Healthy services research

The future of health services research in the Netherlands

To the Minister of Health, Welfare and Sport

Subject: presentation of advisory report *Healthy services research.*
                  The future of health services research in The Netherlands
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Dear Minister,

In response to Parliamentary questions, your predecessor in August 2006 indicated the need for an analysis on the perspective of the knowledge infrastructure for health sciences and on the balance between 'free research' – which is risky and innovative – and 'demand-guided research'. The advisory report I hereby present to you relates to a major component of health sciences, namely health services research.

The Advisory Council on Health Research (RGO) concludes that the field of health services research has undergone a positive development in the past years and that it enjoys a high reputation both nationally and internationally. Nevertheless, the Council identifies a number of shortcomings in the knowledge infrastructure which pose an obstacle to further positive development on the one hand and hinder the use of research in policy and practice on the other. For instance, the thematic programming of the Netherlands Organisation for Health Research and Development (ZonMw), despite its many advantages, is not suitable for health services research in all its aspects. This is because of the dynamic nature of policy and practice, which raises unexpected questions, as well as the cross-thematic nature of much health services research. This means that it is sometimes not possible to fund high-quality and policy- and practice-relevant research out of the ZonMw programmes. Moreover, the funding structure for health services research is skewed between the different money flows, which puts the sector's innovative capacity under severe pressure. And finally, there is as yet not enough systematic interaction between researchers and knowledge users for society to make optimum use of the investments in knowledge production.

To address the above shortcomings, the Council makes two recommendations. Firstly, to reinforce the research infrastructure (programming and funding) in such a way that practical and policy issues can be rapidly addressed, while allowing sufficient scope for innovation on the part of the research community. And secondly, to ensure systematic and mandatory interaction between researchers and knowledge users in order to improve the exploitation of knowledge. In the report the Council considers these recommendations in detail and shows how the two objectives can be achieved.

The report has been assessed by the Standing Committee on Public Health of the Health Council of the Netherlands. I will also inform the Minister of Education, Culture and Science and the Minister of Economic Affairs of the Council's findings.

Yours sincerely,
(signed)
Professor P.J. van der Maas, MD, PhD,
Chairman Advisory Council on Health Research

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The Advisory Council on Health Research (RGO) is part of the Health Council of the Netherlands. Its remit is to advise the Ministers of Health, Welfare and Sport (VWS), Education, Culture and Science (OCW), and Economic Affairs (EZ) on priorities in health research and health services research, and on the technology development in this sector, including the accompanying infrastructure. The basic principle of the RGO is always the societal perspective.

The Health Council of the Netherlands is a member of the European Science Advisory Network for Health (EuSANH), a network of science advisory bodies in Europe.

The Health Council of the Netherlands is a member of the International Network of Agencies for Health Technology Assessment (INAHTA), an international collaboration of organisations engaged with *health technology assessment*.

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Executive summary

Background

In response to questions from the Lower House of Parliament about the knowledge infrastructure for health sciences the Minister of Health, Welfare and Sport has identified the need for an analysis by the Advisory Council on Health Research (RGO). The minister formulated two central questions: '... whether the knowledge infrastructure is of sufficient size and stability to properly address the questions regarding developments in the health care system now and in the future' and '... whether there is a good balance between free risky innovative research and demand guided research'. For both questions he requested '... a good analysis and a convincing answer' by the RGO.

Health services research in this advisory document

Health services research addresses the structure, organisation, functioning and effects of health services, and the ways in which these interact with demand for, and use of, these health services. Health services research covers the whole field of health care, i.e. cure, care and preventive healthcare.

Health services research supports the societal tasks

In 2006 the Ministry of Health, Welfare and Sport formulated the Societal Tasks as a guiding principle for the knowledge and innovation agenda of the health care sector. These tasks have recently been updated and are as follows:
1   Anticipating a growing and changing demand for healthcare
2   Living longer in good health and participate longer in society
3   Quality of care and patient safety
4   Good management and governance in the healthcare sector
5   Managing limited healthcare resources (shortages and risks).

Health services research can contribute significantly to each of these tasks. In the report a number of examples are given.

The Netherlands has a good research infrastructure that in part may be improved

Since the previous advice on health services research by the RGO in 1994 a lot has changed for the better. The majority of the research is concentrated in a number of larger institutes, researchers transfer their knowledge in a targeted manner, and the scientific and social quality of the research has increased. The establishment of the Netherlands Organisation for Health Research and Development (ZonMw) has certainly contributed to these developments. The total budget for health services research is – compared to that in other countries – adequate.

However the ratio between direct, indirect and contract funding, and the way of programming health services research at ZonMw need further improvement.

Health services research funding typically involves relatively small amounts of direct (government) funding and relatively large amounts of contract funding. This ratio can be easily explained by the large amounts of commissioned health services research. However, the ratio is now such that the ability of the field to perform 'risky, innovative research' is under pressure. This situation may endanger the stability of the research field, threaten capacity building and decrease responsiveness of the field.

Programming of health services research by ZonMw may be improved by providing less strict frameworks. Thematic programming, as such an excellent manner to create focus and mass within health research, is due to its nature not always suitable for health services research. Strict frameworks within a programme hamper flexible funding of health services research that exceeds specific

themes and prevents researchers to quickly address new questions from policy and practice.

The knowledge infrastructure

For optimal use of health services research and researchers, systematic and mandatory interaction between researchers and knowledge-users at every stage in the knowledge cycle is crucial. This interaction is still rare, which results in suboptimal use of knowledge.

Recommendations

The RGO makes two main recommendations to the Ministry of Health, Welfare and Sport, researchers, research funders and the health care sector.

1   Reinforce the research infrastructure in such a way that practical and policy issues can be rapidly addressed, while allowing sufficient scope for innovation on the part of the research community.

   a   *Put in place a broad and flexible programme of health services research*
       The shortcomings of the current thematic programming are such that they justify the establishment of a separate ZonMw programme on the theme of health services research. This programme should be based on the knowledge agenda for health services research (recommendation 2a) and should provide for research funding that is sufficiently flexible to afford scope both for addressing ad hoc issues and for developing stable, continuous lines of research.

   b   *Promote well-balanced health services research funding*
       A healthy balance between direct, indirect and contract funding will ensure that the necessary innovation capacity is sustained. This healthy balance can be achieved by allocating direct funding in proportion to the power of the research group in question to attract contract funding.

   c   *Promote equitable funding allocation within the ZonMw Open Programme*
       Prioritisation within the Open Programme would better reflect the frequently high quality of the research proposals if it were to focus on strengths rather than on the weaknesses: the inherent methodological vul-

nerability that inevitably results from the complexity of health services research.

d *Create PhD fellowships*
PhD fellowships enable junior researchers to enhance theoretical and/or methodological aspects of their research. This effort to enrich the training of young researchers is aimed at guaranteeing high-quality capacity building.

e *Stimulate international comparative research*
Even though health services research often deals with regional/national issues, international experiences are highly valuable. Therefore, maximally use foreign experiences by stimulating international comparative research.

2 Ensure systematic and mandatory interaction between researchers and knowledge-users in order to improve the exploitation of knowledge

a *Formulate the knowledge agenda for health services research interactively*
The knowledge agenda should be developed through an interactive exploration. This type of exploration not only serves to identify and prioritise the topics for the knowledge agenda but also provides a platform for systematic interaction between researchers and different groups of knowledge-users (central government, care providers, insurers, patients, municipal authorities, etc.). To flesh out the practical details one can draw on the experiences of organisations such as ZonMw. The knowledge agenda serves as the basis for the broad and flexible public research programme mentioned in recommendation 1a.

b *Encourage cooperation between centres of expertise and knowledge-users*
Cooperation between centres of expertise and knowledge-users can be further promoted by giving relevant organisations (such as healthcare facilities, insurers and municipalities) a firm place within the knowledge infrastructure through the creation of workplaces for researchers within these organisations.

c *Promote implementation and an understanding of success and failure factors*

Stipulate that the researchers and knowledge-users jointly draw up an implementation plan for health services research projects in advance and then review the projects afterwards to determine the extent to which the goals described in the plan have been achieved. The scientific foundations for implementation strategies can be laid with the aid of implementation research.

d *Make evaluation a formal component of every transition in policy and health care practice*

When embarking on new policy or new interventions, provision should be made from the outset for fixed time points for assessment in order to allow for the evaluation of policy and decisions. Both researchers and the institutions directly involved in the new policy or intervention should take part in the evaluation.

e *Instruct researchers and knowledge-users about each other's working practices*

Open communication and mutual respect between the players in the knowledge cycle can be promoted by instructing researchers about policy and decision-making processes and instructing knowledge-users about how the research process operates.

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Introduction

1.1   Why this report?

Today's high level of population health in the Western countries could only have been achieved thanks to sustained and substantial investments in scientific research in a wide range of disciplines. However, the effective application of the obtained research results is only possible at a high degree of social organisation, both within and beyond the healthcare sector.

These days, ten percent of the Dutch labour force is employed in the healthcare sector and the sector accounts for around ten percent of the total economy. This sector has become appreciably more dynamic in recent years, not least owing to the recent reform of the health insurance system.

This reform has led to a change in the roles of and the relationships between the various actors in the healthcare sector, such as insurance companies, professional groups, healthcare institutions, patient organisations, supervisory bodies and the Ministry of Health, Welfare and Sport. In the case of the latter, all this has meant that, among other things, it has taken 'a step back' from the field of healthcare.

A responsible and sustainable interpretation of these new roles requires a thorough knowledge not only of the current situation in public health and healthcare, but also of the possible implications of policy decisions in these fields. As it happens, health services research in particular is aimed at acquiring this knowledge.

For health services research to provide adequate responses to the questions posed by policy makers and other actors in the healthcare sector, it is crucial that the knowledge infrastructure functions well and facilitates the exchange of knowledge and questions between researchers and policy makers.

On 6 August 2006 the then Minister of Health, Welfare and Sport informed the Lower House of Parliament that he had requested the Advisory Council on Health Research (RGO) to consider the question 'whether the knowledge infrastructure is of sufficient size and stability to properly address the questions regarding developments in the healthcare system now and in the future'. The minister also requested an analysis from the Council on 'whether there is a good balance between free risky innovative research and demand-led research'.[1] These questions from the minister prompted the Council to include this topic in its work programme for 2007. The result is this advisory report on health services research in the Netherlands.

In line with its report on health services research published in 1994, the Council defines 'health services research' as follows:

Health services research addresses the structure, organisation, functioning and effects of health services, and the ways in which these interact with demand for, and use of, these health services. Health services research covers the whole field of healthcare, i.e. cure, care and preventive healthcare.[2]

1.2 Definitions

The concepts of *knowledge*, *knowledge infrastructure* and *knowledge cycle* play such a crucial role in this report that they deserve a short explanation at the outset.

Knowledge is regarded by the Council as information which has been gathered, interpreted and published on the basis of broadly accepted rules for scientific research and in a verifiable manner. Such knowledge has been evaluated by professional peers in terms of its quality and reliability. The integrated results of scientific research are often described by the term *evidence*. Although in some circles this term has acquired a negative connotation of scientific dogmatism, it is actually usually intended to indicate scientific creativity and transparency. In this report the Council uses the term knowledge as defined above. Of course there are also other forms of knowledge, such as knowledge accumulated from experience, which is also of great value in healthcare, in policy making and in the

knowledge cycle. However, this report concentrates on scientific knowledge which meets the conditions of transparency, verifiability and preferably generalisability.

The *knowledge cycle* comprises the process by which knowledge users and knowledge producers contribute on the basis of their own responsibilities to the production and application of this knowledge. Four stages can be distinguished in this process (figure 1):
1 problem articulation and research planning: the formulation of research questions and the drafting of research agendas and research programmes
2 knowledge production: the conduct of research in order to answer research questions and increase knowledge
3 dissemination and implementation of knowledge: the dissemination of knowledge, its translation into policy and practice, and the implementation (or arranging the implementation) of policy or interventions based on new knowledge
4 evaluation of policy or interventions: the measurement of the effects of new policy or interventions.

