but also that even if one of the centers performed better than the other in some dimensions, the reverse would hold when other dimensions were considered. Taken as a whole, the conclusion of the committee is that although the centers have approached their task in very different ways, they have both done it with much success, and they appear to the committee as being equally good in the sense that it would not be correct on the basis of the available information to point out one of them as better than the other.

The committee then turned to the implications of the past performance as assessed above for the possible future structure of research in health economics in Norway. When the different organizational alternatives were considered from the point of view of their effects on quantity and quality of scientific work in the future research environment, it was found that a continuation of both research centers as separate units

will give the best opportunities for the future, and consequently this is what the committee recommends.

The final issue to be considered by the committee was the initiative as a means of research policy, and the committee has paid special attention to the part of the initiative consisting of creating two parallel centers, at least for a period. The committee finds that the positive effects of this construction outweighs the possible negative effects, at least in the field of science considered, and that these positive effects may be expected to be at work also in a situation where both centers have acquired a more permanent status.

Contents

Chapter 1

Introduction and terms of reference

1. The Health Economics Initiative

In recent years, the rising cost of health care has led to a growing awareness of the need for policy-relevant research to assist planning and allocation of resources. As a result of this, the field of health economics has become a very central one, and research in health economics has taken high priority in several countries.

The Norwegian initiative for promoting research in health economics was started in 1997, where several Norwegian research institutions were invited to submit proposals as main hosts or partners in a future research center in health economics.

The background for this initiative was that previous research in health economics had been carried out in small and scattered groups, making it difficult to exploit the researchers in the best possible way. The field had traditionally not been very highly esteemed by economists. Therefore, a national environment of a certain size was considered a way to increase the interest in the research field and to obtain important contributions to existing knowledge both in regard to theoretical problems and to applications. Also, it seemed important that there would be connections with students/universities. Moreover, a large center of knowledge and compentences might be an important support for the smaller research environments.

The overall vision for the initiative, when started in the fall of 1997 by the Ministry of Health and Social Affairs, the Ministry of Finance and the Research Council of Norway (RCN) (Division for Medicine and Health), was the creation of a large, theoretically significant, and viable research environment in health economics with research at the highest international level. The negotiations with different research institutions resulted in the creation by the Research Council of two separate centers in Bergen (University of Bergen/HEB) and in Oslo (University of Oslo/HERO).

The two research centers started their activities in the fall of 1998. They have been supported by an annual budget which the last years amounts to NOK 11 millions. This has been equally divided between the two centers.

The contract between the research council and each of the two research centers contained several stipulations among which the following should be mentioned:

- *Organization:* Each center must have a single administrating institution; it must have a board (”styregruppe”) making decisions about the distribution of budget

means among the participating institutions. One person in each center should carry the institutional and economic responsibility,

- *Connection between medical and economic research environments:* It was a stated goal of the initative that the research environments in medicine and economics were to become closer connected, for example by institutional arrangements (seminars, contact meetings) which make possible a mutual orientation about ongoing projects,
- *Contact between economic and medical research:* It was considered important that economists in the research environments should have contact with medical research, something which could possibly be achieved in connection with the expected entry of new researchers to the field of health economics.

The research centers were obliged to report on their activities half-yearly, showing the contributions of individual researchers as well as the actitivity as whole. Moreover, there was to be a yearly conference, to be arranged by one of the two centers. Finally, the contract contained provisions for an evaluation after a period of five years.

2. Terms of reference of evaluation committee

The framework for the work to be carried out by the evaluation committee was given in the "*mandate*" or terms of reference from the Research Council of Norway (Appendix 1). The main points were the following:

Purpose of the evaluation: The evaluation shall (a) provide the organizers with a background for decisions with the respect to future strategies in the field of health economics. Furthermore, it shall (b) give proposals for the future localization and organization of a national research environment in health economics. Finally, (c) the committee should evaluate the initiative as a means of research policy.

Users of the evaluation are decision makers in the Ministry of Health and the Ministry of Finance, the Research Council of Norway and the Directorate for Health and Social Affairs as well as the research environments themselves. It was also mentioned that the evaluation is of fundamental interest for the individual researchers and research groups in HEB and HERO who are evaluated.

Areas to be evaluated by the committee: The basic question to be answered is which of the two research environments in health economics have the best preconditions or potential for obtaining a lasting effect compared with the point of departure. In this respect the following must be taken into consideration:

- content, quality and quantity of research carried out,
- level of scientific publishing, its applicability and its integration in seminars and teaching,
- the degree to which a unified research environment has been achieved, creation of network, cooperation and comprehensive competence in the field,
- finishing of doctoral degrees, recruitment of stipendiates and guest researchers,
- number of senior researchers as part of key scientific staff,
- international contacts,

- established connections to clinical and epidemiological research environments with regard to creation of synergies from the coupling of social sciences and the clinical work,
- specificities and development potential of the research environments,
- contacts with health care organizations and administrative tasks performed,
- cooperation and division of labour between the research environments.

In the course of the evaluation, it should be verified whether the research environments have fulfilled the following demands:

- all positions should be located at one administrative unit with regard to a future single health economic research unit,
- the contribution of the mother institutions should be visualized,
- the research environment of economics should be coupled to the medical clinical environment, also in a geographical sense,
- the health economics environments should have a satisfactory infrastructure, location and network,
- the individual institutions participating should be located near to each other.

Method of evaluation. The evaluation was to be carried out using visits, interviews, review of relevant documents and reports together with a bibliometric survey and project evaluations.

The evaluation was to be carried out in the course of the year 2003, with the final report to be delivered by 31 December.

3. Members of the evaluation committee

The evaluation committee was established at the beginning of 2003 with the following composition:

1. Professor Jes Søgaard, DSI Institut for Sundhedsvæsen, Copenhagen (chairman),
2. Professor Hans Keiding, Institute of Economics, University of Copenhagen,
3. Professor Ulf Gerdtham, LUCHE, University of Lund,
4. Dr Pia Maria Jonsson, Principal Administrative Officer, The National Board of Health and Welfare, Division of Health Care and Medical Services, Stockholm,
5. Associate Professor Eeva Widström, Chief Dental Officer, Forsknings- och utvecklingscentralen för social- och hälsovården, Stakes, Helsinki.

In the beginning of December, Professor Jes Søgaard left the committee, and the task as chairman of the committee was taken over by Hans Keiding. Due to these changes the time schedule of the evaluation was revised and the date of the final report was postponed by one month.

The committee was selected in a way as to be representative both for the research tradition in health economics proper and for its applied fields in both administration and health care. The formal connection between the committee and the Research Council of Norway was taken care of by Advisor Signe Bang.

4. Work of the evaluation committee

The work of the committee took its beginning in the late spring of 2003, when the committee members received the documentation in the form of self-evaluations, half-yearly reports, and selected research papers from the two environments. The review of research papers was carried out and coordinated over the summer.

In August 2003, the committee met in Oslo and carried out visits at the two environments, in Oslo and in Bergen. The research environments presented their work in form of a seminar, and in addition key persons were interviewed by the members of the evaluation committee.

The material collected was then used for preparation of the present final report, of which the two chapters presenting factual information about the research environments, were sent to the respective research directors for comments by December 19. The comments from the research centers were incorporated in the final versions of the chapters 3 and 4.

The report has been drafted on the basis of the discussions in the committee which has discussed both general conclusions and details during their meetings as well as in the course of editing the report.

Chapter 2

Criteria for evaluation of research centers

1. Introduction

In preparing for the evalution and comparison of the two health economics research environments, the evalution committee had to consider the criteria according to which such an evaluation could be performed.

Some of these criteria were already given in the mandate, as described in the previous sections. On the other hand, the committee has found it useful to take a somewhat more basic approach to the task at hand, separating it into distinct components in order to obtain a better understanding of what is at stake.

In addition, some of the tasks of the committee according to the terms of reference, notably the suggestions for the future organization of a Norwegian center for research in health economics, as well as the evaluation of the initiative as a whole, ask for an initial consideration of the problem of creating and supporting a major research center.

Needless to say, there is no fixed and ready theory about the creation of successful research environments, and therefore the work of the committee must go beyond a mere checking of whether a list of criteria are fulfilled in a satisfactory way. Moreover, the committee members with their professional backgrounds in economics and medicine cannot rightly be considered as experts in the field of building institutions. As a consequence, what the committee can suggest must be based on the observations made and the conclusions which can be drawn using the professional insight in the relevant scientific fields together with common sense. Since the overall conclusions may depend on the observation as well as the way in which they are organized into evaluations and assessments, the committee has found it important to be as detailed as possible in spelling out not only the informational sources, but also the way of reasoning, on which these conclusions are based.

2. Evaluation criteria

The overall goal of evaluating and comparing research centers can be approached in several different ways, depending on the aspects of the activities of such a research center which is in focus, as it will be outlined below.

1. Published research: Emphasis should be put on the assessment of the amount, quality and content of the documented research as expressed in scientific publications

and means of communicating scientific output to the public (such as workshops, symposia), together with post-graduate education activity and contributions in the form of decision support to administration and decision-making in health care.

Considered in more detail, an assessment of the performance with regard to published research involves the following points:

- the research programs of the center, evaluated both from a purely scientific and from a practical point of view, its degree of innovativeness and its applicability,
- the number of published scientific publications,
- the active participation of members of the center in scientific conferences and symposia,
- the number of doctoral dissertations written and PhDs awarded,
- participation in other academical activities,
- discussion paper series of the center,
- conferences, workshops or symposia arranged by the center,
- commissioned research and participation in committee work with relations to health care,
- non-academical publication (teaching material, presentation for broader audiences).

It goes without saying that even if in most of the cases mentioned, numerical measures can be obtained and are important, the overall performance will not be fully or even adequately represented by such figures only. Research inevitably contains a qualitative aspect, and since many contributions to health economics do not only (or not at all) report on empirical findings but also contains elements of model building and theoretical reasoning, the evaluation of quality of content must indeed take priority over comparison of numbers of publications. Consequently, the reviewing of 10 research papers selected by the centers themselves is a main element in the evaluation of published research.

2. Research environment: Clearly, a research center must be assessed not only as a productive unit whose output is research publications as considered in the previous section; it is an organization which has as its goal to create a research environment, yielding not only short-term results in the form of publications but also a long-term output. The latter is less easily measured but since it is embodied in the creation of a fertile intellectual environment in which new research projects are conceived and prepared.

In order to assess the quality of the research environment, one should pay attention to the following,

- size and composition of permanent staff of experienced researchers,
- international visiting researchers and their degree of association with the center,
- number of stipendiates,
- carreer opportunities for young researchers within and outside the center,
- engagement in graduate education activities related to the research,
- recruitment of stipendiates, quality of and satisfaction with the supervision,

- local network and relations to other scientific research environments (not only related to medical sciences and health care),
- international network (including joint work with researchers abroad),
- general atmosphere and management style – is the center a pleasant workplace?

No single item here is decisive for the overall assessment, as there is no unique approach to creating a fertile research environment. Indeed, for some of the items considered above, it may be disputable whether they are indispensable or even necessary. However, it does not seem controversial that they are important in their totality, and that they should be considered when making the assessment.

3. Center of knowledge and competences: The assessment of a research center is not yet exhausted, since there are aspects of its functioning which are not captured by considering research publication and creation of a fertile intellectual environment. The center has to be a viable organizational entity in the sense that it has sufficient structure to assure for its members a satisfactory infrastructure and acceptable institutional frameworks for carrying out the basic tasks. Among the items upon which this can be judged are the following:

- a unified administrative structure,
- visible contributions to the activities of the center from its hosting institutions,
- formal structure for cooperation between professional research environments in economics and medicine,
- engagement in educational actitivities for non-specialists (students, professional training courses)
- satisfactory infrastructure (office facilities, equipment etc.),
- suitable geographical location.

Some of these items were mentioned also in the mandate, so that they would anyway be included in assessment. The importance of each item taken separately is again debatable but an evaluation of the items taken together is important.

3. Process versus end result

In the course of the evaluation, the committeee has repeatedly been made aware of the fact that the two research environments to be evaluated and compared are very different; one of them (HEB) had as its principal aim to build a research environment in health economics with no previous experience in this field, whereas the other center (HERO) aimed at collecting existing researchers and attract other researchers to this core of experienced health economists.

Even if this different nature of the two research environments did not pose serious obstacles to an evaluation of each center taken separately, it makes a comparison of achievements of the centers much more complicated. The fact that the two centers started at different positions means that the assessment to a large degree must be based on what was achieved rather than on the situation at the time of the evaluation.

On the other hand, such an approach can hardly stand alone. In principle, even if initial achievements are satisfactory, the end result may be less so (in the case where a longer span of time would be needed to create an up-to-date research environment), or there may be considerable diminishing returns to scale in research production, so that it is easier to move forward from an initial low position than to achieve front level position starting from a medium level.

What these considerations mean in practice is that comparison of the research environments has to be done with considerable care, and also that the assessment of the committee must necessarily be more open to criticism in this phase than when assessing the centers separately.

This difficulty in comparison has its bearings on the proposals of the committee for the future organization of research in health economics. If there is no simple way of establishing the superiority of one research center over the other one, it would not seem to be a good idea to choose either of them as the unique future center for research in health economics; the possibility that fertile research environments would be closed down due to such a decision would be too high. Rather, the proposals might go in the direction of unifying the two centers while retaining their distinctive advantages.

These problems will be further considered in chapter 5 of this report, following the description of the two research centers.

Chapter 3

HEB – the program for health economics in Bergen

1. Introduction

HEB, the program for Health Economic in Bergen, was inaugurated in the summer of 1998, starting its activities from the second half of the year. For the evaluation of the actitivies of HEB, the evaluation committee has used the material available in form of semiannual reports (”fremdriftsrapporter”), the self-evaluation of HEB carried out in the late spring of 2003, the 10 selected research papers, as well as the information obtained in the course of the presentation of HEB for the committee in August 2003 and the interviews with key persons carried out at this occassion.

This chapter is organized as follows: In the sections 2 and 3, a short description of the attached researchers and the organization of HEB is given. This is followed in section 4 by a consideration of the research carried out at HEB in the project period. The sections 5 to 7 consider the activities which are directed toward the outside environment, while section 8 discusses the future of HEB. Finally, section 9 contains the conclusions, summing up on strengths and weaknesses.

2. Attached researchers and research environments

The researchers at HEB have their background in the participating institutions, which are the University of Bergen (Institute of Economics and Institute of Social Medicin), the Norwegian School of Economics and Business Administration (NHH) and the Rokkan Center of social and economic research, the latter being an independent institution connected with the University of Bergen. Of these participants, the Institute of Economics is by far the most important, since most of the researchers come from this institution, and HEB has been given its own facilities within the premises of the institute, with the additional advantage that the Rokkan Center can be accessed without leaving the building. The research at the Norwegian School of Economics and Business Administration has been organized through the institute for Research in Economics and Business Administration, SNF. In addition to full-time HEB researchers at SNF, participating researchers from NHH have part-time occupation at SNF.

