
Science advice on public health at national and European level

Discussion paper



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Invitational meeting
Health Council of the Netherlands

No. A05/06E, The Hague, September 29, 2005 (*Revised version, May 16, 2006*)

The Health Council of the Netherlands, established in 1902, is an independent scientific advisory body. Its remit is “to advise the government and Parliament on the current level of knowledge with respect to public health issues...” (Section 21, Health Act).

The Health Council receives most requests for advice from the Ministers of Health, Welfare & Sport, Housing, Spatial Planning & the Environment, Social Affairs & Employment, and Agriculture, Nature & Food Quality. The Council can publish advisory reports on its own initiative. It usually does this in order to ask attention for developments or trends that are thought to be relevant to government policy.

Most Health Council reports are prepared by multidisciplinary committees of Dutch or, sometimes, foreign experts, appointed in a personal capacity. The reports are available to the public.

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Introduction

The Health Council of the Netherlands will host an invitational meeting entitled '*Science advice on public health at national and European level*' in The Hague on 29 September 2005. This meeting will address the following issues:

- What is the role of science advice in the field of public health and health care, considering current developments in this field?
- What are the challenges for science advice on public health and health care in the future?
- Would national and European health policies profit from the strengthening of science advice in a European context?

Background

The European Commission stated in its 2001 white paper on European governance that scientific expertise plays an increasingly significant role in preparing and monitoring decisions¹. Director-General for Health and Consumer Protection Robert Madelin referred to this viewpoint in his speech at the inaugural joint meeting of the members of the non-food scientific committees in 2004². '*The Commission in general and DG Sanco in particular attach high importance to the use of sound science to underpin its work and strive therefore to ensure that its scientific advice is of the highest quality*'. In 2002 the European Commission

published a document in which the principles and guidelines on the collection and use of expertise by the Commission³ were laid down.

At the national level, science advice for policy decision in the field of public health is generally provided by national science advisory bodies such as a health council, a research institute or a scientific committee. Cross-border collaboration between national science advisory bodies has been modest so far. Consequently, science advice on similar health threats can differ between European countries, resulting in different national policies. A distinction should be drawn between science advice on public health at the national level and that in a broader context, for example at EU level. Scientific advice to the European Commission regarding public health and food safety is now provided by scientific committees. The scientific committees of the Directorate-General for Public Health and Consumer Protection consist of 13-18 national experts each. For specific questions they can call on the assistance of external experts and are even encouraged to do so⁴. As Mr Madelin stated in his above-mentioned address: *'We actively encourage you to make best use of external experts and to benefit from the enormous reservoir of expertise in the Community and beyond'*.

The Health Council of the Netherlands and the Health Council of Belgium think that there is ample room for intensifying the collaboration between national science advisory bodies beyond the national borders. A recent study performed by the Health Council of the Netherlands showed that science advisory bodies in European countries are keenly interested in setting up cross-border cooperation.

The following chapter describes current developments and challenges in the field of public health and health care to illustrate the issues requiring independent science advice. Chapter 3 gives an overview of institutions in Europe providing science advice on public health issues. Chapter 4 presents an initiative for establishing a *European expertise network for science advice on public health*, aimed at increasing cooperation between science advisory bodies at a European level. Chapter 5 presents questions to be discussed during the invitational meeting hosted by the Health Council of the Netherlands in The Hague on 29 September 2005.

Current developments and challenges for science advice on public health in the future

The health and life expectancy of people living in developed countries have improved dramatically during the 20th century. Average life expectancy at birth in several European countries rose by about 25 years in this period. These improvements are largely attributable to public health measures. The Ten Great Public Health Achievements identified by the US Centers for Disease Control and Prevention (CDC) in 1999 included vaccination programmes, the control of infectious diseases, food safety, safety at work, the promotion of mother and baby health, motor-vehicle safety, the control of cardiovascular disease and the recognition of tobacco use as a health hazard⁵. In the same year, priorities for public health action in the former 15 EU countries were summarised in a study financed by the European Commission⁶. The major public health issues identified here were social gradients in health, aging of the population, mental health, environmental health, food and nutrition and, of course, the major lifestyle issues alcohol, tobacco and drugs. Quality of care was also mentioned.