The notion of cycle is used here because the results of each evaluation can be used as the starting point for a new problem articulation.
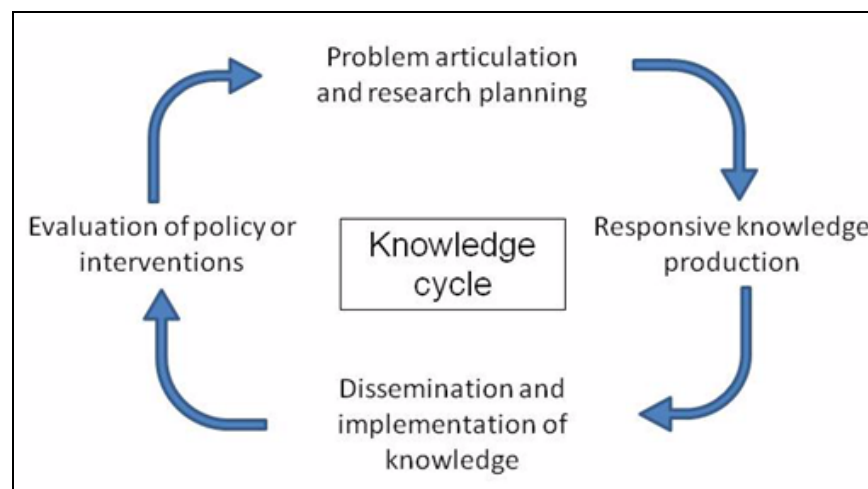

Figure 1 Knowledge cycle.

The knowledge cycle has an open character: new insights and questions can present themselves at any point. An essential condition for the effective functioning of the knowledge cycle is the involvement of *knowledge users* (policy makers, healthcare institutions, professional groups, patient organisations, insurance companies), *knowledge producers* (academic and non-university research institutions, registration institutions) and *intermediary knowledge organisations* (research funders, advisory bodies).

Each of the above-mentioned parties is also involved in other, comparable cyclical processes in the policy, management or research spheres. In these other processes other objectives than those in the knowledge cycle are often dominant, objectives which, moreover, do not always converge among the various parties. Maintaining an effective knowledge cycle therefore requires a concerted effort and organisation by the identified actors.

The *knowledge infrastructure* is the whole of structural conditions to ensure an effective functioning of the knowledge cycle. These conditions include consultations among stakeholders or the facilities required to carry out the research. The *research infrastructure* is a key element in the knowledge infrastructure. Both the knowledge infrastructure and the research infrastructure are discussed in greater detail in chapter 3.

The organisation of the healthcare system is not only based on scientific knowledge. Other factors which also play a major role are customs, standards, values, views, statutory provisions and budgetary constraints. Knowledge (*evidence*) is therefore only one of the components of policy making and political choices. Nevertheless, the role of scientific research in our healthcare system and the scope of access to the necessary scientific knowledge is growing steadily. An effectively functioning knowledge cycle (figure 1) supported by a good knowledge infrastructure is absolutely essential in this context.

1.3   Organisation of the work

In order to answer the minister's questions, the Advisory Council on Health Research (annex A) – part of the Health Council since 1 February 2008 – established a committee with Prof. P.J. van der Maas as chairman, and consisting of various Council members and external experts (annex B). The committee met seven times between April 2007 and September 2008. The committee undertook the following five activities:

1 It analysed the developments in health services research since the Council published its advisory report on this subject in 1994.
2 It prepared an overview of the societal need for health services research. Here the committee took its cue from the 'societal tasks' ('Maatschappelijke Opgaven') formulated by the Ministry of Health, Welfare and Sport. Their significance for the Ministry's knowledge need was discussed with members of its knowledge network.
3 It charted the research infrastructure as part of the knowledge infrastructure. To gain an understanding of the current research infrastructure (research capacity, resources and topics) for health services research, the committee commissioned an exploration of the research conducted in 2005 and 2006.
4 It analysed how the research fits in with the knowledge needs and the processes which play a role in the knowledge cycle (demand, supply and use).
5 It investigated the experiences with health services research in countries outside the Netherlands with a similar level of public health and healthcare as well as a strong tradition in the area of health services research. To this end, the committee organised an international working conference in January 2008, during which leading experts from Canada, the United Kingdom and Germany shared their knowledge and experiences with the committee and other participants regarding research planning, the research infrastructure and the linkage between the research cycle and the policy cycle. This input played a major role in the formulation of the recommendations.

The committee's draft advisory report was submitted for assessment to the Health Council's Standing Committee on Public Health.

1.4   Structure of the report

This report discusses three topics:
1 the nature and content of health services research
2 the current societal tasks for health services research
3 the necessary conditions for an effective and sustainable knowledge infrastructure.

Chapter 2 discusses the first two topics, addressing the domain of health services research and the societal tasks in the public health sphere which the government and the sector are faced with today. In its consideration of these societal tasks the Council followed the arrangement proposed by the Ministry of Health, Welfare and Sport.[3]

In chapter 3 the Council deals in detail with the necessary conditions for an effective and sustainable knowledge infrastructure.

Chapter 4 sets out the Council's conclusions and recommendations.

Following the bibliography, the annexes provide the composition of the Council and the committee, a detailed overview of the historical context of health services research, the detailed exploration of the nature and extent of health services research, and a report of the international working conference organised within the context of this report.

2
Health services research in support of the societal tasks

It goes without saying that society faces a major challenge to ensure that the ever-expanding opportunities for prevention, cure and care remain accessible to all. The previous chapter already included a passing reference to the way in which the Ministry of Health, Welfare and Sport has set out this challenge in the form of 'societal tasks' for public health and healthcare.[3]

In this chapter the Council deals in more detail with the domain of health services research and provides examples of questions for health services research which are raised by the societal tasks.

2.1   The domain of health services research

Health research is usually divided into three major domains: biomedical research, clinical research, and health sciences. The latter includes epidemiology, public health research and health services research. The latter type of research is the subject of this report (figure 2).

The primary process of the healthcare system takes centre stage in health services research. This may entail descriptive research (including staff counting, monitoring of healthcare use and cost), normative research (ethical and legal aspects), explanatory research or intervention research. In the latter two research types the primary process of healthcare is examined as an explanatory or depen-
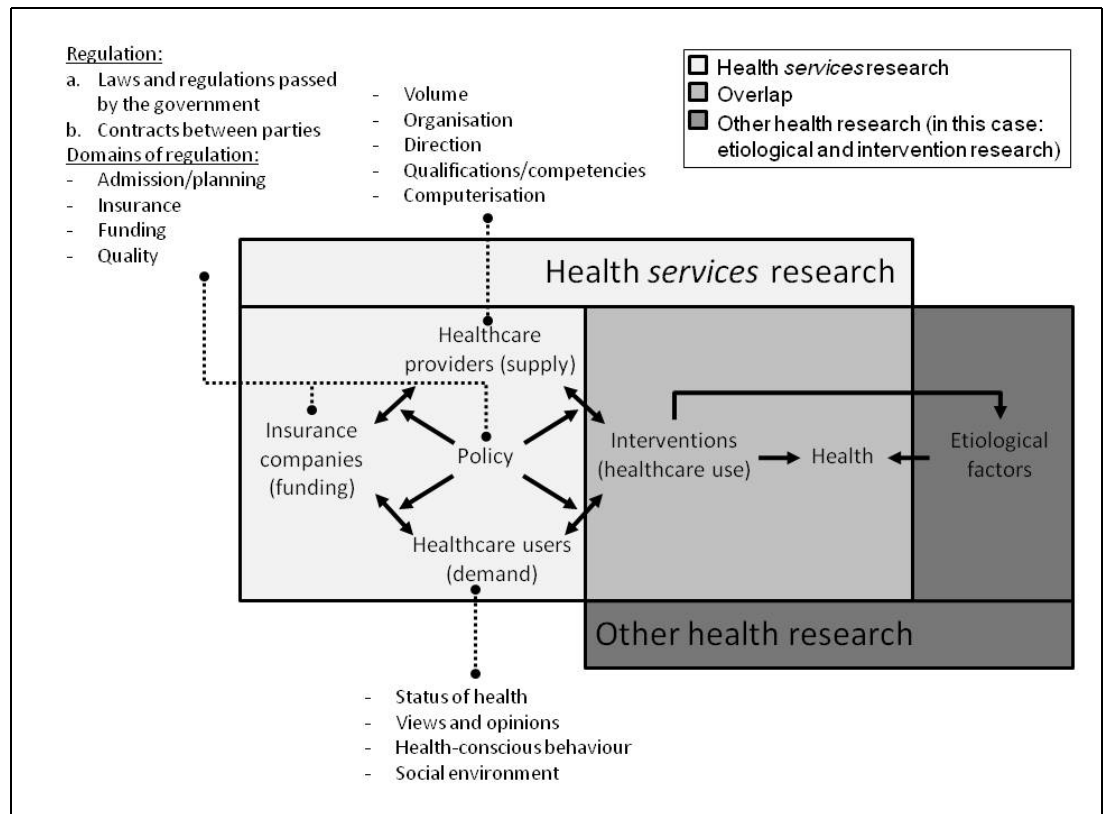
Figure 2 Schematic representation of the demarcation and overlap between health services research and other health research. 'Other health research' mainly relates to etiological and intervention research in this context. Around the boxes a number of factors are mentioned which affect the healthcare system. These factors can also be the subject of health services research.

dent variable. In the first case, researchers investigate whether differences in healthcare structures or processes lead to differences in desired outcomes. In the second case, researchers see whether and if so how healthcare structures or processes are influenced by other determinants.

The example below illustrates the above rather abstract description. Research which compares different methods for the early detection of cancer in terms of their sensitivity and implications for public health is usually not regarded as health services research. But research into the most effective or efficient means of structuring this early detection (i.e. which professionals, organisational form, funding and quality system should be involved) is regarded as health services research.

Figure 2 shows the demarcation and overlap between the various research domains. When the core of the research relates to healthcare users, healthcare providers or policy, it is called health *services* research. This is the light-grey shaded area on the left in the figure. The figure contains a number of research themes for health services research. The other end of the spectrum (i.e. research into the causes of diseases and the associated disease mechanisms) falls wholly outside health services research (dark-grey shaded area). In the central area, which focuses on interventions and health outcomes, there will not always be a consensus as to whether the research is health services research. The more an intervention is determined by whoever executes it and the context in which it takes place, the more the research is likely to be regarded as health *services* research. However, for the purpose of this report the demarcation question within this overlap area is irrelevant. For the major part of the health services research the situation is clear enough.

Classification of health services research

Health services research originated in the 1960s and 70s, when issues surrounding staff planning and cost control became topical in the rich countries. These days the scope of health services research has moved well beyond these relatively limited issues and covers a much wider range. The research methods used have been taken from widely varying disciplines, such as public administration, decision theory, sociology, economics, and psychology, which have often been elaborated in great detail for specific application in the healthcare sector.

Health services research has many subareas and for that reason it can be classified in many different ways. For instance, the questions raised in health services research can be considered at different levels (macro, meso and micro). For other classifications, the Council refers the reader to the *Handboek Gezondheidszorg-onderzoek*, a manual on health services research.[4]

At the macro level, the research deals with questions relating to the healthcare system or its components, such as mental health. These questions may relate to the insurance system or laws and regulations, for instance.

At the meso level, the research deals with the organisational entities which provide the healthcare. This research is different from macro research in that it involves concrete organisations or interventions. Research may be concerned with, for instance, the availability of certain types of healthcare, the coordination of the healthcare provisions of different institutions, the functioning of a department within an institution, or the cost-effectiveness of integrated healthcare systems.

At the micro level, the research deals with questions relating to the healthcare process. Here the actual interactions between healthcare providers, healthcare users and health are the subject of research. Examples include research into the relationship between healthcare demand and healthcare use, differences in healthcare use between socioeconomic classes, the scope for demand management in healthcare, and the cost-effectiveness of specific interventions.

Since much important research actually examines the connections between these three levels, the Council adds a fourth category: 'cross-level'. An example of this is the research into integrated healthcare.

2.2 Societal issues and societal tasks in healthcare

Societal issues are issues which are deemed to be very important in society, which are often highly controversial, and for which it is felt that codes of conduct should be set or specific policies should be developed. An example of a societal issue in healthcare is the solidarity question. In a social healthcare system, the people better-off show solidarity with those who are less well-off, so that people with little money, poor health or no paid job also have access to healthcare. How far this solidarity should be taken and how it should be shaped in policy terms will always be a subject of debate.

Standards, values, interests and political standpoints play a major role in the search for solutions to societal issues. However, an informed opinion formation and decision making presuppose an objective and detailed understanding of the consequences of the various decision alternatives. And health services research is ideally suited to produce the requisite information.

The Ministry of Health, Welfare and Sport has summarised the major societal issues in five societal tasks, which serve as the guiding principle for the healthcare sector's knowledge and innovation agenda.[3] The original formulation of the societal tasks is currently being updated and refined. The five tasks as outlined here reflect the state of opinion in November 2008. The five revised societal tasks are as follows:

1 Anticipate a growing and changing demand for healthcare.
2 Live longer in good health and participate longer in society.
3 Quality of care and patient safety.
4 Good management and governance in the healthcare sector.
5 Manage limiting healthcare resources (shortages and risks).