Table 1. Researchers financed by HEB

Category of position of researcher	Number
Professor, full time	1
Professor, part time (1/5)	3
Professor II	2
Senior Researcher, full time	4
Senior Researcher, part time (1/5)	2

HEB has been organized as an independent unit which directly employs the researchers on either full-time or part-time basis. In addition to this, the participating institutions are cooperating also financially. The program has been given high priority by the University of Bergen which has been willing to participate to a greater extent than originally contemplated, typically by financing guest professors and postdocs in the field. It was the impression of the evaluation committee that HEB was considered to be a very important initiative for the university as a whole.

The Rokkan Center which is an institution carrying out project research with external financing, plays a certain role since many of the researchers with main academic position elsewhere have a part-time occupation at HEB via their affiliation with the Rokkan Center. The participation of the Business School, which geographically is situated at some distance from the other institutions, is markedly less intense and seems to be almost marginal.

This structure of HEB, with the University of Bergen playing a decisive role and the other institutions being clearly less important, is to some degree a consequence of the fundamental principle in HEB: In order to create a viable research environment in health economics, the HEB initiative has emphasized the need for educating and specializing young researchers in this field, given that established researchers may be less willing to reconsider their professional profile in a wholehearted way. Consequently, it has been important for HEB to create an environment where young and beginning researchers may be stimulated in their initial research activity, something which could hardly be achieved if the persons involved were spread out on different localities, even if close to each other. Thus, there is a certain consequence in the structure of HEB with its high concentration of activities in one particular place, and it is the impression of the evaluation group that it gives raise to an environment which is friendly and productive for the younger researchers.

Table 1 illustrates the characteristic features of the HEB construction; there are few professors and more researchers not at senior positions; some of these researchers received their PhD in the course of the project period, one of them after a period as HEB stipendiate, thus showing that HEB has followed its plan of educating its key staff. Also, the table shows the reliance of HEB on full time researchers, with the part time professors mostly fulfilling the role of connecting with other institutions, in Norway and internationally.

The gender composition of the research staff at HEB is unequal, with few women in senior positions. HEB follows the policy of the University of Bergen to achieve gender equality and strives at making the research environment attractive for female researchers which are already there.

3. Organization

HEB has chosen a structure with most activity taking place at one locality. The formal leadership is carried out by a board with representatives of the participating institutions, among which the dean of the faculty of social sciences at the University of Bergen plays an important role.

With the emphasis on everyday activities around full-time researchers, the selection of the latter becomes correspondingly important, in particular with regard to those having the responsibility for the scientific development of the program. The evaluation committee was impressed by the effort and energy which has been put into the project by the senior researchers. The considerable weight of particular directions of research may reflect their scientific interests, but such emphasis on particular aspects seems on the other hand reasonable as it employs the available know-how in an efficient way during the start-up period.

4. Research

At the start of the project period, the HEB group planned the future research to fall into the following categories

(i) Regulation, incentives, and financing in the health care sector,
(ii) Accounting and control of the health care system,
(iii) Rules and regulation in primary health care,
(iv) Cost-effectiveness analyses and evaluations in the health care sector,
(v) Local prioritization and equality: multi-professional approaches

This categorization appears as possibly appropriate in relation to the ongoing public debate on the health care sector and its problems, but much less so as a plan for research covering a reasonably broad subset of health economic core problems. However, the visions of the research group with regard to its contributions to research in health economics has developed in the course of the project period, so that by now the division into five categories has been revised, out of which comes the following, actual categorization of HEB's research:

(1) Economic regulation of the health care sector
(2) Cost-effectiveness analyses of health interventions
(3) Resources and inequalities

Judging upon the research plans of HEB from this description of the project portfolio, it can be said that the planned research covers most relevant fields of health economics,

but on the other hand, as the headings (1)-(3) are formulated in a broad and general way, they do not convey much information to the outside world about the expertise or the particular interests of the HEB researchers. Rather it gives the impression that the plans are formulated in a way as to obtain the broadest possible support not only from existing and potential members but also from the general public. This is indeed as most such plans are initially conceived, and there is nothing inherently wrong with this approach, but it could be wished that the HEB group would be more outspoken about their individuality, even if this is perceived as risky in the particular competitive situation of the project period. Fortunately, the individuality of HEB is reappearing when actual research rather than planned research is considered.

Among the research fields which are not represented, at least not in a direct way, the most prominent probably is research in markets related to health care, among which above all the market for pharmaceutical drugs. The research group has mentioned that it plans to extend its activities in this direction, and indeed this would seem to be a step that should be taken as soon as possible.

5. Publications

The research activities of HEB are documented in its publications, which can be divided into discussion papers ("notater"), published articles, and books. With the time lags of the refereeing procedures in scientific journals (which differ much from medicine to economics, having a much longer duration in the latter), the publications of the project period will contain some work done before the start of HEB, and similarly much of the output of the last years will not yet have been through refereeing. But even so, the number of publications will, when compared to the number of discussion papers, give a useful hint of the degree to which the discussion papers end up being published.

The discussion paper series contains 50 items of which 30 are in English, the remaining ones being students' work on specific topics or reports related to specific tasks for outside organizations. The published articles amount to 32, of which 22 are in peer-reviewed international journals. The relationship 30/22 as a crude estimate of the publication rate seems satisfactory given the time lag in publishing and the fact that activity has been growing over the period, indicating that the average scientific paper will eventually be published. Of course this indication is little more than a first orientation.

The bibliometric study which comprises scientific journal articles in ISI gave a total of 18 published articles for persons affiliated with HEB, of which 8 were classified as health economics, 8 as other health related sciences, and 2 as other economic papers. This fits rather well with the numbers stated by HEB itself; moreover, it shows that HEB has been consistent with its indicated strategy of having their attached researchers doing health economics on a full-time basis.

Studies of labour markets in the health care sector have a large place in the publications, both with regard to specific labour markets such as that of nurses and employment in general, dealing with problems such as causes of sick leaves. Otherwise

it was noticed that the interests and research tasks of the group spans a broad field of topics, ranging from such where the medical aspects are predominating to papers in "pure" economics such as incentive problems and incentive-compatible contracts. Moreover, the publications show that HEB has been successful in participating with medical research environments, pointing to the existence of a well functioning contact net.

For the purpose of the evaluation, the two health economic environments were asked to select 10 publications for a closer review. The list of paper selected together with their detailed reviews is to be found in Appendix 2 of this chapter. The selection has been made in such a way as to illustrate the many different facets of the production, both with regard to topics and in style, ranging from textbooks over journal articles to PhD dissertations.

6. Attached PhD students

It has been part of the specific approach to creating a research environment in health economics that the recruitment to the group should take place as early as possible in the career of the researcher. Consequently, the PhD studies connected with HEB have a considerable weight, something which can also be seen from the fact that four PhDs, financed through HEB, have been finished in the project period. Four other PhDs at the university and the business school have had close connection with HEB throughout the program. Finally, one of the researchers in HEB finished his PhD in the project period; the topic was however not health economics.

Several new PhDs are under their way. Thus, the records of HEB in this respect are quite impressive, which should of course be seen in the light of the weight that HEB puts on this aspect of its activities. Also, it should be remarked that HEB has achieved a reasonably good flow of PhD students in the sense that so many of the study programs initiated have actually also been finished in the course of the project period. There can be several causes for this, but the well-functioning research environment in Bergen must play a role; the PhD students seemed to be satisfied with the physical surroundings and the nearness of their supervisors, which are around and available. The students with which the group had contact expressed their satisfaction with belonging to one common research group and feeling that they were part of it.

7. Relations to other sectors

As it was already mentioned, the HEB group has a rather well-developed system of contacts with different medical research environments, something which is witnessed by the large number of projects which originate in medical problems. Importantly, several of the young researchers attached to HEB have part-time occupation in clinical environments, and some of the senior researchers in HEB are medical researchers of high renown and experience. There seems therefore not to be problems in getting new interesting research problems from the medical world.

With regard to administration and health organizations, the contacts are less well-established, but it should be mentioned, that one of the full-time researchers in HEB had leave for a period while working as secretary for a committee on hospital regulation principles appointed by the Ministry of Health. The distance to Oslo may have an effect in terms of less contact to the central administration, but the limited number of such tasks being assigned to HEB researchers in the project period may be explained by the newness of HEB rather than by any lack of competences.

The outward activities of HEB are manifold: HEB conducts regular seminars on a monthly basis, taking place at the participating institutions, and it has organized international seminars on selected topics several times. With respect to university teaching, HEB has arranged a regular course in health economics for students of economics, and it has also conducted several courses in advanced topics as well as doctoral courses with international participation.

The homepage of HEB gives an informative and easy accessible survey of its activities as well as access to the research papers.

On the research side, HEB has devoted much effort towards establishing an international network. In this, they have chosen to be selective, starting with a close cooperation with the University of York, which has an experience of doing health economics which goes over several decades. This cooperation has been active in the sense that several HEB researchers have spent some time at York, and HEB has engaged researchers from York as part-time employees of HEB. In addition to this, the HEB group has established contacts with other environments both in Scandinavia and the rest of Europe.

With respect to cooperation within Norway, the cooperation has been less intense, which probably has to do with the fact that HERO, the “competing” health economic research environment in Oslo, already had contacts with most persons doing health economics at other Norwegian universities, and in the particular situation of the project period, it has not been considered as the right policy to develop closer connections with HERO than what comes naturally from the yearly conferences on health economics jointly arranged by the two research groups. There is, however, some cooperation with the University of Tromsø as well as with medical research institutions, for example Sintef (patient registers) in Trondheim.

8. Future prospects

When considering the expected development of HEB in the future, one of the main aspects is the commitment of its researchers to the initiative. Although this commitment seems high at present, there is always a possibility that researchers may want to seek employment in the capital; at least for economists there seems in general to be more prestige connected with employment in universities or administration close to government.

Directly asked about this by the evaluation group during interviews, the researchers expressed their commitment to HEB and preferences for the Bergen environment.

Also, the physical nearness to administration and decision makers was not regarded as very important, since meetings could still be arranged with short notice and performed with travels to Oslo and back on the same day. Also, the structure of HEB with its full specialization in health economics means that its researchers may find HEB as interesting and rewarding as any alternative presently open to them.

When considering the future of HEB as a coherent organization, it should be added that the HEB researchers repeatedly expressed a strong commitment for the intiative; actually this commitment appears as one of the strongest assets of HEB, shared as it seems to be not only by the participants but also by the university leadership.

9. Conclusions

HEB was constructed as a competence centre with distinct physical location and with key persons being present at a full-time basis. Its basic idea was that the research environment in health economics, which was not there at the beginning of the project period, would have to be created by attracting young researchers to the field and allowing them to specialize in this field so that they would be wholly devoted to this particular kind of research, some of them eventually becoming professors and thus teachers. As a consequence, HEB had to start with only limited competence in the field, developing it during the project period.

Working according to this plan, HEB has by now obtained a position as a research group with research at documented international level, and with a wide net of contacts to other disciplines, medical as well as economic. It has stabilized with a team of very ambitious young researchers, engaged in realizing the concept of HEB by gradual expansion of competences. This engagement, combined with the quality of the researchers formed in the project period, is unquestionable and promises good for the future. The initial intentions behind HEB must be said to have been largely fulfilled, and the research group is by now a well-established fact.

In a group as HEB with a rather small number of key persons, any single researcher carries a certain responsibility of the overall success, and correspondingly will be missed if absent. It seems however that HEB has by now developed so far that it is no longer crucially dependent on particular persons, and that also the formal responsibility and professional leadership is being broadened as compared with the initial phase.

Summing up, it is the impression of the evaluation group that HEB has achieved its original plans of creating a competence centre in health economics that is rooted in the research environment at Bergen but has nation-wide contacts to clinic and applications and an international network with respect to research.

Chapter 4

HERO – the health economics research program at the University of Oslo

1. Introduction

HERO, the Health Economic Research program at the university of Oslo, was inaugurated in the summer of 1998, starting its activities from the second half of the year.
For the evaluation of the activities of HERO, the evaluation committee has used the material available in form of semiannual reports (”fremdriftsrapporter”), the self-evaluation of HERO carried out in the late spring of 2003, the 10 selected research papers, as well as the information obtained in the course of the presentation of HERO for the committee in August 2003 and the interviews with key persons carried out at this occasion.

This chapter is organized as follows: In the sections 2 and 3, a short description of the attached researchers and the organization of HERO is given. This is followed in section 4 by a consideration of the research carried out at HERO in the project period. The sections 5 to 7 consider the activities which are directed toward the outside environment, while section 8 discusses the future of HERO. Finally, section 9 contains the conclusions, summing up on strengths and weaknesses.

2. Attached researchers and research environments

The researchers attached to HERO have their background in three different – although related – institutions with close connection to the University of Oslo, namely

(i) Department of Economics, the University of Oslo
(ii) Center for health administration (SHA) at Rikshospitalet (belonging to the faculty of medicine of the University of Oslo)
(iii) The Ragnar Frisch Centre for Economic Research,

the latter being a research institution with close relations to the Department of Economics, but independently financed by research contracts. The researchers of HERO are formally attached to one of the three institutions. A list of attached researchers can be found in Appendix 1; the total number of persons attached to HERO is larger, amounting to 44 persons. This includes PhD and master students as well as research assistants. The administrative staff consists of one person employed full-time.

It has been a basic idea behind the construction of HERO that researchers should have a root in an established scientific environment, so that the attachment to HERO would be a part time occupation. It can be seen from Table 2 that most of the attached researchers are part time employed at HERO and also that this employment is in many cases a rather small fraction of the total time. Clearly, the budget figures cannot fully describe the actual professional engagement, and it emerged from the discussion with the researchers that some of them tended to use more time on the research fields connected with HERO than what was stated in the budget. Also, the doctoral students fully or partly financed by HERO are not included.

Table 1. Researchers financed by HERO, budget year 2003

Category of position of researcher	Number
Professor, part time 1/5 – 1/4	6
Professor, part time less than 1/5	5
Senior Researcher, part time more than 4 months	2
Senior Researcher, part time less than 4 months	5

The data presented in Table 1 seem to indicate that some of the attached researchers are participating at a rather limited level; many of the professors are participating corresponding to about 2 months judging from the budget figures. Also the researchers with main occupation outside the participating institutions are attached at different levels. It must of course be taken into consideration that the tables pertain to a particular year and that they may vary over years. As it was noted above, the budget figures may understate the research in the relevant fields actually carried out, and therefore the HERO construction based on a large number of part time researchers must be judged also in the light of the research which has been carried out by its many researchers. This will be considered in the sequel.

From its beginning, HERO has chosen a strategy of connecting the research in health economics with the ongoing university research in economics proper so as to guarantee the theoretical level of the research. This means that it has been important to connect with researchers in the traditional environment so that the connection becomes more than mere intentions, and the attachment of researchers of high renown has undoubtedly served its purpose.