Many health problems are related to increasing globalisation. The transmission of infectious disease agents has, for example, become a transnational phenomenon as a result of increased international travel. Key issues concerning infectious diseases in Europe were addressed in recent reports of the Health Council of the Netherlands⁷ and the European Academies' Science Advisory Council⁸. Reports of this kind, prepared by an independent entity and based on thorough scientific

analysis, are helpful in determining the opportunities and challenges for innovation and health policy.

The increase in the prevalence of obesity likewise calls for action⁹. A substantial proportion of chronic diseases is now recognised as being linked to dietary and related factors, such as lack of physical activity, resulting in overweight and obesity. Although there are large dietary differences throughout the European Union and the prevalence of obesity shows a wide variation as well, there has been a significant increase in overweight children and adults in a number of European countries. In 2005, the Spanish Ministry of Health and Consumer Affairs launched a strategy for nutrition, physical activity and the prevention of obesity. It is to be expected that other countries will initiate similar measures if they have not already done so.

The demand for health care will change dramatically in the coming decades, partly as a result of the aging of the population and the increase in the number of people with chronic diseases (e.g. COPD, depression, diabetes, musculoskeletal disorders, neurodegenerative diseases and heart failure)¹⁰⁻¹². This ‘demographic pull’ is accompanied by a ‘technology push’ arising from advances in medical science and progress in the field of industrial product innovation. These advances include information technology, sophisticated imaging, less invasive treatment, biotechnology, genetics, screening technologies and further progress in organ function support and replacement¹¹⁻¹³. Various techniques will also be applied more frequently outside the hospital setting in the future. A gradual shift from clinical to outpatient, non-residential and home care¹³ has been observed for some time now.

The functioning of health care systems should not be overlooked. The accessibility, quality and affordability of health care are essential prerequisites of public health. Free movement of EU citizens between Member States raises the issue of cross-border health care. These aspects require permanent monitoring as health care systems come under increasing pressure. Health care systems have an unexploited potential to improve the prevention as well as the treatment of diseases, injuries, and disabilities⁹. At the same time, however, we need to balance equity, cost and quality, bearing in mind that unacceptable socio-economic health disparities still exist¹⁰. These disparities are a growing problem in many countries and are undesirable from a social and ethical point of view. There is an urgent need to strengthen public health activities aimed at socio-economically vulnerable groups.

The proliferation of health care problems and solutions is clearly paralleled by an explosion in scientific knowledge generated by academia and industry. Against this background, science advisory bodies could play an essential role by sharing information and providing advice on public health matters. Knowledge development, technology innovation and public health problems are typically all issues that tend not to be confined by national boundaries^{9,10,14}.

Science advice in a European context

National and international issues

Europe has a long-standing tradition of scientific achievement in the fields of public health and health care. There has also always been a great ambition to incorporate the results of scientific progress in policy and professional practice. While such efforts have been considerably successful in the past, current and future threats and challenges have led to increasing awareness of the need for international cooperation in the development of evidence-based health policy in Europe. Such an approach will not only have benefits for public health but will also contribute to societal and economic advances by improving the health of the population as a whole.

However, scientific progress cannot be built into policy without appropriate synthesis of research results, professional experience and expert judgment, making these available for public-health decision-making and evaluation. Science advice is thus a *sine qua non* for effective policy and professional practice.