The five societal tasks represent the common interests of public health and healthcare. Realising these common interests requires a concerted effort by all stakeholders. At the same time, these stakeholders must also realise their own responsibilities and interests as best they can. These interests will not always coincide and may sometimes conflict between parties. In this area of tension the role of health services research is to present facts and verifiable explanations, conduct normative analyses, and establish the effects of proposed interventions. In other words, the societal tasks for public health and healthcare cannot be addressed effectively without the broad use of high-quality health services research.

Boxes 2.1 to 2.5 set out some illustrative questions for health services research for each of the five identified societal tasks.

Box 2.1 Anticipate a growing and changing demand for healthcare

In order to anticipate this growing and changing demand for healthcare effectively, many questions will still have to be answered. Many of these lie in the area of health services research, such as:
- What effects will the rapidly growing scope for predictive medicine have on the volume and nature of demand for healthcare?
- How and to what extent do the growing knowledge among the public and the growing number of vulnerable older people influence the demand for healthcare and hence its costs?
- How can the growing demand for healthcare staff be met while preserving the quality of healthcare? For instance, how can the nursing and caring professions be strengthened in terms of content and image, and what other measures are necessary to achieve the required recruitment of staff and prevent premature departures?
- How can the still inadequate healthcare services for immigrants in the Netherlands be improved?
- How can the various target groups be offered coherent healthcare, so that more health gains are achieved, fewer mistakes are made and stifling administrative burdens are avoided? New and properly tested healthcare models are urgently needed.

Box 2.2 Live longer in good health and participate longer in society

Pressing questions in this area include:
- Why does the increase in life expectancy in the Netherlands lag behind those in many West European countries? Part of the answer almost certainly lies in healthcare factors, such as the quality and continuity of care for women during pregnancy and labour and for vulnerable older people.
- Why are many in principle effective preventive interventions not put into practice, or not sufficiently so, and how can the use of these interventions be increased?
- How can cooperation between public and primary healthcare and local policy contribute to an improvement in public health?
- How can chronically ill patients and people with disabilities be encouraged to participate in social life and the labour market for as long as possible? For an effective implementation of the Social Support Act (WMO), more research is required into the effective and necessary conditions and facilities for such participation.

Box 2.3 Provide quality of care and patient safety

Quality and safety of healthcare is the typical domain for health services research. The efforts to guarantee quality and safety in technologically and organisationally complex processes in the health service gives rise to several questions:

- How can the primary healthcare process be organised as effectively and safely as possible? This requires above all a thorough analysis of processes surrounding interventions across the health service, both in institutions and beyond, with special attention for the continuity of information and responsibilities.
- How can the use of research results be stimulated as efficiently as possible?
- How can procedures and information systems make a contribution to the improvement and the monitoring of the quality and safety of (the continuum of) healthcare, and how can individual healthcare providers be involved in this?
- Where and why do measures to make healthcare better and safer give rise to unintended consequences, as in the application of healthcare technology, for instance?
- How can performance indicators make a contribution to safer and better healthcare? The development and validation of performance indicators for all health service sectors which are informative and reliable for all stakeholders (professionals, patients, managers, insurers, supervisors) poses a major challenge for health services research. Research would also have to be conducted into the possible unintended consequences of some performance indicators.

Box 2.4 Ensure good management and governance in the healthcare sector

Major shifts in the distribution of responsibilities in the healthcare sector, the tensions between the introduction of market forces and the need for continuity, coherence and equitable access within the context of a growing and changing demand for healthcare, place high demands on governance in the sector. This gives rise to a number of questions in the public administration sphere, including the following:

- What are the success and failure factors for policy and management in this complex and dynamic situation?
- What role does the government have in stimulating sustainable enterprise in the healthcare sector?
- How does demand-oriented healthcare relate to sustainable healthcare?
- How can social values in the health service be protected while the role of market forces is being extended?

Box 2.5 Manage limiting healthcare resources (shortages and risks)

One of the key issues for the coming years is how – against the background of scarcity and market forces – healthcare can remain accessible to all. Questions which require further research in this context include:

- What is a fair allocation of resources against the background of growing demand for healthcare and widening social inequality?
- How can access to healthcare be guaranteed in a health service which is expected to operate as a 'market'?
- What are the consequences of the introduction of market forces in specific sectors of the health service?
- What incentives will ensure that parties deliver effective interventions as effectively as possible?
- How can risk selection be avoided as the role of market forces is being extended? Should the system of risk adjustment be improved in this context, for instance?

2.3   The role of health services research

In chapter 1 it was already argued that policy decisions are invariably the outcome of an interplay between views, interests, feasibility assessments and available information, and that the timely availability of relevant information from scientific research is becoming increasingly important. Although policy is never exclusively evidence-based, it must at least be as evidence-*informed* as possible. Health services research plays a major role in presenting the requisite knowledge for policy and practice. It is important in this context to strike a good balance between the level of detail which is scientifically interesting and the elaboration and classification of results which are sufficient for decision making.

Health services research is research into the organisation, the funding and the functioning of the healthcare sector, and as such it always has a local or national focus. Even so, health services research in other countries offers significant lessons for the Dutch healthcare sector (annex E). International comparative research and cooperation with foreign research groups are therefore invaluable in advancing the Dutch societal tasks.

Although health services research focuses specifically on supporting policy and practice, it must also have sufficient opportunity to investigate its 'own' research questions, even if these do not (or do not yet) follow on directly from policy issues. Such anticyclical research is essential in developing knowledge within the discipline and in providing timely responses to future questions arising from policy and practice. Ultimately, the legitimacy of health services research always lies in its ability to make a direct or an indirect contribution to public health.

3

The knowledge infrastructure for knowledge production and knowledge use

3.1 Introduction

The Council argued in the previous chapter that the major societal tasks for public health and healthcare cannot be addressed effectively without the broad use of high-quality health services research. In this chapter the Council argues that the realisation of this research requires not only a sound research infrastructure but also a knowledge infrastructure which facilitates the whole process from problem articulation up to and including the evaluation of policy (knowledge cycle). After a brief, more theoretical excursion on the knowledge cycle and the knowledge infrastructure, this chapter recounts the developments in research and the research infrastructure since the publication of the Council's previous report on health services research. This is followed by a description of the current nature, volume, organisation and funding of research. In conclusion the Council describes the current design of the knowledge cycle and knowledge infrastructure, and summarises the shortcomings identified in this chapter.

3.2 From knowledge production to knowledge use

Our understanding of the conditions for actually applying the findings of scientific research to policy is only very partially empirically based. In so far as these conditions are known, there are indications that scientific findings are more likely to be used in policy-making if the following applies:

a   the knowledge flowing from research is easily accessible and clearly presented to knowledge users;

b   there is interaction between researchers and knowledge users at all stages of the knowledge cycle;

c   there is a knowledge infrastructure which facilitates systematic and committed interaction.[5-13]

Re a: Demands on knowledge

Scientific information is usually more readily accessible to non-researchers when it is presented in summary form, such as in a synopsis, a systematic review or a medical guideline. The creation of such summary presentations is called 'knowledge synthesis'. To promote the use of knowledge, it is also advisable to present the findings in such a way that they can be acted upon immediately (as is the case in most guidelines). Furthermore, knowledge tends to be more easily accepted when the findings are more evidence-based. Generally speaking, aggregate knowledge (based on several studies) leads to greater certainty than a single study. Expert opinions, no matter how impressive the expertise of the advisers, for that reason are often deemed less reliable (see figure 3).
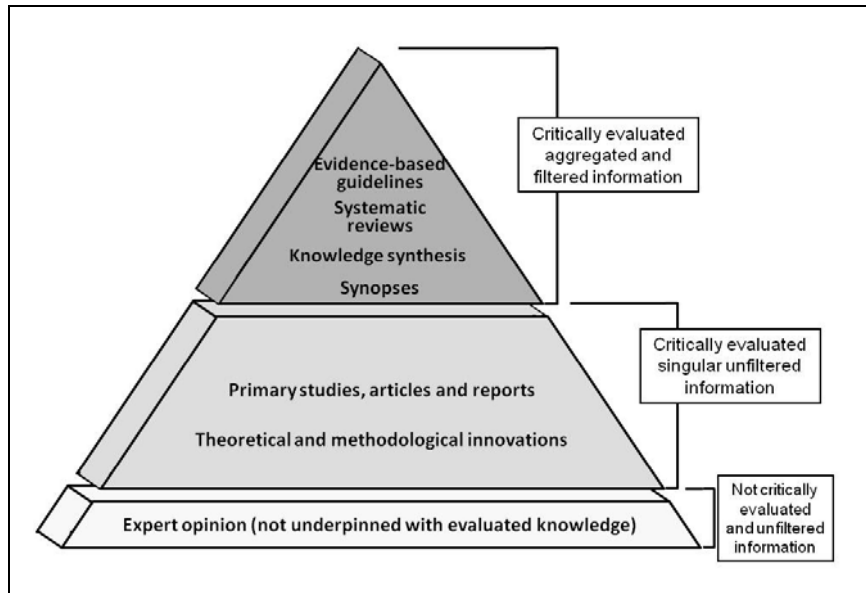

Figure 3 A classification of knowledge levels.

Re b: Interaction at all stages of the knowledge cycle

Interaction between researchers and knowledge users at all stages of the knowledge cycle is crucial for an efficient use of knowledge in policy and practice.[5,9,10,14] Interaction at all stages of the knowledge cycle promotes trust between researchers and policy makers and ensures that both sides are better informed of the other's importance for their work.[7,14] To give some examples of such interaction:

- At the stage of problem articulation and research planning, this means that researchers and knowledge users are involved in mutual interaction in the identification and prioritisation of knowledge needs. Furthermore, parties can be involved in the peer review process of appraising project proposals.
- At the research stage, traditionally the preserve of researchers, knowledge users are asked to show commitment by means of active participation as advisers or co-researchers, coupled with an obligation to provide some or all of the funding for the research project.
- At the stage of dissemination and implementation, the joint efforts of researchers and knowledge users ensure a translation of the research results into a usable message for the knowledge users. Furthermore, on the basis of their own roles both parties are involved in the implementation, preferably according to a previously drafted implementation plan.
- At the stage of evaluation of policy, the knowledge users formulate the objectives, and both parties contribute to the evaluation. This joint effort enhances the likelihood that the evaluation will benefit policy and practice.

Incidentally, intensive interaction between researchers and knowledge users does not mean that researchers should only be involved in research requested and funded from the policy and practice side. On the contrary. It is imperative for the development of knowledge in the area of health services research that researchers also conduct research beyond the immediate policy and practice issues. This may include research to resolve methodological problems or to accumulate knowledge on topics which are not yet on the policy makers' agendas. The societal tasks presented in chapter 2, although formulated by the Ministry of Health, Welfare and Sport, can lead to research which does not directly fit into, or may even be at odds with, the existing policy approach.

Re c: The knowledge infrastructure

To achieve the desired results, the interaction must be systematic (at all stages of the knowledge cycle) and certainly not free of engagement.[6,13,15,16] The focused

effort of researchers and knowledge users to achieve systematic and committed interaction should be supported by a sound knowledge infrastructure. Laws, contracts or subsidies can support the systematic and obligatory nature of the interaction.

Incidentally, the knowledge infrastructure can be designed in several ways, for instance by means of a separate research programme in which policy makers and researchers are responsible for the programme (as in the United Kingdom, see annex E), or by means of 'linkage and exchange' with the involvement of a knowledge broker (as in Canada, see annex E).

3.3 Developments since 1994

Before discussing the existing and the desirable situation, the Council will first outline the developments since the publication of its previous report on health services research in 1994 (see box 3). A more detailed description is provided in annex C.

The research infrastructure has been strengthened in several ways since 1994, so that the potential for a responsive knowledge production (see figure 1) has improved.

Firstly, the establishment of the Netherlands Organisation for Health Research and Development (ZonMw) has made a significant contribution to a more programmatic approach to research, and the research is increasingly managed in consultation with policy makers and end users.

In addition, health services research has been able to concentrate in a number of larger research institutions. Also, three excellent graduate schools have been established for the training of health services and other researchers.[17,18]

Furthermore, over the years much attention has been paid to targeted knowledge transfer. This has led to more publications in national and international scientific literature, as well as to more user-oriented publications in the national professional literature. Parallel to this, health services research is also increasingly evaluated in terms of social relevance, in addition to the usual evaluation of scientific quality; in this way it is possible to give a better estimation of the value of health services research.[19]

Knowledge users from the healthcare field have also become much more directly involved in research at the academic institutions and (although as yet on a limited scale) through applied research at schools for higher professional education (HBO).