The committee noticed that HERO carries out its activities with only one person taking care of administration. However, some administrative tasks are taken care of by the participating institutions.

There research staff of HERO has very few women, in particular in senior positions.

3. Organization

HERO is directed by a board consisting of five persons, selected by the Faculty of Social Sciences. Three of these come from the institutions involved, and one represents the clinical environment. The fifth person is the board leader who is appointed by the Faculty of Social Sciences. The board is responsible for plans, reporting on research activities and budget, and it selects the persons having the scientific responsibility. The attached researchers are not directly employed by HERO but rather at the cooperating institutions; budget means are divided between these according to the research plans proposed by the researchers at the institutions.

It has been a basic idea for the construction of HERO that it was important to obtain involvement of the well-established research environments in economics at the Department of Economics, and this has had an impact on the recruitment policy of the group. Despite of some initial difficulties it seems that HERO has been successful in its attempts to attract researchers of renown to the field, even if the number of such researchers seems to be small.

The participating institutions are situated very close to each other (few minutes walking distance), but even so the task of making a coherent research group out of people belonging to different institutions and having different professional traditions is not a simple one. That this has by and large been achieved must to a large extent be attributed to the personal efforts of the scientific director of HERO.

With respect to international contacts in the field of health economics, HERO has had the advantage of having several members with long previous experience in health economics and with well-established networks. With regard to the other relevant disciplines, the network seems to be less well-established but it is under construction.

4. Research

The research carried out by HERO is categorized into the following fields:

1. General health services
2. Specialist health services
3. Health insurance
4. Medical drugs
5. Demand for health services
6. Prioritization and cost-utility analyses
7. The health sector in general
8. Health and labour markets

The overall impression is that HERO´s research has aimed at a broad coverage of health economic research themes, and indeed it appears as almost all-embracing. However, the systematic delineation of the research to be implemented must be considered a strength of the HERO program, and – as it will be seen below – it has been rather consistently followed up in the course of the project period.

Among the topics *not* explicitly represented in the list is research on *payment for health*, which otherwise might be thought to be at the very heart of health *economics*. To some extent it may be assumed to be covered by item 3 (health insurance), even though the general problems of organizing the payment for health care in a society goes beyond insurance theory proper. On the other hand, the research topics seem to cover most of the problems which may turn up in the general debate on the Norwegian health care sector of today.

The results of the research activity of HERO over the project period can suitably be assessed using the same systematization as above. According the reporting of HERO, of the research carried out can be grouped as follows:

In (1) *(General health services)* the group has carried out research in organization and remuneration of general practitioners, their efficiency and cost; quality improvement in general ward. Under the heading (2) (*Specialist health services)* research has been done on the effect of activity-based financing on hospital efficiency; trade-offs between quality and efficiency and comparison of hospitals. In the third group (*Health insurance*) fall contributions about genetic tests and insurance, insurance reimbursements in money or in kind, and user payments.

In the category (4) (*Medical drugs)* research projects are still in their initial phase, but in category (5) (*Demand for health and health services)* work has been done on problems related to the time structure of demand and to adaptation. In (6) (*Prioritization and cost-utility analyses)*, the researchers have carried out evaluation*s* of specific health interventions as well as evaluation of private versus public health services, and in (7) (*The health sector in general*), then main topics have been prevention of errors, eradication of infectious diseases, ethics and economic incentives. While the item (8) (*Health and labour markets)* has only projects in their initial phase, additional work has been done in setting up and coordinating health registers.

Thus, judging from this survey of fields where the HERO group has been active, the HERO group has not only planned, but also engaged in research over a wide field of topics, representing most of the subfields of contemporary health economics. The degree to which this activity has resulted in published work will be considered in the following.

5. Publications

The number of research papers written by the participants of HERO during the project period is high; the list contains 42 items which are published or accepted for publication, and a total list of 83 papers. As described above, published work covers most of the distinct fields originally selected by HERO; the fact that a considerable number of the papers are on their way to publication indicates that the work has a level which meets international standards.

The impression of the HERO group as one with a considerable publication record is confirmed by the bibliometric analysis carried out on behalf of RCN. Here the

researchers associated with HERO (listed in Appendix 1) together achieved the number of 78 ISI-indexed articles, that is approximately the same number as above. It turned out that of the 78 articles; only 13 fell within the field of health economics, whereas the remaining articles were divided into 25 concerning other health related topics, the remaining 40 being in other topics. These figures can be explained by the rather high proportion of well-established researchers in the HERO group; these researchers have also other research interests belonging to other fields.

Clearly, the quantitative measures of output, however much refined, must be supplemented by an assessment of the quality of the work. To give the evaluation committee an impression of the quality of research carried out by HERO in the project period, the group has been asked to select 10 papers to consideration by the committee. This selection was done in such a way as to give a selection of the group's work which as far as possible represents the diversity of the research carried out by HERO. Indeed the selected works included articles in scientific journals, a textbook, work based on investigations carried out for the health administration, and work done by PhD students.

As a general comment, the work shows the high standards of the HERO group as well as the broad coverage with respect to research topics. The fact that most of the papers are by now published in international journals confirms the individual reviews finding that the papers selected are solid work of research.

6. Attached PhD students

At the time of the evaluation, there were 9 PhD students attached to HERO; of these, 3 were financed by HERO itself, the others being financed by the Norwegian Research Council or by the Norwegian Physicians' Association. None of these were yet finished at the time where the evaluation group visited the research environments (August 2003). This somewhat unsatisfactory situation was partly explained by a late start of some of the PhD studies, and it has been influenced by the fact that three of PhD students had maternity leave during the period. Also, according to the persons interviewed, the long duration of the PhD studies in Oslo was due to the need for and the possibility of having additional employment or other functions during the study.

Most of the PhD students were placed at the Frisch Centre, meaning that their contacts with the HERO researchers belonging to this institution tended to be more intense than with the remaining researchers. Some of the latter will have regular activities going on at the Frisch Centre, including the contact with PhD students. It is the impression of the group from the discussions carried out at the place that the PhD students (and the young researchers in general) are rather satisfied with their research environment, but that they have professional contact with few or perhaps only a single one of the experienced researchers at HERO, and that it has been important to maintain contacts with other persons at the institutions behind HERO but not directly connected with it.

The future recruitment of PhD students with topics in the research fields of HERO seems to be facilitated by the increasing number of students writing dissertation in these topics at the master level. HERO has encouraged this development by offering

three months' employment as student assistants at HERO for some students with relevant dissertation topics; this employment amounted to 9 students in the first half of 2003.

7. Relations to other sectors

Apart from research, HERO has certain other obligations such as participation in teaching, conducting seminars, disseminating knowledge and making the know-how available for users in administration or in clinical environments.

The teaching activities related to HERO have mainly taken place at the SHA; in addition to courses for doctors at different levels, this institution has taken the initiative to establish a new bachelor-master education in health economics and health administration, where disciplines in health economics will have a prominent position. Apart from this, the researchers of HERO are giving regular courses in health economics at the Department of Economics.

HERO conducts regular open seminars, which are also a useful means of collecting the group of researchers, and it has arranged the yearly conference of Norwegian health economists together with HEB in Bergen.

The homepage of HERO gives an overview of the activities of HERO and its research projects, and it is used also to announce the seminars and other activities. Also, the working papers of the group can be downloaded from this platform. The homepage is well organized, informative and easy to use for outsiders.

For an assessment of the position of HERO in the general environment of health related research and decision making, it is important to get an impression of the network, formal as well as informal, between researchers in the university and doctors or administrators and decision makers in the health care sector. It is the impression of the evaluation group that the main contacts to clinical environments are personal contacts established during the training of doctors at the SHA, while the contacts to the administration follows the networks created through the common background in economics. The knowledge about HERO outside the university environment seems not to be impressive, something for which the clinical environments may be more to blame than HERO, and indeed it would be too early to expect that such a knowledge would be widespread.

8. Future prospects

For the full assessment of HERO, it is necessary to consider also the possible future prospects of the group of researchers, their *commitment* to the research initiative as well as the *viability* of the research group that is the degree to which the group can be assumed to continue its research in the field in the future.

For an assessment of the *commitment*, the evaluation committee has considered both objective conditions as well as the information obtained during the interviews. The overall impression is that the staffs of HERO has a genuine interest in health economic research, obvious in the case of the researchers at SHA, and also present with the many of the researchers placed in either the Department of Economics or at the Frisch Centre.

It should of course be taken into consideration that the individual researchers should not necessarily be fully engaged in health economics; quite to the contrary, it may be an advantage that the participating researchers have a broad horizon and are making active contributions in other fields. It is the impression of the evaluation committee that HERO has been able to achieve a well-functioning balance between the involvement of researchers of high international prestige and the commitment of the staff as a whole, something which is also documented by the large number of publications with its broad spectrum of themes and contributors.

9. Conclusions

HERO was constructed as a cooperation initiative between several established research environments, in particular the research group of SHA with experience in applying economics to problems of the health care sector, and researchers at the Department of Economics with a firm rooting in ”pure” economics. This combination of experience with hard-core theory – a basic idea of the research group which has been successfully realized in the course of the project period – is a main point of strength of the HERO research group, giving it a rather exceptional position also in an international setting. It should of course be taken into consideration that a specification of future research topics must represent the interests of the participating researchers as well as possible goals for the future development.

Establishing such a pairing has not been easy, and maintaining it in the future will also be no simple task. There are some inherent weakness of the construction, for example the possibility that the participating researchers, many of which have research projects in other fields, may be more attracted to other fields which may offer better facilities or more interesting research problems. As long as such researchers leaving the field may be replaced by others attracted locally or from other countries, the problem can be overcome, but it will require much effort from the group leadership in the future as it has done in the past.

For the time being, however, the HERO initiative does appear as having succeeded in connecting different competences in health economics. The advantages of the particular structure of HERO are most clear in the field of pure research at international level. The close cooperation with the English health economic research environment is understandable in view of the long experience of the latter, but the HERO group has the potential of more independent standing because of its firm rooting in theoretical economics; this is a potential which has not yet been fully exploited but possibly will be in the future.

With regard to contacts to clinical environments, the HERO group does not get particular advantages from its structure, as it does with respect to theoretically oriented

research, and indeed the records seem not to have been spectacular. It should however be remembered that establishing a contact net takes time, and the project period is a short one in this context.

Summing up, the HERO group has been successful in fulfilling the tasks of establishing a research environment which delivers research at international level, makes available the newest results and know-how for the clinic and the administration, and assists in the formation of new researchers in the field.

Chapter 5
Comparison of HEB and HERO

1. Introduction

While the previous chapters were devoted to a description of the two research centers, we shall now proceed to a comparison of their performance. In doing so, we shall be guided by the general principles considered in Chapter 2 above, which outlined the different dimensions of the activities and achievements of a research center and their components.

Consequently, the comparison will be structured into three parts, discussing *published research, research environment,* and *center of competences,* respectively. After this, the discussion is summarized and then recapitulated with explicit reference to the tasks of the evaluation committee as formulated in the terms of reference.

In the sections to follow, we discuss the different aspects of research center performance in separate sections, with the discussion summarized in a table. Following this, the Section 5 will address the main questions involved in the comparison, and a conclusion will be stated separately in Section 6.

2. Research activity

In the evaluation of the research activities of the two centres, the most important single item is of course the *published research,* considered both in its totality as research program and from a quantitative viewpoint. The qualitative aspects of the research carried out and documented in the form of publication was considered at length in the two previous chapters.

For both centers, the evaluation committee found that the research programs of the centers were impressive both in regard to breadth and depth: Both centers intended to cover a broad spectrum of problems arising both from the contemporary theoretical discussions and in practical decision making in the health care sector. These intentions were largely fulfilled by actual published research, which for obvious reasons tended to be more representative for fields where the core members of the centers had previous experience but showed a movement towards better coverage over the five years period.

For the assessment of the quality of the published research work, the committee used the information on publication by peer-reviewed journals as well as the first-hand knowledge obtained by reading a selection of published works. Both centers have selected these works in such a way that they represented different aspects of their research (journal articles, PhD dissertations, books), thus showing the contribution by the young as well as the more experienced researchers of the centers. For the

publications reviewed by the committee, the quality must be considered to be quite satisfactory, with no distinction to be made between the centers.

As already mentioned, quality of research has many dimensions, involving the thoroughness of the work, its degree of innovativeness, its applicability, and its contribution to the development of new research methodology. For both centers, the work considered performs well in all these dimensions, when compared to what could be termed ”mainstream” research in health economics. What this means is that Norwegian research makes itself known on the international level alongside with the research of other countries. It might of course be tempting to look for contributions which are outstanding, changing the outlook among researchers in the field. Although outstanding contributions are often not recognized as such at the time of their appearance, it may be assumed that such contributions will have to await a full ripening of the research environments with the resulting increase of self-confidence. As matters stand, the research is still – and quite naturally so – mainly concerned with issues which have been established elsewhere.

With respect to the *number of published works*, HERO has a somewhat better performance than HEB; this reflects to some extent the different natures of the two centers, where more researchers of HERO had previous experience in health economics; also, the difference is related to the age profile of the two researchers, HEB having a larger number of young researchers with what follows from this in the form of difficulties in accessing the journals. However, the advantage of HERO over HEB in this respect must be noticed.

In both centers, *participation in conferences* has been given high priority, as indeed it must be in research centers of this type. The centers have been active in creating networks in the scientific community, partly by using pre-existing contacts, partly by attaching experienced researchers from abroad to the centers. There is little basis for distinguishing the centers here. Both centers have sought for their international contacts in the well-established research environments in health economics, mostly in England. There seems not to be much contact to other environments, which is understandable and to some extent reasonable, since the centers had to start somewhere and may prefer to postpone a widening of their international outlook.

The *number of doctoral dissertations* completed in the research center measures several aspects of its performance; at present we are concerned with its relation to quality of research – finished dissertations have been made object of evaluation and have been found satisfactory with respect to quality, thus giving evidence of the research activity carried out. The results of HEB are so far superior than those of HERO in this respect; even after taking into consideration the adverse effects of outside causes, as mentioned in the previous chapters, it must be concluded that HEB appears as a more efficient place for educating highly *qualified* new researchers.
In both centers, the researchers are actively *participating in other academic activities,* such as referee work, participation in conference organization etc., those of HERO perhaps slightly more than those of HEB, this being due to the differences in the composition of the staff of researchers, where HERO has more experienced researchers, who tend to be more engaged in other academic activities. There seems to be no basis for distinguishing between the research centers in this respect.