Science advice on public health and health care in Europe is currently heterogeneous, complex and fragmented. Its coverage, efficiency and impact need to be improved to enable European countries to deal more effectively with the many common challenges at the interface of science and health policy concerning:

- issues that can in principle be handled at a *national* level but are encountered in much the same form in most countries and can thus be more efficiently analysed using international top expertise, e.g. blood safety, noise pollution, aging, genomics, biotechnology and the cost-effectiveness of various interventions;
- issues that are *transnational* in themselves and that require international collaborative analysis and advice for their resolution, e.g. food safety, epidemics, air quality and ecosystem integrity, but also the provision of top clinical care for disorders that are so infrequent or complex, or need such an expensive infrastructure for treatment, that individual nations may be unable to cope with them. Furthermore, the comparison of health-system performance and the factors determining such performance is a matter that demands a transnational approach.

Some issues can however be considered most effectively at the national level. These include the implementation of local prevention programmes, or topics on which scientific knowledge is shared internationally but may be applied in widely different ways in different countries, such as soft drug policy, medical end-of-life decisions or stem cell research¹⁵.

Creating an appropriate, stronger link between the national and transnational levels may be expected to yield greatly enhanced opportunities for more effective and efficient science advice for public health policy at both levels. Such an approach is particularly promising in the EU context, given the increasing possibilities for coherent European policy and the similarity of many health problems in the various Member States.

The national level

No comprehensive overview has yet been made of the science advisory bodies in the EU Member States, the domains they are active in, their composition, the advisory reports they publish (and have published in the past), and their current and future working programmes.

A survey, carried out in 2004/2005 by the Health Councils of the Netherlands and Belgium in collaboration with the EU's Network for Competent Authorities in Health Information and Knowledge, showed that at least 200 organisations were reported to be active in the 25 EU countries in the domains prevention & lifestyle, biomedicine, health care (development), environment and health, occupational hygiene, food and health, and bioethics. Substantial variation between

countries was found in the characteristics, structure and number of organisations (the last-mentioned variable ranging from just a few organisations to dozens).

The European level

There are various committees, organisations and collaborative structures involved in the provision of science advice on health policy at the European level. These bodies mainly address transnational issues. Important European organisations that provide science advice on public health will be highlighted in this chapter, but the list is by no means exhaustive.

Since the mid-1990s, EU institutions have taken steps to improve the use of the best scientific evidence in decision-making at EU level¹⁶. In 1997 the European Commission created eight independent scientific committees charged with providing scientific advice on matters relating to consumer health and food safety¹⁷. In January 2002, it decided to establish a European Food Safety Authority (EFSA)¹⁸. The five scientific committees dealing with food and animal health were transformed into a single scientific committee with eight supporting scientific panels advising the EFSA. The three remaining non-food scientific committees were replaced by three new scientific committees on consumer products, health and environmental risks and emerging and newly identified health risks¹⁷. These committees were placed under the responsibility of the Directorate-General for Health and Consumer Protection.

The Directorate-General for Employment and Social Affairs is supported by the scientific committee on Occupational Exposure Limits. This committee prepares expert advice on the exposure limits of potentially toxic substances. After review by the Economic and Social Committee and the European Commission these health-based exposure limits can become part of European legislation.¹⁹

The European Centre for Disease prevention and Control (ECDC) was recently established. Its core mission is to identify, assess and report on current and emerging threats to human health from communicable diseases²⁰. One of the Centre's objectives is to 'provide independent scientific opinions, expert advice, data and information', for the Commission, Member states and other community agencies. It will work closely with relevant key organisations and experts in the Member States, and its Director may set up international scientific panels.

There are various other fields and EU organisations where scientific opinions and advisory reports are prepared. For example, in the domain of health ethics, the European Group on Ethics in Science and New Technologies (EGE) – a multidisciplinary group of 12 independent experts appointed by and reporting to the European Commission – advises the Commission on all ethical questions relat-

ing to sciences and new technologies, either at the request of the Commission or on its own initiative. An important task is preparing opinions on the ethical aspects of biomedical scientific progress. Another, more recently initiated activity addressing bioethics in Europe is the National Ethics Committee (NEC) Forum, which is a collaboration of the national ethics committees in Europe, supported by the Directorate-General for Research. The Forum gives feedback on issues that relate to the Framework Programme, and liaises closely with the EGE.