Against this, however, there have been virtually no new developments in the area of evaluation of new policy and interventions. One of the few developments

to report in this context is the Evaluation of Legislation programme launched by ZonMw in 1997. This provides funds for the evaluation of new laws. But it must be said that even within this programme, future evaluation is rarely if ever taken into account at the time of the introduction of new legislation. Moreover, the available budget is very limited.

Box 3 Developments in health services research in the 15 year since the publication of the Council's advisory report on health services research in 1994[2]

More systematic support and management of research by a new programming and coordinating organisation
The establishment of the Netherlands Organisation for Health Research and Development (ZonMw) has provided for this. With the exception of the Open Programme, programming is thematic.

Concentration of research, with the necessary basic support
A number of large research institutions have been established, and three graduate schools have been founded. But there is no structural support for this infrastructure in the form of basic subsidies.

Scope for theory formation and methodology development
To date the proposed basic subsidy or surcharge on contract research has not been awarded.

Standardisation of databases and making them accessible to researchers
Improvements in this sphere have been insufficient. On 29 October 2008 the Council published a report on how this problem could be addressed.[20]

Specific expertise and intensive consultation to ease the tension between scientific quality and social relevance as well as between financial dependence and substantive objectivity
Scientific quality has improved through activities within the ZonMw programme Scientific Quality of Health Services Research (WK-GZO). And more attention is being paid to social relevance with the launch of social impact measurements. An attempt to promote intensive consultations between parties with the help of knowledge brokers did not succeed. But the creation of academic workplaces and HBO lectureships did significantly promote interaction between different parties.

More targeted knowledge transfer
More publication of results in national and international scientific journals and national professional journals has significantly improved knowledge transfer. Other initiatives aimed at achieving a targeted knowledge transfer (academic workplaces and HBO lectureships) have also been unfolded.

Development of a quality assessment system supported by the field
Criteria supported by the field to ensure the social quality of research have been developed, and need to be implemented in a quality assessment system.[19]

The knowledge infrastructure for knowledge production and knowledge use

3.4   Research and research infrastructure

Conducting the research necessary for policy formulation properly requires an adequate research infrastructure. This section discusses the research infrastructure (size, organisation, funding, and innovative capacity) and the research product (quality, responsiveness and accessibility of knowledge and knowledge production). For each of these the Council outlines the current situation, and then examines the room for improvement.

3.4.1   Size, organisation, funding and innovative capacity

The exploration carried out by the Council shows that health services research has developed into a discipline of considerable size. In 2006 nearly EUR 60 million was spent on this type of research (annex D), which is estimated to be just over seven percent of the total budget for health research. This budget is comparable with the resources allocated in the United States*, Canada and the United Kingdom (annex E). Total public expenditure on healthcare came to nearly EUR 43.8 billion in 2006.[21]

On the basis of the exploration the Council estimates that around seven percent of all health researchers are involved in health services research. This is comparable with the share of the health research budget allocated to health services research.

The exploration also gives an indication of the degree of concentration of health services research in the Netherlands (annex D). In total 27 research institutions or departments were examined. Eight research centres each have a research budget of more than EUR 3 million per year, and together they account for more than 75 percent (more than EUR 45 million) of all health services research. The eight medium-sized institutions, centres and departments (with budgets between EUR 0.5-3.0 million per year) account for 21 percent (or EUR 12.5 million) of this research budget per year. The nine small research departments (with budgets of less than EUR 0.5 million per year) spend just over three percent (or EUR 2 million) of the resources for health services research. The eight large centres are the Netherlands Institute for Health Services Research (NIVEL), the Institute of Healthcare Policy and Management (iBMG), the Netherlands Organisation for

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*   A personal communication with David Helms of AcademyHealth in the United States showed that five percent of the health research budget in that country is spent on health services research.

Applied Scientific Research (TNO), the Trimbos Institute, Institute for Research in Extramural Medicine (EMGO), the Nijmegen Centre for Evidence Based Practice (NCEBP, with the IQ Healthcare department accounting for the largest share), the Social Healthcare Department of the Erasmus Medical Centre, and the Care and Public Health Research Institute (CAPHRI) of Maastricht University.

So even though there are quite a few research institutions, centres and departments active in health services research in the Netherlands, most of the available resources are expended in the relatively large research centres. In five of the large and medium-sized centres, health services research accounts for only a quarter of all activities. These centres not only offer the advantage of concentration and critical mass, they also provide scope for cooperation among different disciplines in the health sciences. The Council welcomes this interdisciplinary cooperation.

Although the Council observes that the extent of health services research is reasonable in terms of both financial and human resources, the exploration also shows that the structure of the funding may pose a threat to the field's innovative capacity.

At present, the funding for health services research can be broken down as follows (annex D):
direct funding: 26%
indirect funding: 28%
contract funding: 46%.

On the basis of data from the Association of Universities (VSNU) from 2003, the Ministry of Education, Culture and Science has calculated that university research capacity is funded as follows[22]:
direct funding: 49%
indirect funding: 24%
contract funding: 27%.

In the case of health services research, the average contribution of direct funding to the total budget is appreciably below the national average, while the reverse is true for contract funding. This is not surprising, because much health services research is application-oriented and hence attracts more contract funding than some fundamental research. It is difficult to say what might be a "healthy" balance between the funding types. The Advisory Council for Science and Technology Policy (AWT) argues that there must be a proper balance between "knowledge as capacity" and "knowledge as product", with the former being in

fact a major task for universities and research institutions.[23] Hence the AWT calls for a substantial share of direct funding. In 2005 it observed that while the share of direct funding was sufficient at the time, it should be not eroded further. The AWT did express its concern over the large role of fund matching in direct funding and the erosion of the university infrastructure which that may entail.[23] Given the strong appeal of health services research, matching accounts for a disproportionate share of resources which are intended and necessary for free innovative research.

The average contribution of indirect funding to the total budget for health services research is broadly in line with the average in the Netherlands. Yet there is one major difference. In the case of health services research, the indirect funding stream consists largely of resources from the Netherlands Organisation for Health Research and Development (ZonMw). Most of the ZonMw funding for health research in general is distributed through thematic programmes, and a small proportion through the Open Programme (annex D). However, many of the questions raised in health services research, especially at meso and macro level and to a lesser extent at micro level, are not confined within a theme or cannot be fitted into one of the existing programmes in terms of content, making it difficult to fund this particular research within these programmes.

The Council also observes that the health sciences, including health services research, are lagging behind in securing resources in the Open Programme. It has been established that this is not due to a lower quality of proposals compared to other medical sciences. In 2005 and 2006 the applications for grants under the TOP scheme and the Innovational Research Incentives Scheme (Vernieuwingsimpuls) (Veni, Vidi, Vici), the percentages of eligible proposals for the health sciences (31 percent) was virtually the same as for the other medical sciences (26 percent). But in the health sciences only 47 percent of the eligible applications were approved, compared with 78 percent in the other medical sciences.[*] The reason for this discrepancy is unclear. A probable explanation may be the methodological complexity of health science research, which often involves practical situations where methodological concessions have to be made. This means that the selected approach is invariably a point of discussion, even if the proposal is of high quality.

So while indirect funding is ideally suited for free innovative research in other disciplines, this is hardly the case for the health sciences. Most of this research is theme- or application-related, and the chances of success in the Open Programme are small.

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[*]   Figures supplied by ZonMw.

Contract funding accounts for a relatively large share of funding in health services research. This appeal is to be welcomed, but it also has a downside. Commissioned health services research often takes place in short-term projects (between six months to a year), which means that acquisition requires lot of time from permanent staff.

What are the implications of this funding structure for health services research? And is there, as the minister wondered, a good balance between free risky innovative research and demand-guided research?

For each scientific discipline there must be sufficient scope to define and tackle topical and innovative research questions and methods. This is the only way to ensure that the discipline remains innovative and dynamic and is able to recruit and retain talented researchers. The lack of opportunities for in-depth study, training and career development (obtaining a doctoral degree, for instance) for young researchers may lead to an impoverished research capacity and may threaten the production of truly innovative knowledge that also offers completely new perspectives on the societal tasks.

3.4.2   *Volume, quality, responsiveness and accessibility*

Although no systematic bibliometric analysis was conducted for this report, the Council observes that the output of health services research articles in international scientific journals has increased considerably. Foreign speakers at the international working conference (see annex E) also confirmed that Dutch research in this sphere is highly regarded internationally. What is more, those research institutions which are active in health services research have increasingly recorded and published the social relevance of their research results. And finally, the recently published *Handboek Gezondheidszorgonderzoek*, a manual on health services research, also boosts the quality and authority of the discipline.[4]

Does the research also meet the knowledge needs of the users, or to put it another way, is the knowledge production responsive? The exploration shows that the researchers usually succeed in gearing their research agendas to the knowledge needs in the healthcare field (annex D). This is also due to the largely thematic programming of the indirect funding provided by ZonMw and the large volume of commissioned research (contract funding and commercial funding), which together account for 73% of the research funding. The programmatic approach by ZonMw leads to coherence in research and a match with themes deemed rele-

vant. A downside of ZonMw's thematic approach is that social knowledge needs that do not fit in the existing programme frameworks hardly figure on the public research agenda. The Council therefore believes that more flexibility in public research programming is desirable.

The current practice of publication in national scientific journals and professional journals contributes to the accessibility of the knowledge. With the current information technology standards, research published here can be retrieved worldwide quickly and effectively. But this does not mean that the findings are always easy to evaluate and interpret by those who could use them. It is true that excellent programmes for meta-analysis are available these days, but their application does require research expertise. Moreover, an effective knowledge synthesis which contributes to decision-making and application in practice requires not only formal methods but invariably also expertise on the substance and exchanges of views between researchers and users.

3.4.3   *Summary*

The Council concludes that the volume of health services research in the Netherlands is reasonable, comparable with the relative volumes in other countries, and that the organisation of health services research is good.

The main problem lies not so much in the total volume of the research but in the nature of the funding. Compared with other research domains, the contribution of direct funding to health services research is relatively modest, the contribution of indirect funding is the same but strictly circumscribed, and much of the research is funded by contract funding. A consequence is that the continuity of research and the scope for accumulating knowledge as capital are coming under pressure. Moreover, the funding structure has adverse effects for the training and retention of young researchers. This poses a threat to the capacity – which has been adequate to date – in the future.

The knowledge products are of good quality and meet the social knowledge needs. But it is not just the innovative capacity, but also the responsiveness which is constrained by the limited flexibility in the thematically confined public research programming. The accessibility of the research results has improved significantly over the past decades, both in terms of publication in national and international scientific journals and in terms of the researchers' efforts to draw society's attention to the results in other ways. However, the final stage of knowledge transfer, i.e. knowledge synthesis and preparation for implementation, where effective interaction between researchers and (intended) users is crucial, requires further strengthening.

3.5   The knowledge cycle and knowledge infrastructure

The Council observes that the Dutch healthcare sector and the healthcare policy sphere generally recognise the need to incorporate knowledge into policy formation and decision-making. Some good examples can be taken from practice.[16,24] However, the Council also observes that there is still considerable room for improvement in this area.

In the course of the Council's research into the nature and volume of health services research, questions were also raised about the contacts between researchers and clients. The responses show that researchers and those who use or will use their research results often have repeated contact with each other about the research (annex D). Sometimes the contact is even intensive and occurs with a certain regularity.

Nevertheless, the Council has also identified shortcomings in the joint problem articulation between researchers and knowledge users. Some knowledge users have trouble finding the right research programme for a socially relevant question. This is because the research questions sometimes do not fit easily into the existing research programming. Research programmes are often narrow, specific and short-term. For instance, the research questions raised by the Healthcare Insurance Board (CVZ) by no means always match the programmes of ZonMw in terms of content and duration. Moreover, European tendering rules may also hinder interaction between researchers and knowledge requesters at the extremely significant stage of joint problem articulation.

Secondly, research and practice are by no means always in step with each other. The problems with the poor usage of research into quality and safety in the health service provide an illustration of this.[25] Several reasons for this poor usage can be adduced, including the fact that healthcare institutions tend to concentrate on the efficient provision of healthcare, and the commissioning of or participation in scientific research is often an (overly) expensive and time-consuming adjunct for these institutions. Moreover, health institutions and policy makers are often insufficiently equipped to act as partners of researchers. Conversely, the usual mechanisms for disseminating scientific insights (such as publication in professional journals and notification of professional associations) are not as effective in the healthcare field as they should be.