Table 1. Comparison of research activity of the two centers

	HEB	HERO	COMPARISON
Research program of center	Wide range of fields of research and publications; generally high quality	Wide range of fields of research and publications; generally high quality	Both centers are highly competent and active in relevant subfields of health economics
Number of publications	30-35 published articles	40-45 published articles	HERO has a somewhat better publication record than HEB
Participation in scientific conferences	Satisfactory Active creation of network	Satisfactory Pre-existing large network in the scientific community	Both centers participating at a satisfactory level, and actively creating networks
Number of doctoral dissertations finished	8-9 PhD students attached to HEB finished, several new under their way	9 PhD students attached, none finished	HEB has been much more successful than HERO w.r.t. PhD programs
Participation in other academic activities	Teaching at doctoral courses in other countries	Several researchers are active in refereeing etc.	Both centers active
Discussion paper series	50 items, of which 30 in English	Discussion paper series well organized and plentiful	Both centers have well functioning discussion paper series
Conferences etc. arranged by the center	Seminar activities, conferences arranged every second year, teaching activities	Seminar activities, conferences arranged every second year, teaching activities	Both centers very active
Commissioned research and participation in committee work	Members of the center participating (on leave), Connection to clinical environment secured by institutional arrangement.	Several commissioned research works etc. Not yet well established contact to clinical environments	Both centers active in applying health economics, but the application of the research in the health care sector is still not very well developed
Non-academicals publication	Publication of textbook for a broad audience, participation in debate	Publication of textbook, participation in debate	Both centers active

The same may be said with respect to the *discussion paper series* which show the current research production of the centers and gives an impression of the weight which the center puts on making its research accessible easily and quickly. Both centers have a discussion paper series with a large number of items, made accessible from their home page which are well organized and easy to use, that of HERO perhaps slightly more so than that of HEB.

The centers have been engaged in *arranging conferences*, since they have had an obligation of arranging a health economics conference every year (hosted by the two

centers in turn). Otherwise, the activity has been mainly in arranging seminars at the local level, which also seems the right way of allocating the resources in an upstart phase.

Also with regard to the last two items, commissioned *research etc.*, and *non-academic publication* activities, the two centers seem to have been quite active with little basis for distinction. While the researchers of HERO, who tend to be established in the field more often than those of HEB, might get contacted more often for committee work, it seems nevertheless that HEB's researchers are catching up quite well. The outwards activity is documented by textbooks as well as other activities of the centers.

Summing up on the items which describe the research activity, as presented above and in shorter form in Table 1, it is seen first of all that both centers are doing well, and that in most cases there is little room for making a distinction in assessing their performance. Also, taking the cases where the differences are noticeable, it can be seen that these cases are equally divided among the centers. While the overall assessment is favourable, there is yet little or no room for distinction.

3. The research environments of HEB and HERO

Turning now to the aspects of *performance* of research centers which fall into the second category as described in Chapter 2, the first item to be considered here is *number and composition of staff*. Here, the differences between HEB and HERO are considerable, reflecting the different initial positions as well as different approaches to creating a research environment. While HEB was created from an initial position with almost no experience in health economic research, the formation of HERO was done by associating already established researchers in health economics with the relevant environments in economics and medicine. These differences have given rise to quite distinct ways of composing the staff; in HEB there are few experienced researchers, more young researchers, whereas HERO has a larger number of experienced researchers, all of them however associated on a part-time basis.

Both ways of organizing a research center have their advantages; while part-time association makes it possible to attract a very large number of researchers to the activities of the center, the reliance on full-time researchers enhances the development of a research environment where the individual researchers are more engaged in the activities of colleagues as well as the development of the center as a whole. It should also be taken into consideration that the organizational models of the two centers to a large extent was predetermined by the situation at the beginning of the period.

Given the differences in organizational principles, it seems that each center has made the best of its situation; HEB has succeeded in creating a young and committed research environment, while HERO has attracted researchers from the traditional disciplines of economic science and integrated them into health economics. Given these circumstances, the evaluation and comparison of HEB and HERO should be based more on the consequences of the choices of structure rather than on the structure itself.

Both centers have been very active in obtaining *international visitors* as well as in attaching international researchers to the center on a permanent basis. These invitations have not only served to give an international appearance to the activities, rather they have been the result of a wish to complement the competences of the researchers already present, both with respect to scientific experience and to ability to connect scientific activity with problems of practical health care.

The *number of stipendiates* has been touched upon above but at this point we consider it as an indication of the activities in attracting and educating young researchers. While HERO has a less remarkable record of finished PhDs than HEB, the two research centers seem to have attracted a comparable number of young researchers. This takes us to the next item, the *carreer opportunities of young researchers;* under this item, one may consider both carreers inside the research centers as outside the centers, in other institutions or organizations. Concerning the first one, the greater emphasis on full-time employment in HEB as well as the principle of educating researchers to take up new aspects of health economics speaks for a somewhat better carreer opportunity; however, this should not detract from the point that the basic idea of educating researchers is that they should have a future carreer outside the educating institution. Here, the general knowledge of what determines the future carreer of researchers is not such as making possible a distinction between researchers educated at HEB or at HERO.

The centers have been aware of the utility of establishing a *local network to other research environments* (that is, different from economics and medicine) but this has clearly not been an activity having high priority in any of the centers. The *international network* has probably been considered as more important, and both centers seem to be doing quite well in this respect, HERO perhaps somewhat better than HEB, something which again is a direct consequence of the structure, since HERO has a larger proportion of experienced researchers with a well-established network.

Turning finally to *general atmosphere and management style*, it may again be stated that both centers are doing well. However, it should be added that the evaluation committee could not avoid noticing the enthusiasm of the researchers in HEB as well as a commitment which seemed to be shared at all levels, from youngest researcher to directors of the participating institutions.

Summing up (cf. Table 2), the overall impression of the items under the present heading of ”research environment” is again that the centers are very equal in performance, even if they differ rather much in their structure. If anything, a slight preference must be given to HEB on the basis of the general atmosphere of their research environment

Table 2. Comparison of centers as research environments

	HEB	HERO	COMPARISON
Size and composition of permanent staff	Mainly full-time researchers, with few experienced and many young researchers	Many experienced researchers, almost all on part-time basis	Both centers are well staffed, but the composition differs significantly, corresponding to the different basic principles of the two centers. Both approaches have advantages and drawbacks
International visiting researchers	Several international researchers are attached on long-time basis, many short-term visitors	Several international researchers are attached on long-time basis, many short-term visitors	Both centers have been active in obtaining visits of shorter and longer duration by international researchers
Number of stipendiates	9-10 stipendiates with relation to HEB in the period, of which more than 4 finished	9-10 stipendiates related to HERO, none finished	Both centers participating at a satisfactory level, and actively creating networks
Career opportunities for young researchers	The center intends to develop by attracting and educating young researchers, so prospects are good	The young researchers have the possibility of being attached to HERO in the future, but it is not an independent part of its policy	No distinction possible
Local network and relation til other scientific research environments	Acceptable but could be intensified	Acceptable but more is desirable	Both centers have some relation with other environments, mainly other social sciences
International network and joint work with researchers abroad	HEB is active in creating a suitable international network	The international network of HERO is large and well-established	Both centers are well connected, HERO somewhat better than HEB
General atmosphere and management style	The general environment of HEB is creating a common engagement and enthusiasm	Relaxed and well-functioning, young researchers occasionally being at some distance	The engagement of the HEB researchers as well as the whole environ-ment of HEB seems slightly greater than that observed for HERO

4. Comparison of centers of competence

Under this heading, we discuss some aspects of performance which are not covered by the discussion in the previous sections but which are important for the position of a research center. These items have mainly to do with its relation to the surrounding world, comprising formal aspects such as administrative structure as well as practical interaction in the form of research communication and educative activities.

We consider first the items of *administrative structure* and *visibility of contribution of hosting institutions.* Here there were rather precise demands to the research centers from their very start. The demand for a unified structure of administration (rather than a loose aggregate of researchers) is satisfactorily met by both centers, and also the administration has been organized in such a way, that it can be seen how the resources are used and who is contributing.

Turning to the next item, the *educational activities* aimed at non-specialists, it may be stated that both centers are engaged in such activities. Apart from the more obvious among these activities, namely the courses in health economics given to students of economics and related disciplines as well as in social medicine, the researchers of HERO participate in the activities of the SHA on postgraduate education of doctors and other medical staff, and they contribute to the creation of a new graduate education in public health at this institution. The researchers of HEB are active in the Master of Health Administration program, and they have arranged shorter courses in specific topics and tools of health economics such as cost-effectiveness analysis.

A specific evaluation of these training activities carried out by the centers did not enter into the plans of the evaluation committee, and the assessment will therefore be restricted to the above consideration of the extent to which such activities were actually carried out, with no separate discussion of their quality. It seems that there is no reason for distinguishing between the performance of the centers on this level; the differences in types of activities are largely determined by the geographical placement of the centers.

With regard to *infrastructure* (offices, equipment), the two centers seem both to be suitably equipped. The location of the HEB offices in the same building and level as the department of economics and also basically in the same building as the Rokkan Center makes the infrastructure here appear as the most satisfactory; on the other hand, the location of HERO's offices is also such that all researchers are within easy walking distance of each other, so that the differences in appearance may be a reflection of the greater integration of HEB with its participating institutions, which has already been evaluated, rather than a question of infrastructure as such.

Table 3. Comparison of HEB and HERO as centers of knowledge and competences

	HEB	HERO	COMPARISON
Administrative structure	Unified structure as independent center with three participating institutions	Unified structure with three participating institutions, each being formal employer of the researchers	Both centers satisfy fully the demands for a unified administrative structure
Visibility of contributions of hosting institutions	Satisfactory	Direct consequence of the structure chosen	Both centers organized so that contributions are visible
Formal structure for cooperation between research environments in economics and medicine	Cooperation arranged via the participation institution ISF, giving a good access to medical research environments	Cooperation arranged via participating institution SHA, contact to medical research via the teaching programs for MDs.	Both centers participating at a satisfactory level, and actively creating networks
Educational activities for non-specialists	Courses for economics students, MHA courses, shorter courses for broader audiences	Health economics courses for economics students, for medical staff	Both centers are engaged in such activities
Infrastructure	Very satisfactory, researchers of HEB integrated in the existing research environments.	Researchers not physically integrated but have good facilities for seminars, meetings etc.	The infrastructures of both centers are satisfactory, but that of HEB appears as particularly attractive
Geographical location	The local arrangements are very good, but HEB may be at a disadvantage from being located in Bergen rather than Oslo	Local geographical position very good, also the position in Oslo may give an advantage	Both centers have a good location, HEB being better located in its own city than HERO but possibly at a slight disadvantage from not being located in Oslo.

Finally, when discussing *geographical location* there are two distinct aspects to be considered, namely the location within the city and the location of the city in relation to the rest of the country. For the first aspect, the location of both centers are convenient and easily accessed, with HEB perhaps more centrally located in Bergen than HERO in Oslo, a difference which however is largely attributable to the fact that Bergen is a smaller city than Oslo; what matters in this context is of course the distances between the participating institutions and – perhaps more important still – the distances to relevant medical centers which will develop into future partners.

In relation to this, the overall geographical location should be considered in relation to the tasks set for the research centers now and in the future, meaning that a location in Bergen may be as central as one in Oslo provided that the future partners and users are equally easy to access. To the extent that some of the users may be the central government and its administrative institutions, a research center located in the capital may have an easier access, although the development in means of communication makes this statement less obvious every day. Still it may be conjectured that informal contacts come about easier when people are meeting each other on many other occassions.

Summing up, the considerations made here once again confirm the impression that the two research centers both have a good record and that it is not easy to single one of them out as being better than the other one. We shall return to this problem in a later section.

5. Main problems to be evaluated: Assessment of evaluation committee

The results of the previous sections may now be exploited to provide the evaluations asked for in the terms of referee. Many of the distinct items here have been considered in detail already, allowing a rather brief treatment at this point.

Starting with *content, quality and quantity of research carried out*, then this has been one of the key points in the work of the evaluation committee, and it has been treated in detail already. Summarizing this discussion, it may be stated that HEB as well as HERO has performed well with respect to production and publication of research, not only measured by the number of discussion papers made available and articles published in refereeed journals, but also when considering the breadth and depth of these contributions. Thus, both of the centers have managed to achieve a position where they are at international level both with respect to quantity and to quality of publication. It may still be wished for that there should be more research with direct relation to clinical medical problems and problems of current health administration. In the future, better connection with health care practitioners and administrators is needed at both centers.

The number of peer-reviewed publications made by researchers attached to HERO is somewhat larger than that of HEB's researchers. However, it has to be taken into consideration that HEB has been developing from an initial position of no research in the field to that of today whereas HERO already had a stock of work in progress at its start, this difference is not considerable.

Concerning *the level of scientific publishing, its applicability and its integration in seminars and teaching*, most has already been addressed above. Both centers have achieved a satisfactory level of publishing, and with regard to the applicability of research carried out, there is still some way to go. This however is more a question of strengthening the links between the centers and the potential users of the research, something which cannot be expected to have unfolded maximally in the course of a period of only five years. Both centers have established the preconditions for a fertile cooperation between pure and applied research in the future, but much of the effort has necessarily gone into making itself known among potential users, an effort which is now starting to pay off.

With respect to the integration of its research activity into seminars and teaching, the centers have both been quite active in giving courses on all levels, from graduate to non-academical, exploiting the possibilities open in their respective geographical areas.

Both centers have been successful in establishing a *unified research environment,* involving *creation of network, cooperation and comprehensive competence* in the

field. Indeed, the centers have been keenly aware of the need for obtaining close connections with researchers nationally and internationally, and they have tried to build up a common set of values and goals for the research center. In this endeavour, HEB has been rather spectacularly successful in the sense that the shared commitment to the goal of building a competence center in health economics is very visible.

With respect to the number of *finished doctoral degrees*, HEB has an advantage over HERO. The centers have a comparable number of attached PhD students, and there seems not to be problems in recruiting them. Also, both centers are well aware of the need for attracting guest researchers.

It is a problem that there are relatively few female students; in this way the gender composition will stay unequal for many years to come. The centers seem to be equally affected by this problem.

Due to their different backgrounds, the two centers have a very different composition. On the face of it, HERO has a much larger number of senior researchers than has HEB, but taking into account the fact that most of HERO's researchers are on a part-time basis (and actually participating in rather small fractions of their total time), the numbers cannot be compared directly. As it was explained above, both centers seem to have made the best of their particular background and conditions for development.

The *international contacts* of both centers are quite satisfactory, even if they may be broadened out to show a wider horizon as the centers ripen.

Both centers have *established contacts to clinical and epidemiological research environments*, even if the intensity of these contacts still are leaving something to be desired. The contacts are established mainly through the participating medical institutions, and they have therefore been dependent on the contacts which these institutions had initially. It seems that in this respect, the contacts of HEB are at least as good as those of HERO.

When considering the *specificities and* the *development potential* of the environments, it is first of all apparent that the two research centers have strived to get the best possible out of their respective special situations: HEB has exploited its status as an institution developing its competence from making young researchers specialize, whereas HERO has engaged in combining experienced economists with researchers in health care sciences. There is little doubt that both approaches have advantages, and that these advantages seem to have been unfolded in the process. With respect to development potential, the HEB approach may be continued in the short run whereas in the longer run it would seem to be limited by the available expertice. On the other hand, HERO may as well expand from the enrollment of young researchers, so that this difference is more apparent than real.