The World Health Organization (WHO) is also active in the field of science advice, not only globally but also in an European context, addressing issues like infectious diseases, chronic illness, mental health, evidence-based health care and technology assessment (e.g., as covered by the Health Evidence Network – HEN – of WHO Europe), life style problems, inequity and health, toxic substances and electromagnetic fields.

An important development is the increasing collaboration of the national academies of sciences through EASAC, the European Academies' Science Advisory Council. EASAC's aim is 'to support politicians and members of policy-making institutions at EU level in accessing the best available scientific knowledge related to their needs to enable the European institutions to build science into policy'²¹. In the past few years EASAC has initiated and presented reports to the European Parliament on key topics such as infectious diseases and genomics and crop plant science. EASAC also assists the Scientific and Technological Options Assessment Unit of the European Parliament in addressing the scientific aspects of policy issues of concern to the Parliament, for example by reviewing proposals prepared by the Parliament. EASAC's work is firmly based on two essential characteristics of the Academies: input from the key scientific experts in the field, and complete independence from policy-making or executive bodies as regards both the selection and appointment of the experts and the working methods followed. In addition, as the academies are independent of the executive bodies, that often have a short-term focus, they devote considerable attention to long-term threats and perspectives, including related potentials of and challenges for science and the scientific community.

Another relevant European collaborative body is the Federation of the European Academies of Medicine, which focuses in particular on initiating and providing advice to the European Commission regarding public health and health care issues.

Considerations

It has been clearly shown above that science advice on health issues in Europe is a dynamic field, both at the national and the international level. Appraisal of the overall picture reveals a number of issues for discussion that can be raised, some of which have already been mentioned.

Involvement of many experts is required at both national and international level to provide the necessary advice. Issues of *efficiency* and quality then become important. To maximise efficiency, duplication of effort should be avoided as much as possible; the available knowledge, evidence, analyses, reviews and reports should be shared; there should be good communication on activities and working programmes, with the aim of achieving complementarity; and the possibility of setting up collaborative (European) advisory committees should be considered.

In addition, the European *key experts* on the relevant fields of interest should be identified and steps should be taken to ensure that they are available when needed. One possible means of making the most efficient use of this expertise might be to create a register, available for consultation throughout the Community, of top experts who are available for science advice on policy issues. Listing their current involvements (after obtaining the consent of the persons concerned) would add to the utility of such a register. However, the compilation, management and updating of an effective register of this kind would be quite a challenge.

The *independence* of both individual experts and committees is a key issue and concerns a number of points, such as the selection of experts (e.g., is this done by experts or administrators?); ways of dealing with potential conflicts of interest; the advisory work to be performed and the procedures to be followed; and the way advisory reports are published, discussed, and used. The independence of science advice on matters of public health should be considered in the light of possible confrontations with economic, political or commercial interests and pre-occupations. In addition, executive pressure leading e.g. to small budgetary margins or narrowly planned time frames can play a role. Another key aspect of independence is that experts should be able, or even expected, to present unsolicited and when necessary even unwelcome advice to those responsible for policy.

A distinction can be drawn between the giving of science advice on policy issues to the *executive* levels and directly to the *political* level. When vital issues are involved, care must be taken to ensure that the latter route is followed,

enabling the independent voice of the scientific community to reach the most responsible decision-makers.

Proportionality and subsidiarity are important principles with a bearing on science advice. What advice can be prepared at a national level? When should international collaboration be preferred? When is the European level most appropriate? Key criteria are the topic, the type and availability of expertise required, the added value of a shared approach (e.g., efficiency, fast distribution of knowledge and more effective implementation), and the resources available. It should be recognised in this context that the number of important topics any national advisory body has to address is generally much larger than can be dealt with given its resources. International collaboration could provide a way to achieve knowledge-based policy on more topics with the same total budgets for each country concerned.