Thirdly, the Council observes that, with some exceptions, the systematic evaluation of research activities and their contribution to policies is still quite

rare. One of the few activities in this area is the continuous Evaluation of Legislation programme operated by ZonMw. Although most of the stakeholders endorse the importance of evaluation as a keystone of the knowledge cycle, evaluations are often not undertaken in practice, or if they are, at a late stage and with limited resources (as in the case of the Social Support Act). This applies not only to government policy, but also to the policies of institutions, professional groups and other parties. The upshot is that a social experiment is being conducted without sufficient lessons being drawn from it.

In order to match research better with practice and policy problems, the Council believes that future users should be involved systematically in identifying and planning research projects. Activities to promote dissemination and implementation of research findings – findings which, by the way, could also mean that new policy or interventions should not be implemented – should preferably start before the actual research starts. Experiments with this approach are currently being conducted in the regional policy, practice and research networks being established within the framework of the National Care for the Elderly Programme (NPO).

To ensure that evaluation makes an effective contribution to quality control and quality improvement, evaluation of new policy or practical experiments, for example, must be embedded from the outset, so that the starting situation can be documented in time and the data required for the evaluation can then be gathered. It would therefore be much better to give some thought from the outset as to which data are required for a meaningful evaluation and to gather the necessary data in time (both before the policy intervention, i.e. the starting situation, and thereafter).

And finally, the Council observes that the intended intensive interaction between researchers and policy makers also carries a potential danger. Researchers and policy makers can become so closely involved with each other and so dependent on each other that a conflict of interest may arise, whether intended or not. Of course it is possible to devise procedures to deal with this, but the Council would like to emphasise that these very important societal issues require an independent and critical scientific approach precisely for this reason.

3.6 Conclusion

Two essential ingredients for a successful interpretation of evidence-informed policy and practice are a healthy research infrastructure which delivers relevant

and reliable scientific data on the one hand and a knowledge infrastructure which facilitates a targeted deployment of researchers and knowledge users on the other hand. Health services research and the surrounding infrastructure have undergone a positive development in the past years. The quality is high, and the responsiveness and accessibility are good. But there is still room for improvement. At this point the Council would like to highlight several shortcomings which pose obstacles to further positive developments.

The first shortcoming is the strongly thematically confined research programming at ZonMw, which does not fit in with the nature of health services research. This lack of connection impedes the rapid addressing of new policy and practice questions and offers little scope for new cross-programme research questions, even when these questions fit in well with the five societal tasks set out in the previous chapter.

The second shortcoming is that the relative dearth of direct funding and the open competition for indirect funding hamper the development of a socially relevant research field. This also threatens to diminish the capacity to formulate new answers to policy questions. Unless remedial measures are taken, it will not be possible to guarantee a stable and high-quality research infrastructure in the future.

In addition to the further development of the research infrastructure, it is now high time to intensify the joint efforts by researchers and knowledge users to bring about effective knowledge usage in policy and practice. Without this systematic and committed interaction between parties, policy and practice questions will not appear high enough on the research agenda. The research results will then play a smaller role in policy formation and decision-making than is warranted by their intrinsic value. Only with this additional effort (i.e. interaction between parties) will society be able to make optimum use of the investments in knowledge production.

4
Conclusions and recommendations

The starting point for this report were two questions posed by the Minister of Health, Welfare and Sport: "Is the existing knowledge infrastructure of sufficient size and stability to properly address the questions regarding developments in the healthcare system now and in the future?" and "Is there a good balance between free risky innovative research and demand-led research?". In chapter 3 the Council concluded that the effective functioning the knowledge cycle is hampered by shortcomings in the research infrastructure and by as yet insufficient and non-committal interaction between researchers and knowledge users. The Council also concluded that the balance between free innovative research and demand-led research is skewed.

In this final chapter the Council makes a series of recommendations for each of its conclusions, which are intended to overcome the identified shortcomings and to reinforce the knowledge infrastructure.

4.1 The research infrastructure

Conclusions

At the moment there are two major shortcomings in the research infrastructure for health services research which pose an obstacle to an optimum contribution to public health and healthcare in the Netherlands:

1   The strongly thematically framed programming at the largest public research funding body, ZonMw.
    This thematic programming provides such a strict demarcation that it impedes the flexible inclusion of new questions from the policy and practice spheres. Knowledge users who depend on public research funding consequently are left with their questions either unanswered or answered late or too late. Moreover, the thematic delineation is not always suitable for health services research, since this increasingly revolves around cross-theme research questions.
2   The funding structure
    The funding structure offers insufficient scope for free risky innovative research, with the result that both the sector's innovative capacity and capacity building are coming under pressure. This threatens (fundamental) knowledge growth which is necessary for generating knowledge products (see figure 3). Over time this also puts the responsiveness at risk.

Recommendations

1   Reinforce the research infrastructure in such a way that practical and policy issues can be rapidly addressed, while allowing sufficient scope for innovation on the part of the research community.

a   *Put in place a broad and flexible programme of health services research*
    The social knowledge agenda for health services research (see also recommendation 2a) at the public research funding body (ZonMw) should lead to broad and flexible research programming, so that unforeseen questions of major social significance can also be rapidly addressed. A separate programme on the theme of health services research offers the possibility of addressing relevant questions across the broad healthcare field. What is more, 'open space' within such a programme can generate additional flexibility and innovation, in the area of methodology development, for instance. Such a broad programme will allow the definition of a number of major themes (related to the societal tasks, for instance) which should definitely be addressed, without having to programme them in detail. In this way the benefits of programmatic research funding can be coupled with the intended greater dynamics and flexibility in problem articulation and research planning on the one hand, and with a greater continuity guarantee for the research community on the other hand. Such a broad programme can partly replace new, narrowly defined and short-term programmes.

b *Promote balanced health services research funding*
A better balance between direct, indirect and contract funding and between short-term and long-term projects should be created. University medical centres and universities can contribute to this by linking direct funding to the ability of the research department in question to attract indirect and contract funding (internal performance funding). This will enable successful research groups to achieve a better balance between the funding streams.

c *Promote equitable funding allocation within the ZonMw Open Programme*
The allocation in the open competition for medical sciences should do justice to the quality of the research proposals by focusing on strengths rather than weaknesses. The inherent methodological complexity of health services research and other health sciences must not be punished. On the contrary. Excellent researchers who recognise the complexity and know how to deal with it should be rewarded. The aim should therefore be to achieve an equitable allocation of budgets to eligible (and hence high-quality) proposals between the health sciences and other medical sciences. Monitoring should show whether this modification in the prioritisation procedure has any impact.

d *Create PhD fellowships*
A PhD fellowship programme should be established, aimed at guaranteeing high-quality capacity building. The programme should provide for supplementary subsidies which enable junior researchers to further elaborate methodological problems in their research projects. To that end they should submit concrete and feasible plans which can reasonably be expected to lead to a doctorate within a set time frame (around 18 months).

e *Stimulate international comparative research*
Even though health services research often deals with regional and national issues, the results of health services research in other countries are sometimes very valuable for the Dutch situation. Maximum use should therefore be made of experiences in other countries by stimulating international comparative research, both under the programme mentioned in recommendation 1a and in other existing and new programmes.

4.2   Knowledge exploitation

Conclusions

The application of knowledge in policy and practice does not happen automatically and leaves room for improvement. It turns out that by far the most important condition for effective knowledge exploitation is personal contact between researchers and the intended or actual knowledge users. Although there are sufficient examples which show that existing knowledge is incorporated into policy and practice, too much relevant knowledge remains unexploited. The Council believes that the main reason for this is the limited contact between researchers and knowledge users.

Recommendations

2   Ensure systematic and mandatory interaction between researchers and
      knowledge users in order to improve the exploitation of knowledge.

a   *Formulate the knowledge agenda for health services research interactively*
      The knowledge agenda for the healthcare field and the associated health services research should be developed through a systematic interaction between researchers and the different groups of knowledge users.
      Ideally, interaction should take place at each stage of the knowledge cycle. Examples of such interaction at the research planning and prioritisation stages can be found in the Netherlands (e.g. the field consultation in ZonMw's Efficiency Research Programme) and in other countries (e.g. Listening for Direction in Canada and the Listening Exercise in the United Kingdom, see annex E). With the help of these experiences the practical details of drafting the knowledge agenda can be elaborated interactively. A knowledge agenda drafted in this way can serve as the basis for a broad and flexible public research programme for health services research (recommendation 1a). The drafting of the public knowledge agenda in the healthcare sector should be facilitated by a public intermediary such as ZonMw or the Health Council/ Advisory Council on Health Research.

b   *Encourage cooperation between centres of expertise and knowledge users*
      Institutions in the healthcare field (such as healthcare providers, insurance companies and local authorities) should be workplaces for researchers, even

more than they are now. Effective problem articulation, the conduct of research, successful implementation, and evaluation of the effect of the intervention all assume active involvement of these parties. It is desirable to give them a place in the knowledge infrastructure in a way that facilitates productive cooperation between centres of expertise and knowledge users. The creation and expansion of academic workplaces is a suitable model for this.

In addition to clear substantive and administrative agreements, the formation of such networks of academic workplaces requires suitable research funding. In this regard, the Council would suggest, among other things, a structure which links the institutions in a particular region with relevant research groups. The institutions serve as workplaces and the research groups contribute the necessary scientific expertise. In the ideal scenario the established infrastructure will be able to maintain itself in due course on the basis of a combination of a power to attract funding and contributions from the academic and non-academic participants themselves.

c *Promote implementation and an understanding of success and failure factors*
When seeking subsidies or commissions, proposals for health services research should provide clear descriptions of both the scientific approach and the linkage with policy or healthcare practice. An active commitment by the knowledge users in the drafting of the research proposal is highly desirable. Because innovations in the healthcare sector sometimes also require infrastructural measures (for instance, new laws and regulations, revision of the funding requirements), the involvement of the relevant policy makers is also recommended. The actual implementation remains the responsibility of the knowledge users. Research projects and programmes should be evaluated afterwards in terms of the extent to which the proposed scientific and practical ambitions were achieved. The results of such evaluations must be laid down in such a way that lessons can be drawn with regard to success and failure factors, which can then be taken into account in the design of new programmes.

d *Make evaluation a formal component of every transition in policy and healthcare practice*
Provision should be made from the outset for making evaluation a formal component of the implementation of new policy or new interventions. If possible, ex ante evaluation in the process of developing new policy or new interventions is recommended. This means predicting the effects of the intended policy or interventions on the basis of the available knowledge.

Evaluation requires clear descriptions of goals, potential risks and methods to determine to what extent the expected effects will occur after introduction. Such a continuous evaluation is an essential element not only of the knowledge cycle (i.e. accumulation of knowledge and the ensuing new questions), but also of the quality cycle (i.e. monitoring and improvement of quality and safety). The necessary recording of data should not be regarded as a separate research activity, but as part of healthcare. These data can also serve as the basis for independent research. The costs of such a systematic evaluation should be part of the total costs of the policy or intervention in question. The outcomes of such evaluations should in principle be publicly available.

e   *Instruct researchers and knowledge users about each other's working practices*
Effective synergy between research, policy and practice during the knowledge cycle relies heavily on respect and understanding for the diverging goals and considerations in each of the fields in question. To promote open communication and respect for each other's positions during completion of the knowledge cycle, the stakeholders should be informed of each other's working practices. Researchers should be instructed about how policy-forming and decision-making processes operate, and policy makers, administrators and other field parties should be instructed about how the research process operates. Training of junior researchers can take place effectively at the three graduate schools Nihes, Care and Share in the form of lectures, courses and work placements. Knowledge users should also be informed during their training of the importance of knowledge in their later work. Both researchers and knowledge users should be reached later in their careers through training on evidence-informed policy and practice.