The *contacts with health care organizations* has been touched upon repeatedly; both centers have largely done what was to be expected from them, and further intensification of these contacts – which are desirable – must come from better knowledge of the center(s) among the medical researchers; thus it is something which can only be achieved over a longer span of time. For the *involvement in administrative*

tasks, something similar may be stated, although the process of getting known presumably would be less time-consuming.

With respect to *cooperation and division of labour between research environments*, the evaluation is made complicated by the special situation of the research centers in the evaluation period. Disregarding these special circumstances, the other center would have been a natural partner for cooperation and division of labour; on the other hand, given the inherent competition in the setup, both centers have refrained from such cooperation, and any division of labour to be observed (HEB being more specialized in labour economics, HERO in for example economics of health insurance) are coincidental and derived from the initial competences of the attached researchers.

Given this situation, what can be evaluated is the cooperation and division of labour with regard to other research environments. These latter being small and few, there is little to comment on; it is natural that remaining researchers in the relevant fields are looking for cooperation with one of the two centers, and this has indeed been the case.

Summing up, we have here recapitulated the points of our discussion in Sections 2 – 4, organized so as to provide an explicit answer to the questions posed in the terms of reference. It may be added that the specific demands to be satisfied (unified administrative structure, verifiable contributions, coupling to clinical environment, infrastructure, and geographical nearness) have been checked in the course of this discussion. What emerges from the evaluation is that both of the two centers have performed well on the criteria on which it was based, in the sense that quite satisfactory results have been obtained in both centers.

6. Conclusion

As stated repeatedly, the assessment of the committee with regard to degree of fulfillments of demands and achieving general goals is that both centers have performed in a very satisfactory way. Even if it is possible to point out details where something could have been done better or where perfection still needs a future effort, the overall impression is that both centers have reached the level of a high level research environment which can make itself respected internationally and useful in applications to the domestic health care sector. Shortly phrased, both research centers must be considered as successes, considered separately.

What remains is a final evaluation of the relative positions of the two centers. Since both have been well-functioning albeit on very different premises, differentiating between them is not easy.

One of the problems in comparing the two centers is the choice of viewpoint for the evaluation, or more specifically whether it is the results achieved at any final date or the development over the period that should matter most. The ensuing difficulties for evaluation were mentioned in Chapter 2; while HEB has achieved a very impressing development in the period, from almost nothing to a full-blown research center, it may still be argued that the research level is slightly higher at HERO when considered at the date of the evaluation, even if the development is much less impressive.

Thus, there is no single formula for deciding upon which research is best, meaning that we will have to rely on our own subjective evaluation when weighing together the many different aspects of performance, where in some of them HEB is better than HERO while in others, the reverse ordering appears. Indeed, making a distinction between them, pointing out one as better than the other, even if distance from the best to the second-best would be ever so small, is something which cannot be done without a very detailed knowledge of the centers. The evaluation committee, which had to make its assessment based on the available information as described in previous chapters, has found that the available information does not permit them to give a ranking of the centers. The conclusion is therefore that both *centers have carried out the task set before them in very different, but equally satisfactory, ways.*

Chapter 6

Conclusions of the evaluation committee I: The future research center in health economics

1. Introduction

In the present section, the future organization of research in health economics in Norway will be discussed in the light of the experience as evaluated in the previous chapters. The development of two independent research centers over a five years period was not considered as a permanent arrangement, rather it was to be used as a way as to exert competitive pressure on the established research centers, making their future existence dependent on their performance in the evaluation period.

Even if competition for excellence was certainly intended, there seems not to have been at any point of time a commitment of the institutions behind the initiative to let the very existence of the centers be dependent on the outcome in the sense that one of them was to be discontinued. On the other hand, the possibility that one ot the centers could be closed down seems to have been very much in the minds of the researchers attached to the centers.

In the following, we consider the different alternatives which are conceivable for the future organization of research in health economics. These alternatives range from rather drastic changes in the present situation to almost no changes at the other extreme. Given the conclusions of the committee in the previous chapter, the closing down of both centers is an irrelevant alternative which will not be considered, so the alternatives to be discussed are the following

- closing down one of the two centers,
- merging the two centers into one,
- constructing a new center with a dual structure around the two existing centers,
- continuing both centers as independent units.

In the following, we discuss each of these alternatives in turn, and a recommendation is given at the end of the chapter.

2. Alternative I: Closing down one of the centers

This alternative, which seems to have been considered as a realistic possibility by all persons involved in the initiative, would be a logical outcome of the process of

competition between research centers. It would also have the advantage of concentrating efforts and resources in the future, assuming that the involvement of the Research Council may be reduced over the years to come.

On the other hand, implementing such a decision will have the effect of closing down one of the centers. Apart from the loss of previous efforts put into the creation of this center, which cannot all be readily switched into other activities, there is the additional problem of choosing one center in a situation where both centers have shown themselves to be very competent, none of them being clearly preferable to the other one, as described in the previous center. In such a situation, a discontinuation of any of the centers will inevitably be a wrong signal to the research community, and the consequence would be that the members of the center to be discontinued appear as less successful than those of the other center, even though this is in no way supported by an assessment of their performance.

Consequently, this alternative seems not to be a fortunate one in the particular situation, even if it might be a correct decision under other circumstances.

3. Alternative II: Merging the two centers into a single one

If the two centers are unified by the creation of a single but possibly larger research center, the negative signals connected with closing down one of them are avoided, retaining however the advantages connected with having a single center so that effort and resources are not split between separate activities.

On the other hand, there are disadvantages as well. First of all, collecting the researchers into a single center at one geographical location means that some researchers will have to move to another city. Even if this should be considered to be only a practical problem to be overcome in the course of time, there will also be difficulties in maintaining the networks created in each of the centers, thus endangering the still not fully developed connections with the medical environments.

Finally, the signalling effect of the choice of location of the new center, which presumably would be have to be located in either Oslo or Bergen, would once again run counter to what was really intended, since the creation of one center in any of these cities will be interpreted as a negative assessment of the center in the other city.

All this taken together means that the present alternative is not radically different from the first one, and the reservations against the first alternative are therefore still in force when assessing this second alternative.

4. Alternative III: A single research center with a dual structure

Creating an administrative unity consisting of two subcenters, located in Bergen and Oslo respectively, does away with negative signal effects of closing down physically one of the research centers; it also allows each subcenter to develop the contacts to medical decision makers and researchers which is so important for the functioning of a research center in health economics.

The alternative is not free of problems, however. The creation of a unified administration means that the universities of different cities must share the responsibilities of providing resources and administration for the future center. This can of course be accomplished, and it has worked well elsewhere; but there is the further perspective that a structure like this one may reduce significantly the incentives of the researchers to compete among each other for excellence in research. The commitment to the local initiative, which was so apparent when the evaluation committee visited the research centers, may very well suffer from a unification, even one where the partners retain some local autonomy.

Therefore, also this alternative seems not to be a fortunate choice, as it will reduce what is perhaps the most spectacular effect of the whole initiative, namely the creation of research environments which act in a competitive environment where it is clearly visible to each single researcher that their efforts matter.

5. Alternative IV: Continuation of both centers as independent units

The continuation of the structure as it is, with two research centers in health economics, may look as an anti-climax after five years of competitive struggle. On the other hand, as argued above, it may turn out to be the most reasonable decision in a situation where the two centers, though very different in their structure and approach, have achieved equally good results, so that closing one of them down would be appear as undeserved. The objection against having two centers with the resulting possibilities of waste of resources in parallel activities should be balanced against the apparant advantages of retaining the competitive atmosphere in the centers.

To assess the importance of competition, it should be remembered that the very manifest threat of being closed down at the end of the evaluation period if the results were to be considered unsatisfactory, there has been – and in the case of continuation of both centers – will be a permanent comparison between the centers, carried out informally by the researchers themselves and the relevant part of the scientific community. This informal rating of scientists is in general quite important – possibly more important than formal evaluations which are rare and are based on less detailed information – and the existence of two centers with essentially the same tasks will secure that each of the centers will try to keep up with the other one and hopefully surpass it. The positive effects of this incentive mechanism may realistically be considered to balance or outweigh the negative effects of spreading the efforts.

6. Conclusion

Summing up the discussion of alternative future structures of the research in health economics in Norway has led to the conclusion, that closing down one of them would have detrimental effects which cannot be balanced with whatever advantages there might be. Also, several other possible organizational models seem either to have the same negative effects or to reduce the commitment and the incentive of the researchers involved.

Consequently, the recommendation of the committee is that the existing structure is retained, so that there will be research centers in health economics both in Bergen and in Oslo. In this way one of important effects of the initiative, the competition for excellence, may be retained also beyond the evaluation period.

Needless to say, the committee has not considered the future financial arrangements for supporting such research centers, except to the extent that the alternative presupposes a funding of each of the centers at a level sufficient to keep their identities as centers intact. It does not seem unreasonable that Norway should have a research environment of this size in health economics; the details of funding is clearly beyond the competence of the committee.

Chapter 7

Conclusions of the evaluation committee I: The initiative as a whole

In this final chapter, we discuss the last of the three main purposes of this evaluation, as formulated in the terms of reference (cf. Chapter 1, Section 2), namely the evaluation of the initiative as a means of research policy.

The initiative had several distinctive features, among which the most important are (1) the amount of funds set aside for the promotion of research in health economics, and (2) the creation of two competitive research centers with the possibility that only one was to survive after the evaluation period. Clearly, the latter feature is what makes the present initiative most different from similar initiatives in other fields of science and other countries, and consequently the one which will be discussed in most detail. However, some remarks on (1) follow below.

It is rather clear even from the most casual observations that there is not constant returns to scale in the production of scientific research. What concerns us most here is that research in particular fields are not successfully promoted if the funding is too small; in the creation of a viable research environment there is a certain critical mass to be achieved, in the sense that a research environment must involve several persons with a permament commitment to the field, in most cases also structured so that it contains senior researchers as well as PhD students and yound postdoctoral researchers. Some experience may be obtained from comparison of the present Norwegian initiative with similar initiatives in other Scandinavian countries, which however have not yet been formally evaluated. The present initiative has provided a rather ample support for creating research environments, and the results seem to confirm the expectations that this is the right size of funding for such projects, indeed the initiative has to some extent succeeded in putting Norway on the world map with respect to health economics.

We now turn to the second distinctive aspect of the initiative, namely (2). As it has been mentioned repeatedly in the sequel, the creation of two parallel research centers has had spectacular effects in the sense that the work environments of the centers have been clearly influenced by the competitive pressure, the need to obtain results which are as least as good as those of the competing center. Since this was to some extent the purpose of creating parallel centers, the policy must be considered to be a success.

It may be argued that the decisions to be made with regard to the future structure of the research environment in health economics, following the present evaluation, has a bearing on the future success or failure of similar initiatives. If parallel research centers

are spurred by the threat of being closed down in case of not being evaluated as the best, the thrustworthyness of the threat, and hence the incentive, depends on whether it is carried out, or at least carried out in some cases. It has been argued in the previous chapter that the competitiveness of parallel research centers may well be something much more inherent in the academical environment, so that it will work as an current and informal evaluation of the centers, at least as important for the work efforts as the formal evaluations. This mechanism needs much less support in the form of drastical actions, closing down research institutions which are evidently lacking behind seems to be all that is needed.

What this means is that the policy of starting up several parallel research centers emerges as a quite successful approach to creation of high-level research environments. Clearly, the creation of parallel units entails a possible cost of duplication of investments and efforts. How serious this potential loss would be depends clearly on the field of science concerned. In the present case, research in health economics is not very demanding in equipment and other facilities, and the nature of the research carried out is such that duplication of research efforts – in the sense that each of the environments come up with exactly the same results – is almost inconceivable.

Summing up, the creation of competitive research environments seems to be an extremely useful tool in research policy, provided that it is used properly, that is with due regard to funding, which must be sufficient to secure that each environment is viable, and to the field of science in which research is to be promoted.

Appendices

A1. Terms of reference (mandate) of the evaluation

A2. Survey of materials used by the evaluation committee

A3. Persons interviewed by the evaluation committee

A4. Bibliometric survey

A5. Permanent staff of the two research centers

A6. List of research papers selected by the two research centers

A7. Brief CVs for the evaluation committee

Appendix 1. Terms of reference of the evaluation

Evaluering av helseøkonomisatsingen - mandat

1. Bakgrunn

Finansdepartementet, Sosial- og helsedepartementet og Forskningsrådet tok i 1997 initiativ til en satsing på helseøkonomi. Målet var å skape et stort, faglig tungt og levedyktig forskningsmiljø. Miljøet skal også representere en ressurs for beslutningstakerne i helseøkonomiske spørsmål.

For den første perioden på ca fem år, ble det tildelt to rammebevilgninger til to likestilte sentra; hhv Program for helseøkonomi i Bergen (HEB) og Helseøkonomisk forskningsprogram ved Universitetet i Oslo (HERO). I Forskningsrådet inngår satsingen som en del av Program for helsetjenester og helseøkonomi, men med en egen referansegruppe som har hatt ansvar for oppfølging og rapportering.

2. Hensikten med evalueringen

Evalueringen skal gi oppdragsgiverne (Forskningsrådet ved MHs områdestyre, Helse-departementet og Finansdepartementet) et beslutningsgrunnlag for videre strategi for feltet helseøkonomi. Evalueringskomiteen skal foreslå lokalisering og organisering av et nasjonalt hovedmiljø. Komiteen bes også vurdere selve satsingen som virkemiddel.

3. Brukerne av evalueringen

Brukere av evalueringens resultater er beslutningstakerne i Helsedepartementet, Finans-departementet, Norges forskningsråd og Sosial- og helsedirektoratet samt institusjonene/forskningsmiljøene selv. Andre hovedinteressenter er enkeltforskere og forskningsmiljøer som i ulike former er tilknyttet HEB og HERO.

4. Problemstillingene evalueringskomiteen skal vurdere

Grunnlaget for vurderingene er hvilket helseøkonomimiljø som har fått mest ut av midlene, og hvilket miljø som har størst forutsetninger eller potensiale til å få til noe varig i forhold til utgangspunktet.