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50   Healthy services research

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Annexes

54   Healthy services research

A
Advisory Council on Health Research

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  Professor of Social Healthcare, Erasmus Medical Centre, Rotterdam
- Prof. J.M. Bensing, *vice chairman*
  Professor of Health Psychology, University Medical Centre Utrecht
  Director of the Netherlands Institute for Health Services Research (NIVEL), Utrecht
- Prof. W.J.J. Assendelft
  Professor of Family Medicine, Leiden University Medical Centre
- Dr. A. Boer
  Executive Board Member, Healthcare Insurance Board (CVZ)
- Prof. J.M.W. Hazes
  Professor of Rheumatology, Erasmus Medical Centre, Rotterdam
- Prof. J.W. Hofstraat
  Vice-President, Philips Research Netherlands, Eindhoven
- Prof. J. Kievit
  Professor of Medical Decision Making, Leiden University Medical Centre
- Dr. R. van Olden
  Medical Director, GlaxoSmithKline
- Prof. S.A. Reijneveld
  Professor of Social Medicine, University Medical Centre Groningen
- Dr. C. Smit
  Representative of patients and consumers

- Dr. H.A. Smit
  Head of Centre for Prevention and Healthcare Research, National Institute of Public Health and the Environment (RIVM), Bilthoven
- Prof. A.E.M. Speckens
  Professor of Psychiatry, Radboud University Nijmegen Medical Centre
- Dr. M.J. Trappenburg
  Lecturer in Politics, Utrecht School of Governance
- Dr. L. van 't Veer
  Molecular biologist, Netherlands Cancer Institute, Amsterdam
- Prof. R. Vos
  Professor of Health Ethics and Philosophy, Maastricht University
- Prof. C. van Weel
  Professor of Family Medicine, Radboud University Nijmegen Medical Centre
- Prof. H.M. Pinedo, *observer*
  Vice-Chair, Netherlands Organisation for Health Research and Development (ZonMw)
- Prof. E.G.E. de Vries, *observer*
  Chair, Council for Medical Sciences, Royal Netherlands Academy of Arts and Sciences (KNAW)
- M.W. Horning, *adviser*
  Directorate of Innovation, SenterNovem
- J. Lely, *adviser*
  Department of Research and Science Policy, Ministry of Education, Culture and Science
- Dr. C.M. Vos, *adviser*
  Macro-Economic Issues and Working Conditions Directorate, Ministry of Health, Welfare and Sport, The Hague
- Dr. J.N.D. de Neeling, *scientific secretary*
  Health Council (GR) / Advisory Council on Health Research (RGO), The Hague

The Health Council and disclosure of interests

Members of the Health Council committees – which also include the members of the Advisory Council on Health Research (RGO) since 1 February 2008 – are appointed in a personal capacity, because of their special expertise on the matter under consideration. However, they may also have certain interests, often precisely because of their expertise. In principle this need not be a bar to member-

ship of a Council committee. But openness about any potential conflicts of interest is important, both towards the chair and the other members of the committee and towards the chair of the Health Council. That is why people who are invited to join a committee are asked to complete a form to disclose the posts they hold as well as other material and non-material interests they have which may be relevant for the committee's work. It is up to the Council chair to decide whether the reported interests are reason not to appoint a person. If an appointment is not appropriate, it may be possible to draw on the person's expertise by asking him or her to participate in the committee's work as an adviser. The interest disclosure forms are discussed during the committee's inaugural meeting, so that all committee members are aware of each other's interests.

B

The committee

- Prof. P.J. van der Maas, *chairman*
  Chair, Advisory Council on Health Research (RGO)
- I. van Bennekom
  Director, Netherlands Federation of Patients and Consumers (NPCF) (until 31 March 2008), Director, Long-Term Care Directorate, Ministry of Health, Welfare and Sport (from 1 April 2008)
- Dr. H.J.J.M. Berden
  Director, St. Elisabeth Hospital, Tilburg
- Dr. A. Boer
  Executive Board Member, Healthcare Insurance Board (CVZ)
- Prof. T.E.D. van der Grinten
  Emeritus Professor of Healthcare Policy and Organisation, Erasmus Medical Centre, Rotterdam
- Prof. P.P. Groenewegen
  Professor of the Spatial and Social Aspects of Public Health and Healthcare, Utrecht University, Director, Netherlands Institute for Health Services Research (NIVEL) (from 1 January 2009)
- Prof. R.P.T.M. Grol
  Professor of Healthcare Quality, Radboud University Nijmegen Medical Centre

- Dr. I.M.E. Heesbeen (from 1 January 2008)
  Senior Policy Officer, Client Quality and Innovation, Healthcare Providers Association (ActiZ)
- Prof. N.S. Klazinga
  Professor of Social Medicine, Academic Medical Centre, University of Amsterdam
- M.E. Rompa-Kunst (until 31 December 2007)
  Director, Healthcare Providers Association (ActiZ) (until 31 December 2007)
- Prof. J.M.G.A. Schols
  Professor of Chronic Care, Tilburg University, Professor of Nursing Home Medicine, Maastricht University
- Dr. H.A. Smit
  Head, Centre for Prevention and Healthcare Research, National Institute of Public Health and the Environment (RIVM)
- Dr. M.J. Trappenburg
  Lecturer in Politics, Utrecht School of Governance
- Prof. D. Wiersma
  Professor of Clinical Epidemiology of Psychiatric Disorders, University Medical Centre Groningen
- Dr. M.B.J.A. Janssens, *observer* (from 1 June 2008)
  Netherlands Organisation for Health Research and Development (ZonMw)
- Dr. J. van Kammen, *observer* (until 31 May 2008)
  Netherlands Organisation for Health Research and Development (ZonMw)
- W. Reijmerink, *observer*
  Macro-Economic Issues and Working Conditions Directorate, Ministry of Health, Welfare and Sport, The Hague
- Dr. S.H.M. Litjens, *scientific secretary*
  Health Council (GR)/Advisory Council on Health Research (RGO), The Hague
- Dr. R. van der Sande, *scientific secretary*
  Health Council (GR)/Advisory Council on Health Research (RGO), The Hague

Historical context:
health services research since 1994

In 1994 the Advisory Council on Health Research published a report on health services research[2], in which it identified a number of bottlenecks and made recommendations for improvement. In part as a result of this report, the Netherlands Organisation for Health Research and Development (ZonMw) ran the Scientific Quality of Health Services Research (WK-GZO) programme from 1998-2005, under the authority of the Ministry of Health, Welfare and Sport. What has changed since that time? What progress has been made? And what can still be done better? This annex outlines the previous history of health services research as well as its development, driven in part by the Council's recommendations from 1994.

The Council's 1994 report on health services research

Bottlenecks highlighted in 1994

In its 1994 report on health services research[2], the Council highlighted several bottlenecks that were slowing down or even obstructing the further positive development of health services research. The Council distinguished bottlenecks relating to the social and policy support function of health services research, bottlenecks of a substantive nature, and bottlenecks of an organisational nature.

With regard to the social and policy support function, the Council at the time identified three bottlenecks.

The first was the *tension between the demands of social relevance/usability and those of scientific quality*. In practice the researchers' ambition for scientific quality was sometimes difficult to square with the wishes of policy makers or healthcare professionals for fast solutions to policy issues or practical problems.

The second bottleneck was the *tension between financial dependence and substantive objectivity*. The task here was to find the right balance between the researcher's empathy with the sponsor and its policy issues and the researcher's independence and need to see the question at hand in terms of the 'public interest'.

The third bottleneck involved the *limited publication of research results*. Often these were only published in a report to the sponsor, so that their impact on practice remained small and the value of the scientific performance was not sufficiently recognised.

In the substantive sphere, the Council highlighted two bottlenecks.

Firstly, the *limited theory formation and methodological development* in health services research, which held back the quality of the discipline.

And secondly, the *inadequate quality assessment for health services research*. At that time hardly any indicators had been developed for social quality, and the traditional scientific quality assessment (with publication and citation counts as the measuring instrument) was, owing to the difference in publication behaviour, not automatically suitable for the specific field of health services research.

There were also two bottlenecks of an organisational nature.

Firstly, the Council took the view that the frequent commissioning of health services research in individual projects led to *poor coherence in knowledge development*.

And secondly, the Council regarded the *lack of standardised registration of patient data and poor accessibility of registration systems* as impediments to scientific research and policy development.

Recommendations made in 1994

The Council realised in 1994 that some of the identified problems were inherent to the specific research area, and consequently could not be resolved with concrete measures. Awareness and recognition of the problems might well be a major step forwards in these cases, according to the Council. For those areas where concrete solutions to problems were possible, the Council made a number of recommendations in its 1994 report.

In general the Council took the view that many of the bottlenecks facing health services research could be overcome through a *more systematic support and direction of this research*. For the programming and coordinating role the Council envisaged the PEOO, an intermediary organisation for Projects, Experiments, Development and Research which it had already suggested earlier.[26] This organisation would also be able to set priorities within health services research more systematically, with the aim of creating greater coherence in the research.

   The Council also took the view that the *research should be concentrated in institutions of reasonable size*, albeit without going too far in this respect. The necessary infrastructure (basic funding, databases etc) could be linked to these larger institutions.

   The tension between scientific quality and social relevance was one of the bottlenecks where acknowledgement would already be a major step forwards. According to the Council's 1994 recommendation, s*pecific expertise and intensive consultation* would be required to find the right balance in translating the sponsor's problems into research questions which could be investigated within

the framework conditions. This recommendation also applied to the translation of research results into possible policy solutions.

The identified bottleneck of the tension between financial dependence and substantive objectivity also needed to be acknowledged. Moreover, the Council took the view that independent *expertise* would be important for achieving a good balance between these two aspects.

Further to the observation that research results were given only limited publicity, the Council suggested a *more targeted knowledge transfer*. At the time the Council observed that in practice this was already happening more and more by means of publication of results in policy-oriented journals and in the form of training programmes, courses and conferences. The Council also argued for more publication of results in national and international scientific or professional journals. The proposed PEOO could ensure this by creating the necessary space in the infrastructure.

To promote *scientific theory formation and methodology development*, the Council advised that researchers should be given *sufficient scope* to engage in this. This scope could be provided through a basic subsidy (percentage) or a surcharge on contract research. Again, the proposed PEOO could take on a facilitating and coordinating role in this area, according to the Council.

In 1994 a first step had already been taken towards improving the quality assessment of health research in general in the form of a test by the Committee for Experimental Visitations of Health Research (BEVG), which provided indicators for both the scientific quality and the social relevance of research.[27] The Council took the view that an *assessment tool supported by the field* should be developed as a matter of urgency.

To improve information provision from the registration systems and databases, the Council argued for a *further standardisation*. In light of the stricter regulations on personal data protection, the Council also called for *improving the availability* of data.

Developments in health services research since 1994

What happened to the recommendations made in 1994? Were they followed? Did the bottlenecks disappear of their own accord because the situation changed, or do some of them still exist? This section looks at the developments surrounding the bottlenecks identified in 1994.

The Council's recommendation to establish a programming and coordinating organisation was one of the factors which led to the foundation of Health Research Netherlands (ZON) in 1995. In 2001 ZON merged with the Medical Sciences division of the Netherlands Organisation for Scientific Research (NWO) to form the Netherlands Organisation for Health Research and Development (ZonMw). Since 1995 ZON and ZonMw have launched and executed a range of programmes in the area of health services research. The tension between scientific quality and social relevance prompted ZonMw to establish the Scientific Quality of Health Services Research (WK-GZO) programme in 1998, under the authority of the Ministry of Health, Welfare and Sport. This programme, which ran until the end of 2005, was intended to deliver a qualitative impulse to health services research.[28] By offering specific courses in two research institutes (the Netherlands Institute for Health Sciences [NIHES] and the Netherlands School of Primary Care Research [CaRe]), the programme contributed to a growth in the number of researchers specifically trained in health services research. In addition, various publications arising from the WK-GZO programme help to support researchers in safeguarding quality (e.g. guidelines for

the scientific quality of health services research[29], a brochure with tips for health services researchers[30] and a manual on health services research[4]).

The above-mentioned guidelines were formulated in cooperation with health services researchers and therefore enjoy broad support in the field. And finally, the WK-GZO programme made a start with mediating between researchers and field parties in the form of a brokering experiment. The aim of this experiment was to gain insight into the most suitable form of 'knowledge brokering' between knowledge users and researchers. Unfortunately the experiment did not allow enough time for the brokering, so that its success was limited. Even so, the WK-GZO programme made a significant contribution to the improvement of the scientific quality of health services research. But this had very little impact on easing the tension between scientific quality and social relevance. On the contrary, the duration of projects has shortened over time, which has intensified the pressure on scientific quality. In the evaluation of the programme the tension between short-term practical projects and long-term fundamental research questions (in which the competency of health services researchers needs to be safeguarded) was regarded as a major issue for concern.[29] A second issue mentioned in the evaluation was the need to achieve a more coherent and sustainable research programme.

Already in 1994 the Council argued for systematic support for health services research with structural funding. Although a number of ZonMw programmes are very suitable for health services research, to date no specific research programme for health services research has been established. Solid basic funding has not become available. By contrast, a positive development is the formation of a number of institutions with sufficient capacity to address major research questions.

Another bottleneck identified by the Council in 1994 was the limited impact of research on healthcare practice. That is why the Council recommended a more targeted knowledge transfer to healthcare professionals and more publications in national and international scientific journals. A search on the PubMed service[**] reveals that the dissemination of Dutch health services research results in national and international journals has improved significantly in recent years.

Another initiative aimed at increasing the impact of research results in healthcare practice is the formation of academic workplaces in the areas of social medicine and public health. In the academic workplace formula, both the knowledge institutions and healthcare institutions invest in research projects (which are often based on practical questions) with the aim of working in an evidence-based way. Yet another initiative is the relatively recent formation of lectureships in

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[*] www.ncbi.nlm.nih.gov/sites/entrez.

higher vocational (HBO) institutions. These are research groups which develop knowledge in socially relevant fields which can be applied within the education system or in professional practice. There are around ten HBO lectureships in the Netherlands in the area of health services research. Most of the projects are executed in cooperation with healthcare institutions. This means that implementation can take place immediately and locally. What is more, the knowledge is embedded in the education system, so that future healthcare providers will also become aware of the latest developments. Although there is considerable embedding of research in healthcare and education through academic workplaces and HBO lectureships, there are some limitations to this approach. One of them is its regional character, which means that the scope of the research results still remains limited. Although the results are disseminated more than in the past, implementation still remains largely restricted to the affiliated institutions, leaving healthcare in other institutions unchanged unnecessarily for too long. There is also a risk that problems associated with an individual institution become a subject of academic research when such questions are not important at national level and do not deserve any priority.

The Council observed in 1994 that the quality assessment of health services research was problematic. It is therefore a positive development that in recent years various bodies, including the Royal Netherlands Academy of Arts and Sciences (KNAW) and the Council itself, have given consideration to appropriate criteria for the social relevance and impact of health research.[19,27] The expectation is that criteria for social impact measurement will be included in the Standard Evaluation Protocol (SEP), which is due for revision in 2009. This acknowledges the social importance of practice- and policy-oriented research such as health services research. However, there are also signs that the inclusion of social relevance in the quality assessment will not raise the success rate of health services research proposal applications in the open programmes sufficiently. The inclusion of social innovation in the concept of 'innovation' has not led to a turn-around, according to ZonMw.[*] Recently the KNAW established a new standing committee, the Research Quality Committee, which will analyse how the quality of research is assessed at the moment and how the domination of the open competition by certain disciplines can be prevented. This committee is expected to take account of the latest developments in the area of quality assessment.

And finally, the Council identified an impediment to scientific research and policy development due to the lack of standardised registration systems and poor

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[*] www.zonm.nl, "Uit de Krant: Te weinig geld voor algemeen nut", 19 August 2006.

accessibility of databases with patient details. Although some improvements can be reported, there are still considerable problems in this area. The Council recently submitted an advisory report on this issue to the Minister of Health, Welfare and Sport.[20]

Box C.3 Developments since 1994

1   A programming and coordinating organisation has been founded, the Netherlands Organisation for Health Research and Development (ZonMw). Although health services research fits within the frameworks of ZonMw programmes, the thematic programming does not lead to coherence and sustainability in this research area.

2   A number of institutions of sufficient size have emerged, and research institutes have been founded. However, this infrastructure is not provided with structural support.

3   The ZonMw programme Scientific Quality of Health Services Research (WK-GZO) has produced a number of guidelines for scientific quality which are broadly supported by the field, as well as the specific training of health services researchers in two research institutes (NIHES and CaRe). An experiment with 'knowledge brokering' between researchers and field parties unfortunately produced few results.

4   Knowledge transfer through more targeted publication of results has improved significantly. Other initiatives aimed at achieving an efficient knowledge transfer to field parties (academic workplaces and HBO lectureships) have also been unfolded.

5   The basic subsidy or surcharge on contract research aimed at stimulating theory formation and methodology development in health services research has not been introduced.

6   Criteria to measure the social quality of research have been developed and will probably be included in the Standard Evaluation Protocol (SEP).

7   Standardisation and accessibility of databases have improved somewhat, but the problems are still considerable.

Conclusions

Health services research in the Netherlands has undergone major changes since 1994 and has made significant contributions to the improvement of public health and healthcare. Over the years, health services research in the Netherlands has grown into a discipline of considerable size and with international recognition. This positive trend had already started before 1994, and has continued since. By now several relatively large institutions have emerged and three graduate schools have been founded where health services research plays a major role (Netherlands Institute for Health Sciences [NIHES], Netherlands School of Primary Care Research [CaRe], Graduate School for Health Research [SHARE]). A number of bottlenecks in health services research have been addressed since 1994. This has led to, among other things, a higher quality of health services research, a wider national and international dissemination of knowledge, and better training of researchers. Moreover, attention remains focused on the other identified bottlenecks, such as an appropriate quality assessment system for a discipline such as health services research. But there is still room for improvement.

D

Nature and extent of health services research in the Netherlands

Respondents

Departments

1 Academic Medical Centre, Amsterdam – Department of Medical Informatics
2 Academic Medical Centre, Amsterdam – Department of General Practice
3 Academic Medical Centre, Amsterdam – Department of Medical Psychology
4 Academic Medical Centre, Amsterdam – Department of Social Medicine
5 Academic Medical Centre, Amsterdam – Amsterdam Institute for Addiction Research
6 Academic Medical Centre, Amsterdam – Coronel Institute for Occupational Health
7 Erasmus Medical Centre, Rotterdam – Department of Medical Ethics
8 Erasmus Medical Centre, Rotterdam – Department of Public Health
9 Erasmus University Rotterdam – School of Economics, Health Economics Division
10 Leiden University Medical Centre – Department of Public Health and Primary Care
11 Radboud University Nijmegen – Faculty of Law, Section of Public Health Law
12 University of Groningen – Faculty of Economics and Business
13 University Medical Centre Groningen – Rob Giel Research Centre

14 Radboud University Nijmegen Medical Centre – Scientific Institute for Quality of Healthcare (IQ Healthcare), part of Nijmegen Centre for Evidence Based Practice (NCEBP)
15 University of Twente – School of Management and Governance, Department of Science, Technology, Health and Policy Studies (STeHPS)

Centres

16 Erasmus University Rotterdam – Institute of Health Policy and Management (iBMG)
17 University Medical Centre Groningen – Graduate School for Health Research (SHARE) / Northern Centre of Healthcare Research (NCG)
18 University Medical Centre Utrecht – Julius Centre
19 Radboud University Nijmegen Medical Centre – Nijmegen Centre for Evidence Based Practice (NCEBP)
20 Maastricht University – Care and Public Health Research Institute (CAPHRI)
21 Tilburg University– Scientific Centre for Transformation in Care and Welfare (Tranzo)
22 VU University Medical Centre – Institute for Research in Extramural Medicine (EMGO)

Knowledge institutes

23 Netherlands Institute for Health Services Research (NIVEL)
24 O3 Research Centre, Mental Health Care Rijnmond
25 National Institute of Public Health and the Environment (RIVM) – Centre for Prevention and Health Services Research (PZO)
26 Netherlands Organisation for Applied Scientific Research (TNO) – Quality of Life
27 Trimbos Institute

Clustering

Five of the eight university medical centres in the Netherlands have clustered health services research with other health research in research centres (EMGO in Amsterdam, CAPHRI in Maastricht, NCEBP in Nijmegen, SHARE in Groningen and the Julius Centre in Utrecht). The Erasmus Medical Centre and Tilburg University have clustered health services research in centres without other types

of research (iBMG and Tranzo, respectively). In the past the Academic Medical Centre (AMC) in Amsterdam had also clustered a number of departments in a centre (the Amsterdam Centre for Health and Health Care Research, AmCOGG), but this clustering was abandoned. At the moment the AMC is organising a number of departments into research clusters, of which Health Services Research is one. Health services research is also conducted in a number of national research institutes, namely NIVEL, RIVM, TNO and the Trimbos Institute. In addition to this clustering in centres and institutes, health services research is also conducted in a number of university departments.

The IQ Healthcare department of the Radboud University Nijmegen Medical Centre is part of the NCEBP. Both the department and the centre completed the questionnaire. The final results were corrected for duplications. These respondents will be referred to below as "NCEBP / IQ Healthcare".

The Council did not receive completed questionnaires from seven departments. Three of these departments belong to a medical faculty, while four belong to other faculties. Health services research does not seem to be a primary activity in any of the seven departments. Hence the Council does not believe that the absence of data from these departments has a material effect on the final results.

Staffing and resources

The tables below show the overall levels of staffing and resources for health services research among the respondents. The indicated staff levels are based on the question regarding the number of full-time equivalents (regardless of professional background). For centres where other health research is also conducted in addition to health services research, a percentage of the indicated total number of staff and size of the research budget was used in proportion to the percentage of health services research within the institution. This percentage was calculated on the basis of publication lists in annual reports and estimates by the centres themselves. The centres in question were SHARE, EMGO, Julius Centre, NCEBP, CAPHRI and TNO.

Table 1 Staff numbers for health services research, in full-time equivalents (FTEs).
This table shows the total number of FTEs as reported by the respondents, broken down into scientific staff and non-scientific staff.

Staff numbers (FTEs)	2005	2006
Scientific staff	493	516
Non-scientific staff	80	92

Table 2 Financial resources for health services research, in EUR millions.
This table shows the total budget for health services research as reported by the respondents.

Financial resources (EUR millions)	2005	2006
Total budget health services research	57.6	59.7

Eight respondents have budgets of more than EUR 3 million per year for health services research and are referred to below as the large institutions, these are: NIVEL, iBMG, TNO, Trimbos Institute, EMGO, NCEBP / IQ Healthcare, the Department of Public Health of the Erasmus Medical Centre, and CAPHRI. There are eight medium-sized institutions, with budgets between EUR 0.5-3 million per year for health services research, namely the Rob Giel Research Centre, RIVM, Julius Centre, Centrum, Coronel Institute, SHARE, Tranzo and AMC's Clinical Informatics and Medical Psychology departments. The other 10 respondents have budgets below EUR 0.5 million per year for health services research. These will be referred to below as the small institutions. One of them, the Section of Public Health Law of the Radboud University Nijmegen, turned out not to have a budget for health services research.

Figures from Statistics Netherlands and from publications by the Ministry of Education, Culture and Science derived from them[22,31,32] reveal that a total of EUR 8.9 billion was spent on research and development in the Netherlands in 2006. Of this total, EUR 3.7 billion was spent on research in the public sector, i.e. universities, university medical centres and non-university research institutes. An estimated EUR 829 million was available for public health research in 2006. Hence the nearly EUR 59.7 million for health services research amounted to just over 7% of the total health research budget.

To gain an insight into the sources of funding for health services research, the Council asked the respondents for the distribution across the various funding streams (see box D.1).

Table 3 shows the distribution of financial resources for health services research by funding type. This distribution varies considerably for the different categories of research institutions: the small institutions have relatively large proportions of

direct funding and small proportions of contract funding, while the reverse applies for the large institutions (see table 4).

Box D.1 Definitions of funding streams used in the questionnaire

Direct funding ('eerste geldstroom'): basic funding extended by the government.

Indirect funding ('tweede geldstroom'): funding obtained in open competition from independent public research funding bodies, such as the Netherlands Organisation for Scientific Research (NWO) and the Netherlands Organisation for Health Research and Development (ZonMw).

Contract funding ('derde geldstroom') and commercial funding ('vierde geldstroom'): commissioned research funding provided by health insurance companies, commercial companies, public authorities and the European Union, and funding from private sources, such as donations and bequests.

Table 3 Financial resources broken down by funding type, in EUR millions and as a percentage of the total budget, 2006.
The second column shows the budget for each funding type as reported by the respondents, and the third column the percentage of the total budget. All respondents are included, because the variant definitions of funding types used by some institutions have virtually no effect on the percentages.

Financial resources by funding type (2006)	€ millions	%
Direct funding	15.9	26.6
Indirect funding	16.5	27.7
Contract funding / commercial funding	27.3	45.7
Total	59.7	100.0

Table 4 Financial resources broken down by funding type and institution size, in EUR millions and as a percentage of the total budget, 2006.
This table shows the percentage of resources by each funding type of the total budget for small, medium-sized and large research departments, centres and institutes. The figures for the RIVM are not included here, because this institution's variant definitions of funding types may distort the picture.

Financial resources by funding type and institution size (2006)	(< € 0.5 million)		Medium-sized (€ 0.5-3 million)		Large (> € 3 million)	
	€ millions	%	€ millions	%	€ millions	%
Direct funding	0.8	42.9	4.0	31.7	9.6	21.2
Indirect funding	0.6	29.2	2.9	23.3	13.4	29.6
Contract funding/ commercial funding	0.5	27.9	5.7	45.0	22.2	49.2
Total	2.0	100.0	12.5	100.0	45.2	100.0
Share of total financial resources	3.3%		21.0%		75.7%	

Interaction with stakeholders in research

Health services research tends to be applied in policy and practice. A dialogue between the researchers and those who use their research results is therefore important in this context. Five institutions reported that they could not estimate the number of contacts with field parties. Among the 21 institutions which did make an estimate, the number of contacts between researchers and field parties varied considerably. The respondents indicated whether their research was relevant for the various stakeholders and how often they had contact with these stakeholders. All respondents declared that their research was important for various parties (see table 5). The extent of contact with stakeholders varied widely (see diagram 1). The larger the research institution, the greater the number of contacts. But even within the three institutions sizes, the frequency of contact with stakeholders varied widely (as evidenced by the high standard deviation).