Forhold som skal evalueres:

- forskningens innhold, kvalitet og omfang
- nivået på vitenskapelig publisering, anvendbarhet, integrasjon i studieopplegg, seminarer og undervisning
- i hvilken grad det er skapt et enhetlig miljø, etablert nettverk, samarbeid og samlet kompetanse på området
- produksjon av doktorgrader, rekruttering av stipendiater og gjesteforskere
- antall seniorforskere som del av kjernepersonellet
- internasjonal kontakt
- etablerte forbindelser til kliniske og epidemiologiske forskningsmiljøer - med tanke på synergieffekter av koplingen mellom samfunnsvitenskap og klinikk
- miljøenes særegenheter og utviklingsmuligheter
- kontakt med helseforetak og forvaltningsoppdrag
- samarbeid og arbeidsdeling mellom miljøene

Evalueringen skal omfatte i hvilken grad følgende krav er oppfylt:

- For alle stillingene skal det være én forvaltningsinstans med tanke på ett fremtidig helseøkonomimiljø
- Moderinstitusjonens eget bidrag til etableringen av miljøet skal synliggjøres

- Det økonomiske forskningsmiljøet og det medisinsk kliniske miljøet skal koples - også geografisk
- Helseøkonomimiljøene skal ha tilfredsstillende infrastruktur, lokaler og nettverk
- Enkeltinstitusjonene innenfor hvert hovedmiljø skal ha geografisk nær lokalisering

5. Metode

Evalueringen utføres ved besøk, intervjuer, gjennomgang av relevante dokumenter og rapporter samt bibliometri og prosjektvurderinger.

6. Evaluererne

Evalueringsgruppen består av fem personer som samlet har faglig kompetanse innenfor helseøkonomi og helsefag.

Følgende personer er oppnevnt som medlemmer av komiteen:
- Professor Jes Søgaard, DSI Institut for sundhetsvæsen, Danmark (leder)
- Professor Ulf Gerdtham, Samhällsmedicinska inst., Lunds universitet
- Dr Pia Maria Jonsson, Socialstyrelsen, Stockholm
- Professor Hans Keiding, Institut for økonomi, Universitetet i København
- Overlege Eeva Widström, Stakes, Finland

Rådgiver Signe Bang i Forskningsrådet er Forskningsrådets kontaktperson for evalueringen.

7. Rapportering

Komiteen leverer endelig rapport senest 31. desember 2003.

8. Tidsplan

Evalueringen skal foretas i løpet av 2003 med oppstart om våren og med avslutning ved årsskiftet 2003/2004. I løpet av 2004 skal det tas stilling til videre veivalg for helseøkonomisatsingen

9. Budsjett

Budsjettrammen for evalueringen er NOK 300 000. Dette inkluderer honorar pr medlem NOK 20 000 og NOK 40 000 til lederen av komiteen samt reisekostnader (hotell, mat, osv.).

Appendix 2. Survey of material used by the evaluation committee

Bibliometric survey, cf. Appendix 4

HEB:
Fremdriftsrapport: 1998, april 1999, desember 1999, mai 2000, desember 2000, april 2001, desember 2001, mai 2002, desember 2002, mai 2003.

Organisasjonskart, egenevaluering, CV, 22.5.2003

Selected research publications, cf. Appendix 6

HERO:
Fremdriftsrapport: Høsten 1998, våren 1999, høsten 1999, 2000:1, 2000:2, 2001:1, 2001:2, 2002:1, 2002:2, 2003:1

Egenevaluering

Presentasjon av HERO for evalueringskomiteen 27.08.03

Selected research publications, cf. Appendix 6

Appendix 3. Persons interviewed by the evaluation committee during the visits of the research centers

HEB:
Jan Erik Askildsen
Oddvar Kaarbøe
Kjell Haug
Mix Marie Anker Bang
Kurt Brekke
Tor Helge Holmås
Astrid Grasdal

HERO:
Tor Iversen
Michael Hoel
Grete Botten
Ole Røgeberg
Eline Aas
Sverre Grepperud

Appendix 4. Bibliometric survey

Bibliometrisk studie av helseøkonomisk forskning i Norge

1. Om formålet for oppdraget

Dette notatet dokumenterer en bibliometrisk studie som Norsk institutt for studier av forskning og utdanning (NIFU) har gjennomført på oppdrag av den pågående evalueringen av helseøkonomi i regi av Norges forskningsråd. Studien skal gi *bakgrunnsinformasjon* for evalueringen. De kvantitative bibliometriske indikatorene er basert på registreringer og søk i ISI-databaser må imidlertid settes inn i en bredere sammenheng av spesialister på feltet for å oppveie svakhetene ved for eksempel avgrensingen til ISI-indekserte artikler og for å kunne fortolke andre fagspesifikke hensyn som ikke den bibliometriske studien tar høyde for.

2. Utvalget av institusjoner og personer for studien

Området for medisin og helse i Forskningsrådet har valgt ut til sammen 36 personer for den bibliografiske studien. Navnelistene framgår av *vedlegg* 1. 18 av de selekterte personene er tilknyttet Oslomiljøet HERO gjennom ansettelse ved Senter for helseadministrasjon, Rikshospitalet, Økonomisk institutt UiO eller Frischsenteret. I tillegg kommer forskere ved Program for helseøkonomi i Bergen (HEB) som er et samarbeidsprosjekt mellom Institutt for økonomi og Institutt for samfunnsmedisinske fag ved Universitetet i Bergen, Norges Handelshøyskole (NHH), og Samfunns- og næringslivsforskning AS (SNF). Stein Rokkan Senter for flerfaglige samfunnsstudier, Rokkansenteret, har for øvrig det prosjektadministrative ansvaret for HEB.
HERO-utvalget består av 18 personer, herav to professorer med utenlandsk adresse. Stipendiater er i tillegg til forskningsassistenter og studenter ekskludert fra personutvalget.
Også for HEBs del er 18 personer utvalgt. Med unntak av ett post.doc-stipendiat har alle de utvalgte personene ved HEB en (fast) vitenskapelig stilling ved en høyskole, et universitet eller i instituttsektoren. Tre av de utvalgte personene har utenlandsk adresse og universitetstilknytning.

3. Datagrunnlag, analyseenhet og tidsperiode

Analysen tar utgangspunkt i registrerte vitenskaplige tidsskriftsartikler i Institute of Scientific Information (ISI) *National Citation Report for Norway 2002* hvor samtlige artikler har minst en norsk adresse for enten hovedforfatteren eller medforfatterne i perioden 1998-2002. Enkeltartikler utgjør analyseenheten.

Vi har videre supplert dataene fra den nevnte databasen med artikkelopplysninger fra ISIs Web of Science. Dette for å kontrollere om det er artikler som de tilknyttede utenlandske forskerne har publisert uten norsk forfatteradresse. Vi finner en rekke slike.

Dessuten har vi forsøkt å vurdere hvor dekkende bilde ISI-databasen gir av den internasjonale tidsskriftspubliseringen ved å sammenligne med publikasjonslistene til HERO og HEB samt

hjemmesider for enkelte forskere fra oversikten i *vedlegg 2*. Også disse kildene har sine svakheter, da de av ulike årsaker omfatter bare deler av tidsskriftspubliseringen. Her framkommer imidlertid flere tidsskriftsartikler samt andre publikasjonstyper som ikke er indeksert i ISI-databasen fordi de aktuelle tidsskriftene ikke inngår blant de vel 6000 tidsskriftene som ISI indekserer artikler fra.

4. Publiseringsanalyse

De bibliometriske dataene framkom gjennom forfattersøk i ISI-databasen *National Citation Report for Norway 2002* på hver av de 36 personenes etternavn og initialer. Forfatterne har bare unntaksvis oppgitt HERO eller HEB som adresse slik at disse ikke kunne brukes for å identifisere artiklene. Dermed fikk vi med en rekke artikler som har mindre eller ingen relevans til helseøkonomisk forskning i trefflisten siden forskningsfeltet for de utvalgte personene spenner fra ulike medisinske spesialiteter til økonomiske sider ved miljøspørsmål eller samferdsel. I tillegg fikk vi med enkelte homonymer (personer med samme navn). Disse ble fjernet fra materialet på bakgrunn av fra forfatterens adresse. Alle de resterende artiklene som har minst en forfatter blant de 36 utvalgte personene er med i oversikten i *tabell 1*. Dette utgjør totalt 96 artikler i den aktuelle perioden for begge miljøene.

Ut fra tittel og artikkelsammendrag har vi videre inndelt artiklene i tre kategorier, helseøkonomi, annen helse og annen økonomi. Kriteriet som er anvendt for å skille ut de helseøkonomiske artiklene er at disse skal omhandle økonomiske sider ved helse i vid forstand. Artikler uten økonomiske aspekter kommer inn i kategorien ”annen helse” mens artikler som ikke omhandler helse eller medisin faller i kategorien ”annen økonomi”. Denne avgrensningen gir oss noen tvilstilfeller spesielt i forhold til samfunnsmedisinske artikler uten økonomiske aspekter. Disse er lagt inn i kategorien ”annen helse” sammen med andre medisinske artikler uten økonomiske aspekter. Ideelt sett burde klassifiseringen vært foretatt av fageksperter på området. Vi mener likevel at den foreliggende klassifiseringen holder for vårt formål og gir et rimelig bilde av fordelingen av artiklene. *Tabell 1* viser fordelingen av artiklene i de tre kategoriene for de to miljøene. Vi ser at det er HERO som har hatt den største produksjonen av artikler innen helseøkonomi i 5-årsperioden, 13 artikler mot HEBs 8. Det er også grunn til å merke seg at forskerne knyttet til både HERO og HEB har flertallet av sine artikler utenfor helseøkonomi. Spesielt tydelig er dette for HERO som har en betydelig produksjon både innen øvrig økonomi og helsefag. Dette funnet er for så vidt ikke overraskende da forskernes er ansatt ved sine respektive universitetsinstitutter og anvendte forskningsinstitusjoner med en rekke andre spesialiteter utover helseøkonomisk forskning.

*Tabell 1: Antall ISI-indekserte artikler med medforfattere tilknyttet HERO og HEB, 1998-2002**

	Antall ISI-indekserte artikler			
	Helseøkonomi	Annen helse	Annen økonomi	Totalt
HERO	13	25	40	78
HEB	8	8	2	18
SUM	21	33	42	96

*Tabellen omfatter kun artikler med norske forfatteradresser

I tillegg har vi ved forfattersøk i ISI web of Science registrert 27 artikler i perioden som er forfattet av de tilknyttede utenlandske forskerne i de tilfellene de har publisert uten norsk forfatteradresse (15 artikler for HERO og 12 artikler for HEB). Forfatterne av disse artiklene er tilknyttet de to forskningsmiljøene i Bergen og Oslo, men publiserer i tillegg utstrakt sammen med kollegene i hjemlandene sine. Vi finner det derfor riktig å holde artiklene uten medforfattere i Norge separat i denne analysen.

Vi har videre undersøkt samsvaret mellom de ISI indekserte artiklene med publikasjonslistene for artikler på HEROs og HEBs hjemmesider i *vedlegg 2*. HERO har oppført 29 artikler i sin publikasjonsliste over fagfellevurderte artikler for perioden 1999-2003. Artikler fra 1998 er ikke oppført på listen, mens den derimot inneholder to artikler fra 2003. Videre er to av artiklene på listen trykket i *proceedings* fra et internasjonalt symposium mens to andre er trykket i bøker. Følgelig vil ingen av disse bli indeksert i ISI-databasen for 2002. Dessuten er en av artiklene fra 2002 oppført to ganger på HEROs liste. Blant de øvrige 22 artiklene der er fem forfattet av personer som ikke er med i utvalget. Videre er fire artikler forfattet av en utenlandsk forsker som ikke har medforfattere med norske adresser i disse tilfellene. Videre er fire artikler publisert i tidsskrifter som ikke er indeksert av ISI som *International Journal of Health Care Finance and Economics*. Ni av artiklene på listen er derimot indeksert av ISI i den aktuelle perioden og dermed inkludert i datagrunnlaget for HERO. I tillegg har vi med to artikler fra 1998, to fra 2000 samt en fra 2001 og en annen fra 2002 som ikke er med på HEROs liste. Sammenligningen av HEROs egen liste mot de ISI-indekserte artiklene i samme periode viser videre at datagrunnlaget for klassifiseringen i kategorien i helseøkonomi er god. Ingen av artiklene på HEROs egen liste falt i ”annen helse” eller ”annen økonomi”.
HEB har oppført 23 artikler på sin liste over publiserte artikler i perioden (i tillegg til ni som enten er eller forvente publisert i år). Når vi ser bort fra de seks artiklene som er publisert i norske tidsskrifter gjenstår 17. Av disse er tre artikler forfattet av personer som ikke er med i utvalget. Videre mangler en artikkel referanse til tidsskrift hvor den ble publisert. Åtte artikler er publisert av personer i utvalget i tidsskrift som ikke er indeksert i ISI. Dette gjelder spesielt økonomitidsskriftene *Management Accounting Research* og *Financial Accountability & Management.* Fire av helseøkonomiartiklene i utvalget finnes på HEBs egen liste og i tillegg har vi inkludert fire andre artikler fra ISI-databasen i utvalget som ikke er med i HEBs liste. I Dertil kommer total 10 ISI-indekserte artikler forfattet av HEB-tilknyttet personell med norsk adresse i kategoriene ”annen helse” eller ”annen medisin”. Ingen av disse artiklene er oppført på HEBs egen publikasjonsliste.

Vi vil nå se nærmere på forfatterne til de 21 ISI-indekserte helseøkonomiartiklene som er publisert med minst en forfatteradresse i Norge mellom 1998 og 2002. Vi justerer da antallet artikler i forhold til antallet medforfattere det er til disse artiklene for de to miljøene (dvs. at for en artikkel med tre medforfattere blir hver forfatter kreditert for 1/3 av artikkelen). Når vi korrigerer for samforfatterskap finner vi at miljøenes produksjon av helseøkonomiske artikler er 8,5 for HERO og 8,0 for HEB i den aktuelle perioden.

Analysen viser at det er noen flere forfattere til artiklene fra HEB-miljøet enn hva tilfellet er for HEROs del. Til gjengjeld har en høyere andel av de aktuelle HERO-artiklene medforfattere uten annen tilknytning til miljøet. Vi vil nå vurdere siteringen av de ISI-indekserte helseøkonomiartiklene som forskerne i de to miljøene har publisert.

5. Siteringsanalyse

For å studere siteringer kunne perioden med fordel vært forlenget da det normalt tar 3-5 år fra en artikkel publiseres til den oppnår ett toppunkt for antall siteringer. Det ble utført en siteringsanalyse av ISI-artiklene som ble klassifisert innen helseøkonomi. Pga. det relativt lave antall artikler samt at flesteparten av artiklene er fra perioden 2000-2002 er det begrenset informasjonsverdi en slik analyse kan ha. Artiklene som er publisert de siste par årene har kun i begrenset grad hatt mulighet til å bli sitert i den påfølgende vitenskapelige litteraturen. Derfor vil siteringsdataene i materialet også være svært lave.

Resultatene fra analysen viser følgende:

HEB

HEBs 8 unike artikler innen helseøkonomi oppnådde 17 siteringer. Det var i praksis kun 1 av artiklene som bidro til nesten alle siteringene. Det var artikkelen:
BR MED J (1999): HEALTH-CARE RATIONING-ARE ADDITIONAL CRITERIA NEEDED FOR ASSESSING EVIDENCE BASED CLINICAL-PRACTICE GUIDELINES/
De andre artiklene er p.t. usitert eller oppnådde kun 1 sitering.