Table 5 Stakeholders in research.
The stakeholders are defined by the respondents. The respondents have been broken down by institution size. The figures indicate the number of respondents within each group which regard the stakeholder in question as a stakeholder in their research.

Stakeholders in research	Central government policy makers	Local authority policy makers	Healthcare managers	Insurers/ Health Care Insurance Board (CvZ)	Healthcare providers (individuals or professional organisations)	Patients/ consumer organisations	Others, namely
Small <€0.5 million)	7/9	4/9	6/9	6/9	7/9	6/9	Scientists 5/9
Medium-sized (€0.5-3.0 million)	7/8	3/8	5/8	7/8	8/8	7/8	Scientists 4/8
(>€3 million)	8/8	7/8	8/8	8/8	8/8	7/8	Scientists 5/8 EU 1/6

Research topics

The Council asked the researchers to classify their research according to one or more of the following topics: effectiveness, safety, patient orientation, quality system, efficiency, accessibility and sustainability (cost and structure). Researchers were also asked to classify the research by scale level: macro, meso, micro and cross-level. Together with the reported staff levels, this made it possible to estimate the relative staff levels per topic. Table 6 shows the research topics engaged in by the respondents.
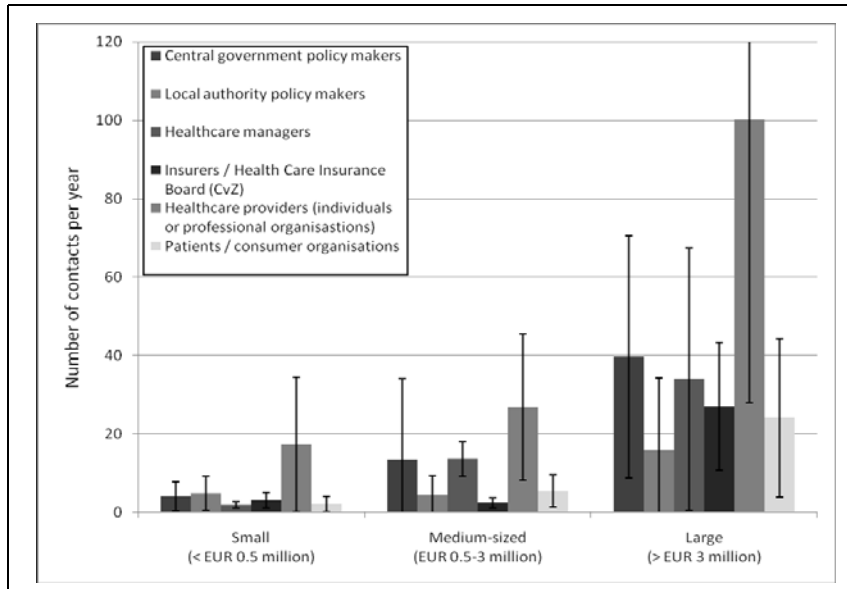
Diagram 1 Number of contacts between researchers and stakeholders per year.
This figure shows the averages of the frequency of contacts between institutions and relevant stake-
holders as reported by the respondents. The respondents have been broken down by institution size.
The error bars show the standard deviation.

Table 6 Relative staff levels available for research per topic and scale level.
This table shows the percentage of staff committed per topic within health services research. Respondents classified their
research programmes according to these topics. On the basis of the reported staff levels, an estimate has been made of the rela-
tive number of staff available for each topic.

Commitment per topic (%)	Effectiveness	Safety	Patient orientation	Quality system	Efficiency	Accessibility	Sustainabil- ity (cost and structure)	Total
Macro	4.1	2.4	3.0	2.4	3.3	2.8	1.5	19.5
Meso	8.1	3.8	6.6	6.7	3.6	3.4	1.7	33.9
Micro	10.3	3.5	7.6	3.6	7.2	4.1	1.5	37.8
Cross-level	1.6	0.6	2.4	0.8	1.2	1.2	0.9	8.9
Total	24.0	10.3	19.7	13.6	15.4	11.4	5.6	100

ZonMw programmes with scope for health services research

The following programmes operated by the Netherlands Organisation for Health Research and Development (ZonMw) have scope for health services research. The figures shown in brackets refer to 2008 and indicate the financial resources available for research within each thematic programme. Health services researchers compete with other researchers for these resources.

Thematic programmes
- Care for the Elderly (EUR 2.2 million)
- Emergency Care (EUR 0.1 million)
- Academic Collaborative Centres (EUR 2.5 million)
- Health Care Efficiency Research (EUR 13.2 million)
- Evaluation of Legislation (EUR 0.15 million)
- Quality of Curative Care Knowledge Policy (EUR 0.3 million)
- Health Promotion and Disease Prevention (EUR 7.0 million)
- Youth (EUR 4.1 million)
- Mental Health (EUR 2.5 million)

Open Programme
- Agiko Stipends (EUR 1.2 million)
- Large and Medium-Sized Investments (EUR 2.6 million)
- Network Grants (EUR 0.1 million)
- Innovational Research Incentives Scheme (Veni, Vidi, Vici) (EUR 16.1 million)
- TOP Grants (EUR 3.3 million)
- Clinical Fellows (EUR 0.2 million)

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'Health Services Research: Lessons from Abroad'

Report of the international working conference on 22 January 2008

To gain an impression of how other countries organise their health services research, three speakers were invited from Canada, the United Kingdom and Germany to inform the committee about the experiences in their countries. These three countries were selected for the following reasons: Canada was chosen because of the country's considerable experience with the active promotion of knowledge exploitation in the healthcare sector through 'linkage and exchange'.[7,12,14] The choice for the United Kingdom was based on the excellent health services research in that country and their experiences with an organisation such as the National Institute for Health and Clinical Excellence (NICE). And the committee considered Germany important because it has a healthcare system similar to that of the Netherlands.

Although health services research seems to be better organised in these three countries than in the Netherlands in a number of ways, they also have shortcomings which affect the effectiveness and efficiency of research and its exploitation. Some of these shortcomings correspond to those identified by the committee in the Netherlands, while others do not apply to the Netherlands, usually because of differences in the healthcare systems or research systems.

Despite these differences, the conference gave rise to a fruitful exchange of views between the foreign guests and the other participants. In this atmosphere the Dutch participants were able to benefit from experiences in other countries, while the foreign guests were inspired by Dutch experiences.

Experiences

The participants agreed that health services research has had a huge impact on the improvement of healthcare, but that it is difficult to demonstrate a direct causal link between the two.

The budget for health services research in the Netherlands is comparable with the corresponding budgets in Canada and the United Kingdom, namely around 5% of the total budget for health research. The size of the German budget is not known.

Health services research can be used in two ways: as a source of information prior to policy formation and administrative decision making, or as a means of evaluating policy and administrative decisions. Participants agreed that there is still much to be gained for health services research especially in the area of knowledge exploitation prior to policy formation and administrative decision making.

Four key take-home messages from the conference

1   *Involve policy makers and field parties in the identification and prioritisation of research topics*
In Canada and the United Kingdom the identification and prioritisation of topics takes place through consultations with major stakeholders. In Canada this is done through the Listening for Direction consultation process. In the United Kingdom identification of topics takes place with the help of a Listening Exercise and prioritisation of the results by the main stakeholders of the programme in question. Both activities are interactive, which means that stakeholders arrive at priorities through mutual consultations. A well-coordinated follow-up is essential to ensure that the results are actually used in the research programming. This involvement of field parties and policy makers heightens the awareness that health services research is of major importance to the improvement of public health.

2   *Improve the link between researchers and field parties and policy makers*
The involvement of field parties and policy makers in the identification and prioritisation of research topics heightens their awareness of the importance of health services research. The funding of programmes dedicated to health services research also enhances the profile and importance of health services research among field parties and policy makers. In Canada this specific funding is effected through the CIHR - Institute for Health Services and Policy

Research, and in the United Kingdom through three specific programmes, Health Technology Assessment (HTA), Service Delivery and Organisation research (SDO) and Health Care Systems and Policies.

The involvement of field parties and policy makers also appears to increase through the participation of representatives from public authorities, patient organisations, healthcare institutions, insurance companies and other stakeholders in the board of funding and advice organisations. This is already often the case in the Netherlands, for example with ZonMw and the Advisory Council on Health Research. Experience also shows the benefit of training policy makers and administrators to be receptive to research. But no less important is instructing researchers on how policy processes operate and making them realise that scientific knowledge is only one of the aspects on which policy is based.

Innovative funding models also offer opportunities for establishing links between researchers and policy makers. Canada provides a good example of this: a researcher can only obtain funding if a policy maker or field party is involved in the research, while the involved policy maker or field party is obliged to match 50% of the funding. Investigation into other funding forms is recommended.

And finally, the creation of networks can help to raise the profile of target groups. When there is a network of all health services researchers, policy makers and healthcare managers will have a better idea of where they can direct their questions. Networks of field parties which support the role of health services research are also important in establishing links with researchers.

3 *Ensure an appropriate balance between applied research and excellence*
One of the shortcomings of Dutch health services research is insufficient contact between policy makers and field parties. Means of improving this link have been mentioned above. However, there was also a warning from the conference that the integration of researchers with policy makers/administrators should not be pushed too far.

There must be space for centres of excellence where it is possible to conduct fundamental research (such as methodology development) as well as applied research. The investment in fundamental research and the necessary capacity development will pay off at a later stage in the form of more timely and helpful answers to questions raised by policy makers and administrators. This type of research will thus contribute to healthcare provision at a later stage (long-term planning). Related to this, there must also be room for funding the

best research proposal, rather than the proposal that fits best in the programme frameworks. This is the only way of retaining the best researchers – another investment that will pay off over the long term. The European Framework Programmes were cited as examples of relatively broad and flexible programmes. In short, although more attention must be paid to knowledge transfer and implementation, it is also important to strike an appropriate balance with excellent (fundamental) research.

4   *Invest in infrastructure and capacity*
The importance of networks of researchers and field parties has already been emphasised. A specific network of health services researchers helps to raise the profile of this group. But networks consisting of a mix of health services researchers and other health researchers (clinical researchers and biomedical researchers) can also be successful. These networks improve cooperation between the various research disciplines, lifting the research to a higher level. In Germany the research community has itself created a network of health services researchers and clinical researchers. This network organises highly successful conferences, which have proved very relevant and fruitful for both the clinical researchers and the health services researchers. By analogy, multidisciplinary cooperation should be promoted.

The Canadians are particularly wedded to a mix of health services researchers, biomedical researchers and clinical researchers. The Germans also have such alliances, despite the recognition that health services researchers have less prestige in such alliances than, say, biomedical researchers. This may be due to the track record of health services researchers: they cannot boast as many publications as the biomedical researchers, and on top of that the journals in which they publish often have a smaller impact. This problem has already been observed in the Netherlands. Although the publication behaviour of Dutch health services researchers has improved significantly over the past 10 years, they also sometimes still find themselves treated less favourably than biomedical and clinical researchers.

A good infrastructure and sufficient research capacity are vital for the conduct of research. In practice it is often the case – in Canada for instance – that research funders are willing to allocate resources to the development of infrastructure and capacity, but not to their maintenance. But it is important to keep a close eye on the long-term objectives as well, otherwise the previous development investments will prove a waste. Investments in methodology development, data collection and data linkage are considered very important in all countries. The loss of young talent is a problem in other countries as

well. Investments in capacity are therefore highly recommended. Experiences in Germany and the United Kingdom in particular show that when resources are allocated to infrastructure and capacity development, funding several larger groups is more efficient than spreading the money around. Universities will already have invested in the large centres of excellence, so the most talented researchers will be based there.

Major research topics in need of funding are knowledge transfer and change management. In Canada in particular the emphasis is on knowledge transfer, and there is a strong demand for research into change management as well. Both topics serve to increase the exploitation of research results, and therefore a more efficient application of research resources. And finally, there is clearly a desire in all countries for more international cooperation.

Foreign guest speakers

- Dr. Colleen Flood, Canadian Institutes of Health Research - Institute of Health Services and Policy Research, Toronto, Canada
- Prof. Nick Black, London School of Hygiene & Tropical Medicine, England
- Prof. Reinhard Busse, European Observatory on Health Systems and Policies, Brussels, Belgium, and Technical University of Berlin, Germany

Healthy services research