Vi har sammenlignet siteringstallene for HEB med hva som er gjennomsnittssiteringsnivået for artikler i de aktuelle tidsskriftene. Da finner vi at HEBs artikler er sitert omtrent som verdensgjennomsnittet for artikler i (de aktuelle) tidsskriftene (innenfor samme periode). Gjennomsnittet for identiske tidsskrift/år som HEB gir et siteringstall på 16. Det vil si at "forventet" siteringstall for HEB ville være 16. Det gir en siteringsindeks for HEB på 1.06 (hvor 1.00 representerer verdensgjennomsnittet).
Som beskrevet ovenfor ble det identifisert ytterligere 12 artikler fra forskere knyttet til HEB, men hvor ingen norsk adresse var oppgitt. Disse artiklene oppnådde 22 siteringer. "Forventet" siteringsnivå for disse var 39, dvs. en siteringsindeks på 0.56.

HERO

HEROs 13 unike artikler innen helseøkonomi oppnådde 31 siteringer. Også her var den én av artiklene som bidro til det store flertallet av siteringene. Det var artikkelen:
SOCIAL SC M (1998): HELICOPTERS, HEARTS AND HIPS - USING WILLINGNESS-TO-PAY TO SET PRIORITIES FOR PUBLIC-SECTOR HEALTH-CARE PROGRAMS/

Men unntak av en artikkel som oppnådde 5 siteringer, var de andre artiklene p.t. usitert eller oppnådde kun 1 eller 2 siteringer.

Vi har sammenlignet siteringstallene for HERO med hva som er gjennomsnittssiteringsnivået for artikler i (de aktuelle) tidsskriftene de publiserer (innenfor samme periode). Da finner vi at HEROs artikler er sitert marginalt over verdensgjennomsnittet for tidsskriftene. Gjennomsnittet for et identisk tidsskrift/år som HERO gir et siteringstall på 28. Det vil si at "forventet" siteringstall for HERO ville være 28. Det gir en siteringsindeks for HERO på 1.11 (hvor 1.00 representerer verdensgjennomsnittet).

Som beskrevet ovenfor ble det identifisert ytterligere 15 artikler fra forskere knyttet til HERO, men hvor ingen norsk adresse var oppgitt. Disse artiklene oppnådde 92 siteringer. "Forventet" siteringsnivå for disse var 63, dvs. en siteringsindeks på 1.46 – betydelig over verdensgjennomsnittet. Blant disse artiklene var det to spesielt høyt siterte artikler:
BRITISH MEDICAL JOURNAL (1999): Effect of discussion and deliberation on the public's views of priority setting in health care: focus group study (31 siteringer)
JOURNAL OF RISK AND UNCERTAINTY (1998) On the contingent valuation of safety and the safety of contingent valuation: Part I - Caveat investigator (22 siteringer).

Vedlegg 1:

Oversikt over forskere ved HERO satsingen

Senter for helseadministrasjon, Rikshospitalet

1. Botten, Grete professor
2. Grepperud, Sverre forsker
3. Hagen, Terje P. professor
4. Iversen, Tor professor
5. Magnussen, Jon forsker (Sintef Unimed Helsetjenesteforskning)
6. Olsen, Jan Abel professor (Universitetet i Tromsø)

Økonomisk institutt, UiO

7. Barrett, Scott professor (Johns Hopkins University)
8. Biørn, Erik professor
9. Dolan, Paul professor II (University of Sheffield - ScHARR)
10. Førsund, Finn professor
11. Hoel, Michael Olaf professor
12. Strand, Jon professor

Frischsenteret

13. Edvardsen, Dag Fjeld forsker
14. Kittelsen, Sverre A. C. forsker
15. Kverndokk, Snorre forsker
16. Nyborg, Karine forsker
17. Røed, Knut seniorforsker
18. Aaberge, Rolf seniorforsker

Oversikt over forskere ved HEB satsingen

Rokkansenteret

1. Askildsen, Jan Erik professor
2. Bretteville-Jensen, Anne Line forsker (SIRUS)
3. Cairns, John professor (University of Aberdeen, HERU)
4. Gjesdal, Sturla forsker
5. Jones, Andrew professor (University of York)
6. Kaarbøe, Oddvar forsker

SNF

7. Kjerstad, Egil forsker II
8. Olsen, Trond professor
9. Pettersen, Inger Johanne professor
10. Schroyen, Fred førsteamanuensis
11. Bjørnenak, Trond professor
12. Modell, Sven førsteamanuensis (Kungl. Tekniska Högskole, Stockholm)
13. Gjesdal, Frøystein professor NHH/SNF

Universitetet i Bergen

14. Grasdal, Astrid post.doc.stipendiat
15. Norheim, Ole Frithjof professor (Inst. for samf.medisinske fag)
16. Aakvik, Arild forsker (Institutt for økonomi)
17. Risa, Alf Erling professor (Institutt for økonomi)
18. Haug, Kjell professor (Inst. for samf.medisinske fag)

Vedlegg 2: Institusjonenes publikasjonslister for artikler

Oversikt over artikler fra HERO hjemmedier: http://www.hero.uio.no/publications2.html

Artikler i internasjonale referebaserte tidsskrift Articles in International referee based journals	Publisher /Year / Nr	Forfatter / Author
Tittel / Title		
"Production gains from health care: what should be included in cost-effectiveness analyses?" *Social Science & Medicine, Volume 49, Issue 1, July 1999, Pages 17-26*	[▶] Elsevier/1999	Olsen, J.A. & J.,Richardson
"The interaction between predictive testing and health insurance" *In R. M. Scheffler and T. Iversen (eds.): Impact of new technology on health and health care systems: An international perspective.**	1999	Iversen, T.
"Potential effect of internal markets on hospitals' waiting time" *European Journal of Operational Research 121, pp. 467-475.*	[▶] Elsevier/2000	Iversen, T.
"The effect of capitation on GPs' referral decisions" *Health Economics, Vol. 9, Issue: 3, pp 199-210*	[▶] Wiley/2000	Iversen, T. & H. Lurås
"The Economics of Screening Programs" *In R. M. Scheffler and T. Iversen (eds.): Impact of new technology on health and health care systems: An international perspective*.*	2000	Strøm, S.
"Economic motives and professional norms: The case of general medical practice" *Journal of Economic Behaviour and Organization 43, pp. 447-471.*	[▶] Elsevier/2000	Iversen, T. & H. Lurås
"A note on eliciting distributive preferences for health" *Journal of Health Economics (19)4 (2000) pp. 541-550*	[▶] Elsevier/2000	Olsen, J.A.
"Social inequalities in cancer survival" *POPULATION STUDIES, 54 (2000), printed in Great Britain, 1-18.*	2000	Kravdal, \'d8.
"Utilitarianism and the measurement and aggregation of QALYs" *Health Care Analysis, 9, 65-76, 2001.*	2001	Dolan, P.
"EQUITY IN HEALTH: The importance of different health streams" *Journal of Health Economics (20)5 (2001) pp. 823-834*	[▶] Elsevier/2001	Dolan, P. & J.A. Olsen
"Scale, efficiency and organization in Norwegian psychiatric outpatient clinics for children " *Journal of Mental Health Policy and Economics, 4 (2), 79-90.*	[▶] ICMPE/2001	Halsteinli, V., Magnussen, J., & S.A.C. Kittelsen
"The measurement of preferences over the distribution of benefits: The importance of the	2001	Dolan, P., & A., Robinson

reference point" *European Economic Review, Volume 45, Issue 9, October 2001, Pages 1697-1709*		
"Are TTO values systematically related to anything important " *Social Science and Medicine, 54, 6, 919-929, 2001*	2001	Dolan, P. & J., Roberts
"The impact of marital status on cancer survival" *Social Science and Medicine, 52 (2001), 357-368.*	[▶] Elsevier/2001	Kravdal, Ø.
"Genetic testing when there is a mix of compulsory and voluntary health insurance" *Journal of Health Economics 21, (2002) 253-270.*	[▶] Elsevier/2002	Hoel, M. & Iversen, T.
"A cancer survival model that takes sociodemographic variations in 'normal' mortality into account: comparison with other models" *Journal of Epidemiology and Community Health 2002; 56: 309-318*	[▶] BMJ/2002	Kravdal, Ø.
"To what extent can we explain time trade-off values from other information about respondents?" *Social Science & Medicine, Volume 54, Issue 6, March 2002 Pages 919-929*	[▶] Elsevier/2002	Dolan, P., & J. Robertsc
"Is it really possible to build a bridge between cost-benefit analysis and cost-effectiveness analysis?" *Journal of Health Economics. Volume 21, Issue 5, 827-843, 2002*	2002	Dolan, P. & R., Edlin
"Distributing Health Care Economic and Ethical Issues" *Oxford University Press: 224 pp.; 0-19-263253-1*	2002	Dolan, P. & J.A., Olsen
"To what extent can we explain time trade-off values from other information about respondents?" *Social Science & Medicine, 2002/54, Issue 6*	2002	Dolan, P. & J., Roberts
"Modelling valuations for EQ-5D health states: an alternative model using differences in valuations" *Medical Care, 21, 2, 271-292, 2002*	2002	Dolan, P. & J., Roberts
"Redistribution at the Hospital" *International Tax and Public Finance 9(4): 367-378; Aug 2002*	[▶]2002	Emblem, A.W.
"The importance of micro-data for revealing income-motivated behaviour among GPs" *In B. Lindgren (ed): Individual decisions for health (Routledge, London and New York) 182-193.*	2002	Iversen, T., & H., Lurås
"Waiting time as a competitive device: an example from general medical practice" *International Journal of Health Care Finance and Economics, 2, 189-204.*	2002	Iversen, T., & H., Lurås
"The role of adaptation to disability and disease in health state valuation: a preliminary normative analysis" *Social Science & Medicine, 55, 2149-2158*	2002	Menzel, M. Dolan, P., Richardson, J., & J.A., Olsen
"Markedly Changed Age Distribution among Patients Hospitalized for Acute Myocardial Infarction" *Scand Cardio-vasc J 36, 221-224*	2002	Reikvam, Å., & T.P., Hagen
"Efficient Use of Health Care Resources: The Interaction between Improved Health and Reduced Health Related Income Loss" *International Journal of Health Care Finance and Economics 2(4): 285-296; Nov 2002*	2002	Hoel, M.
"Children, family and cancer survival in Norway" *International Journal of Cancer; 105, 261-266 (2003)*	2003	Kravdal, Ø.

Wiley-Liss, Inc.2

"Association of time preference for health with age and disease severity" *The European Journal of Health Economics 2002; 3: 120-124*	2003	Stavem K, Kristiansen IS, & J.A. Olsen

** Proceedings from Peder Sather Symposium IV (Regents of the University of California).*

Artikler i nasjonale referebaserte tidsskrift Articles in National referee based journals **Tittel / Title**	**PDF /Year / Nr**	**Forfatter / Author**
"Innføring av fastlegeordning - hva med legenes tilpasninger?" *Sosialøkonomen, nr 7/98, 26-31.*	1998/7	Iversen, T. & H. Lurås
"Utviklingen av norsk helsevesen og norsk helsepolitikk i lys av målsetninger om likhet" *Tidsskrift for Velferdsforskning, 1999, nr.4/215 - 228*	1999/4	Botten, G. & M. Skaset
"Befolkningens ønsker om helsetjenester" *Tidsskrift for Den norske lægeforening, nr 25/2000, 120:2995-9.*	[▶] 2000/25	Botten G. & O.G. Aasland
"En utfordring til verdens helsesystemer" *Liv og Helse, 5/2000, 25-27*	2000/5	Iversen, T.
"Om å sammenligne sykeshusprestasjoner" *Tidsskrift for Den norske lægeforening, nr 25/2000, 120:3035-9.*	[▶] 2000/25	Kjekshus, L. E.
"Når tiden telles - sykehuslegers tidsbruk og arbeidsoppgaver" *Tidsskrift for Den norske lægeforening, nr 12/2001, 121:1458-61 .*	[▶] 2001/12	Kjekshus, L. E. & K. Røhme
"De ventendes helse" *Tidsskrift for Den norske lægeforening, nr 19/2001, 121:2256-60.*	[▶] 2001/19	Iversen, T. & G.S. Kopperud
"Finansieringsordninger for de statlige helseforetakene" *Økonomisk Forum 4/01, 7-12 ; Tilgjengelig som PDF-Reprint.*	PDF 2001/4	Hagen, T.P., Iversen, T. & J. Magnussen
"Offentlig kjøp av private helsetjenester" *Økonomisk Forum, 4/2001, 16-20 ; Tilgjengelig som PDF-Reprint.*	PDF 2001/4	Sæther, E.M.
"Kurpengeordningen før 1980 - den glemte finansieringsordningen" *Tidsskrift for Den norske lægeforening, nr 25/2001, 121:2983-5.*	PDF 2001/25	Nerland, S., M.
"Sprekere eldre, lavere utgiftsbehov i eldreomsorgen?" *Tidsskrift for Velferdsforskning, 2002; 27: 40.*	2002/1	Hagen. T.P., Botten, G., & H. Th., Waaler
"Betalingsvillighet for behandlingsgaranti - en analyse av en befolkningsundersøkelse" *Norsk Økonomisk Tidsskrift, 2002; 114 s. 27-46*	2002/114	Kopperud, G. S.
"Fra ventelister til pasientknapphet" *Tidsskrift for Den norske lægeforening,122, 362*	[▶] 2002	Iversen, T.
"Legemangelen som ble til pasientmangel. Variasjoner i listeønsker og pasientknapphet ved innføring av fastlegeordningen" *Økonomisk forum 8/2002, 26-31.*	2002	Lurås, H., & T., Iversen
"Helse og utdanning" *Økonomisk forum 8/2002, (leder)*	2002	Kverndokk, S.

"Hvor gode er fysioterapeuter i privat praksis?" *Fysioterapeuten, 70(2), 12-18*	[▶] 2003	Kittelsen, S.A.C. & E.H. Roseng
"Ga sammenslåinger av sykehus høyere effektivitet?, Erfaringer fra Norge i 1990-årene" *Tidsskrift for Velfredsforskning, vol 5, nr 5, 2003, side 2-15*	2003	Kjekshus, L.E., Hagen, T.P.
"Behovsbasert finansiering av spesialisthelsetjenestene" *Økonomisk forum, 2003 (1): 7-12.*	2003	Hagen, T. P., Kaarbøe, O. M
"Behovsbasert finansiering av spesialisthelsetjenestene" *Tidsskrift for helse, medisin og teknikk, 2003 (1): 40-44.*	2003	Hagen

Oversikt over publiserte artikler fra HEBs hjemmesider:
http://heb.rokkan.uib.no/publications/?/pubart

Publiserte artikler

Nr: 09/03
Evaluating social policy by experimental and nonexperimental methods, *Scandinavian Journal of Economics, 104, 147-171, 2002.*
Forfatter Grasdal, Astrid, E. Bratberg and A. E. Risa

Nr: 08/03
Does early intervention with a light mobilization program reduce long term sick leave for low back pain? A three years follow-up study., *Spine. Forthcoming*
Forfatter Grasdal, Astrid, E.M.Hagen and H.R. Eriksen

Nr: 07/03
Bargaining credibility and the limits to within-firm pensions, *Annals of Public and Cooperative Economics. Forthcoming.*
Forfatter Akildsen, Jan Erik og Ireland, Norman J.

Nr: 06/03
Fastlegenes erfaringer med fastlegeordningen, *Tidsskrift for Den norske lægeforening. Akseptert for publisering i nr 10, 2003.*
Forfatter Carlsen, Benedicte

Nr: 05/03
Professional Support of Self-Help Groups: A Support Group Project for Chronic Fatigue Syndrome Patients, *British Journal of Guidance and Counselling. Forthcoming*
Forfatter Carlsen, Benedicte

Nr: 04/03
Assessing the effects of an early retirement program, *Journal of Population Economics, forthcoming*
Forfatter Bratberg, E., Holmås, T.H. and Thøgersen, Ø

Nr: 03/03
Sosial ulikhet og ulikhet i helse, *Økonomisk forum*
Forfatter Astrid L.Grasdal

Nr: 01/03
Behovsbasert finansiering av spesialisthelsetjenestene, *Økonomisk Forum, 57 (1), 7-12, 2003*
Forfatter Terje P. Hagen og Oddvar Kaarbøe

Nr: 02/03
Hagen-utvalgets innstilling - riktig diagnose, feil medisin?, *Økonomisk Forum, 57 (1), 7-12, 2003*
Forfatter Egil Kjerstad og Kjell J. Sunnevåg

Nr: 11/02
Keeping nurses at work: a duration analysis, *Health economics, 11, 2001:493-503*
Forfatter Tor Helge Holmås

Nr: 10/02
The double burden. Do combinations of career and family obligations increase sickness absence among women?, *European Sociological Review, vol 18, no 2, 223-249*
Forfatter Espen Bratberg, Svenn-Åge Dahl, Alf Erling Risa

Nr: 09/02
The Role of Gender in Long-Term Sickness Absence and Transition to Permanent Disability Benefits. Results From a Multiregister Based, Prospective Study in Norway 1990–1995, *European Journal of Public Health*
Forfatter Sturla Gjesdal and Espen Bratberg

Nr: 08/02
"Performance Measurement and Institutional Processes: A Study of Managerial Responses to Public Sector Reform", *Management Accounting Research, 12, 2001:437-464*
Forfatter Sven Modell

Nr: 07/02
Decentralisation and reliance on the controllability principle in the public sector., *Financial Accountability & Management, 17 (3), August 2001.*
Forfatter Sven Modell, Alina Lee

Nr: 06/02
Cost-effect of a light multidisciplinary treatment program compared to an extensive multidisciplinary treatment program in chronic low back pain patients on long-term sick leave. A randomized

	controlled study., *Spine, vol.27, no 9, 2002:901-1008*
Forfatter	Astrid Grasdal, E.M.H Haldorsen, J.S.Skouen og Holger Ursin
Nr: 05/02	Fra forvaltning til monopol i den norske sykehussektoren., *Økonomisk Forum, 56, nr.4, 200213-20*
Forfatter	Kurt R.Brekke
Nr: 04/02	Har alle rett på et visst antall gode leveår?, *Norsk Lægeforening, nr.25,2001:2989-81*
Forfatter	Sturla Gjesdal
Nr: 03/02	The performance of sample selection estimators to control for attrition bias., *Health economics, 10, 2001:385-398*
Forfatter	Astrid Grasdal
Nr: 02/02	Is there a right treatment for a particular patient group? Comparison of ordinary treatment, light multidisciplinary treatment, and extensive multidisciplinary treatment for long-term sick-listed employees with musculoskeletal pain., *PAIN, vol.95, 2002:49-63*
Forfatter	Ellen M. Håland Haldorsen, Astrid L. Grasdal, Jan Sture Skouen, Alf Erling Risa, Karsten Kronholm og Holger Ursin
Nr: 01/02	Kvalitetsvekst i helsevesenet, *Tidsskrift for Helse, Medisin, Teknikk, HMT, nr.6, 2001:14-45.*
Forfatter	Katarina Østergren
Nr: 26/01	Hesitation and rapid action: The new public management reforms in the Norwegian hospital sector.
Forfatter	Inger Johanne Pettersen
Nr: 13/01	Adoption of new health care services in Norway (1993-1917), *Health policy, 56 (1)*
Forfatter	Ole Frithjof Norheim, Øyvind Ekeberg, Stein A. Evensen, Marit Halvorsen og Knut Kvernebo
Nr: 11/01	The challenge of interpreting performance in health care: A study of intensive care units in Norwegian hospitals, *The european accounting review, 2001, 10:3:1-21*
Forfatter	Inger Johanne Pettersen
Nr: 10/01	Implementing management accounting reforms in the public sector: The difficult journey from intentions to effects, *Advances in health care management*
Forfatter	Inger Johanne Pettersen
Nr: 09/99	Statlig eierskap av sykehus, *Tidsskrift for Helse, Medisin, Teknikk, HMT, nr.4, 2001:24-25.*
Forfatter	Oddvar M. Kaarbøe, Egil Kjerstad
Nr: 08/99	Fra plan til marked - noen perspektiver på sykehusreformen, *Tidsskrift for den norske lægeforening, nr. 18, 2001: 2186-8*
Forfatter	Inger Johanne Pettersen
Nr: 07/99	The ecological effect of unemployment on the incidence of very low birth weight in Norway and Sweden, *Journal of health and social behaviour, 1999, vol.40 (December): 422-428*
Forfatter	Ralph Catalano, Hans-Tore Hansen, Terry Hartig
Nr: 06/01	Bounding a matching estimator. The case of a Norwegian training program., *Oxford Bulletin of economics and statistics, 62 (1):115-143*
Forfatter	Arild Aakvik
Nr: 05/01	Using time-series to detect the health effects of medical care reforms: A Norwegian example., *Social science and medicine, 0 (2000), 1-8*
Forfatter	Ralph Catalano, Hans-Tore Hansen
Nr: 19/00	Integrating management control and human resource management in public health care: Swedish case study evidence., *Financial Accountability & Management, 16(1):33-53, 2000*

Forfatter Sven Modell

Nr: 03/99 Regulating Monopolies with Worker Participation, *Economic analysis 1, 203-220.*
Forfatter Jan Erik Askildsen

Nr: 02/98 Økonomisk styring og incentivproblemer i helsesektoren: Noen forskningsutfordringer, *Sosialøkonomen 52 (3)*
Forfatter Jan Erik Askildsen, Petter Osmundsen

Appendix 5.

List of researchers attached to the research centres

(a) HEB

The Rokkan Center

Askildsen, Jan Erik professor
Bretteville-Jensen, Anne Line forsker (SIRUS)
Cairns, John professor (University of Aberdeen, HERU)
Gjesdal, Sturla forsker
Jones, Andrew professor (University of York)
Kaarbøe, Oddvar forsker
Holmås, Tor Helge forsker

SNF

Kjerstad, Egil forsker II
Olsen, Trond professor
Pettersen, Inger Johanne professor
Schroyen, Fred førsteamanuensis
Bjørnenak, Trond professor
Modell, Sven førsteamanuensis (Kungl. Tekniska Högskole, Stockholm)
Gjesdal, Frøystein professor NHH/SNF
Brekke, Kurt forsker

Universitetet i Bergen

Grasdal, Astrid post.doc.stipendiat
Norheim, Ole Frithjof professor (Inst. for samf.medisinske fag)
Aakvik, Arild forsker (Institutt for økonomi)
Risa, Alf Erling professor (Institutt for økonomi)
Haug, Kjell professor (Inst. for samf.medisinske fag)

(b) HERO

Senter for helseadministrasjon, Rikshospitalet

Botten, Grete professor
Grepperud, Sverre forsker
Hagen, Terje P. professor
Iversen, Tor professor
Magnussen, Jon forsker (Sintef Unimed Helsetjenesteforskning)
Olsen, Jan Abel professor (Univeristet i Tromsø)

Økonomisk institutt, UiO

Barrett, Scott professor (Johns Hopkins University)
Biørn, Erik professor
Dolan, Paul professor II (University of Sheffield - ScHARR)
Førsund, Finn professor
Hoel, Michael Olaf professor
Strand, Jon professor

Frischsenteret

Edvardsen, Dag Fjeld forsker
Kittelsen, Sverre A. C. forsker
Kverndokk, Snorre forsker
Nyborg, Karine forsker
Røed, Knut seniorforsker
Aaberge, Rolf seniorforsker

Appendix 6. List of research papers selected by the research centres:

HEB

1. Askildsen JE & Haug K (eds). ”Helse, økonomi og politikk: Utfordringer for det norske helsevesenet”. Cappelen Forlag, 2001 Oslo.

2. Kjerstad. “Essays on Public Policy and Private Incentives”. Dissertations in Economics No.21, Department of Economics, University of Bergen, 2001.

3. Kurt Richard Brekke. “Five Essays on Competition and Regulation in Health Care Markets”. Thesis submitted for PhD at the Department of Economics, University of Bergen.

4. Gjesdal, S. “From long-term sickness absence to disability pension. Studies on disability pension in Norway”. Thesis submitted for PhD at the Department of Health and Primary Health Care, University of Bergen.

5. Holmås, T.H. “Essays on labour markets in the health care sector”. Thesis submitted for PhD at the Department of Economics, University of Bergen.

6. Modell,S. and A.Lee, “Decentralization and reliance on the controllability principle in the public sector,” Financial Accountability & Management 17(3), August 2001, 191 – 217.

7. Haldorsen,E.M.H., A.L.Grasdal, J.S.Skouen, A.F.Risa, K.Kronholm, H.Ursin, “Is there a right treatment for a particular patient group? Comparison of ordinary treatment, light multidisciplinary treatment, and extensive multidisciplinary treatment for long-term sick-listed employees with muscoskeletal pain,” Pain 95, (2002) 49 – 63.

8. Aakvik,A., T.H.Holmås, E.Kjerstad. ”A Low-Key Social Insurance Reform: Effects of Multidisciplinary Outpatient Treatment for Back Pain Patients in Norway”. Journal of Health Economics, 2003.

9. Askildsen,J.E, E.Bratberg and Ø.A.Nilsen. ”Unemployment, Labour Force Composition and Sickness Absence: A Panel Study”. HEB Notatserie 03/02.

10. Oddvar M. Kaarbøe & Trond E. Olsen. “Career Concerns, Monetary Incentives and Job Design”. Discussion Paper, May 2003.

HERO:

1. Dolan, P., and J.A.Olsen. “Distributing health care. Economic and ethical issues. Oxford Medical Publications.” Oxford 2002.

2. Biørn, E., T.P.Hagen, T.Iversen and J.Magnussen. The effect of activity-based financing on hospital efficiency: A panel data analysis of DEA efficiency scores 1992-2000, Health Care Management Science 6, 271 – 283, 2003.

3. Gjerde,J., S.Grepperud, S.Kverndokk. ”On Adaption and the Demand for Health”. submitted to Applied Economics.

4. Halsteinli,V., S.A.C.Kittelsen and J.Magnussen, Scale, efficiency and organization in Norwegian Psychiatric outpatient clinics for children, J. Mental Health Policy Econ. 4, 79 – 90, 2001.

5. Hoel,M. and E.M.Sæther. “Public health care with waiting time: the role of supplementary private health care”, Journal of Health Economics 22 (2003), 599 – 616.

6. Hoel,M. and T.Iversen. “Genetic testing when there is a mix of compulsory and voluntary health insurance”. Journal of Health Economics 21 (2002), 253 – 270.

7. Iversen, T. and H.Lurås. “Economic motives and professional norms: the case of general medical practice.”. Journal of Economic Behaviour & Organization 43 (2000), 447 – 470.

8. Kravdal,Ø. “Children, family and cancer survival in Norway”, Int. J. Cancer 105, 261—266, (2003).

9. Reikvam, Å. and T.P.Hagen. “Markedly changed age distribution among patients hospitalized for acute myocardial infarction.” Scan Cardiovasc J 2002;36:221-4.

10. Røgeberg,O.J. “Rationality and Welfare in Becker’s Extended Utility Approach Rationality and Society”. Rationality and Society 15 (2003), 283 – 323.

Appendix 7. Brief CVs for the evaluation committee

Name:	**Hans Keiding**
Present position:	Professor (Economics) at Institute of Economics, University of Copenhagen
Education:	MSc (Economics) 1973 PhD (Economics) University of Copenhagen 1975
Research fields:	Health Economics General Equilibrium Theory Game Theory Social Choice

Membership in academic and professional committees:

- Associate Editor of Journal of Mathematical Economics, Social Choice and Welfare

---

Name:	**Eeva Widström**
Present position:	Chief Dental Officer at the National Research and Development Centre of Welfare and Health, Helsinki, Docent at Karolinska Institutet, Stockholm and University of Oulu, Finland
Education:	DDS, Ph.D, MSc (social sciences), Specialist in Clinical Dentistry
Research fields:	Dental Public Health Epidemiology Health services research

Membership in academic and professional committees:

- Immediate past president and present board member of the Council of European Chief Dental Officers
- Past President of the European Association of Dental Public Health
- Member of the Editorial Board of the Community Dentistry and Oral Epidemiology
- Member of Nordiska Ministerrådets ämbetsmannakommittee för Social- och hälsofrågor

---

Name:	**Ulf-G Gerdtham**
Present position:	Professor (Professor i folkhälsovetenskap, särskilt hälsoekonomi med inriktning på prevention och hälsofrämjande), Lund University 2001-
Education:	BA in Public Administration (Advanced Economics and Statistics), Högskolan i Örebro, 1987. PhD, Department of Health and Society, Linköpings University, 1991 (Subject: Health Economics).
Research fields:	Health economics
Awards:	Forskningsrådet för arbetsliv och socialvetenskap (2002-0376) 2003-01-01. Title: Ojämlikhet i hälsa och inkomst: En hälso-ekonomisk analys (Inequality in health and income; An health economic analysis) (Principal investigator). SEK 1 500 000.

Membership in academic and professional committees:

- International Health Economics Association (iHEA)

Name:	**Pia Maria Jonsson**
Present position:	Principal Administrative Officer, The National Board of Health and Welfare, Stockholm
Education:	MD, University of Tampere, 1981 PhD (Health Systems Research), Karolinska Institutet, Dept. of Public Health Sciences, 2001
Research fields:	Health services research: - variations in costs and quality of health services - gender equity in health care

Membership in academic and professional committees:

- Member of the OECD Expert Committee for Health Care Quality Indicators
- Expert of the Swedish National Committee on Legal Regulation of National Quality Registers
- Member of the Nordic Working Group for Quality Measurement i Health Care, Nordic Council of Ministers
- Member of the Steering Committee for National Quality Registers

---