Focus is important in both science and policy-related problem solving. At the same time, multidisciplinary and overview are also essential. It follows that *fragmentation* of the voice of the scientific community in different domains, at various levels and in different periods will be counterproductive, especially in relation to broad public health topics such as the influence of demographic changes, health system effects, environmental issues and preparedness for outbreaks of disease. The best expertise from a wide range of disciplines needs to be involved to ensure a comprehensive scientific overview on these topics. Broad, stable national and international public health advisory bodies and the academies of sciences can play a key role in providing such expertise.

The need for a combined approach

The leading motivation for science advice on policy issues in the Member States and at the European level is that decision-making should be based on the best scientific knowledge, which should be shared where appropriate.

Given the available opportunities and challenges, and taking the considerations given above into account, it may be concluded that a combined approach to science advice in Europe, based on complementarity, is the best way to ensure maximal quality, efficiency and impact in the coming years. This approach would encompass a network of national bodies and the collaborating academies together with the relevant EU agencies. One question to consider in this context is whether specific additional effort is required to coordinate the various activities, and if so what form this coordination would take.

To facilitate international collaboration between national advisory bodies, the Health Councils of the Netherlands and Belgium have taken the initial steps towards the creation of a *European expertise network for science advice on public health*. Details of this network are given in the next chapter. On short term a meeting with invited bodies for this expertise network will be organized and a limited number of concrete topics for collaboration will be selected.

One important question is what steps can be taken to strengthen the independent voice of the scientific community at the European level, and to position this in relation to the various existing EU advisory bodies. In this context it is important to consider the potentials of the academies' European network. As a useful model, one can think of the Institute of Medicine (IOM) in the USA. This institute was established in 1970 by the National Academy of Sciences, 'to secure the services of eminent members and appropriate professions in the examination of policy matters pertaining to the health of the public'²². It acts under the responsibility given to the National Academy of Sciences to be an advisor to the federal government, both on request and on its own initiative. The IOM has a strong position at the federal level, independent of e.g. the CDC (Centers for Disease Control and Prevention) and the FDA (Food and Drug Administration). In a European context, where prestigious national academies of sciences and other national bodies are already well established, an effectively coordinated network might be preferable to a new large central institution. Moreover, the qualification 'Medicine' would be too narrow for such a network, as public health includes a much broader field.

European expertise network for science advice on public health

The Health Council of the Netherlands and the Health Council of Belgium have contributed to the strengthening of Europe-wide collaboration between national science advisory bodies by taking the first steps towards the establishment of a *European expertise network for science advice on public health* which is aimed at complementing existing structures for science advice on public health in Europe.

In August 2005, the Health Council of the Netherlands invited the organisations reported to be active in the field of science advice on public health* to register on the SINAPSE E-network of the Directorate-General for Research of the European Commission**. This allows the organisations to be vetted regarding their suitability for participation in the *European expertise network for science advice on public health*. In first instance, this network will include institutions with a statutory and more or less permanent character within the Member States of the European Union and countries that are still candidate for inclusion in the EU. These institutions should moreover have a core task in providing science advice

* These organisations were mentioned in a survey carried out in 2004/2005 by the Health Council of the Netherlands.

** The SINAPSE (Scientific InformAtion for Policy Support in Europe) E-network was established to promote the effective exchange of information between all stakeholders in the use of science in European governance²³. Further information can be obtained by visiting <http://europa.eu.int/sinapse/sinapse/index.cfm>

to governmental authorities at national and/or state level in one or more domains of public health.

The network has three specific goals.

- 1 Exchange of scientific expertise
The network promotes the exchange of scientific expertise in the field of public health in Europe among member institutions. This can be achieved by sharing scientific knowledge and advisory reports, inviting experts to sit on transnational committees, or peer review of advisory reports. Participating institutions can then base their national advisory reports on high level scientific expertise and make optimal use of expertise that is already present within other science advisory bodies.
- 2 Complementarity of working programmes
This aim involves harmonising the working programmes of the participating institutions and bringing them into line with developments at European (policy) level.
- 3 Preparation of joint advisory reports
Issues in the field of public health and issues that go beyond the national borders (for example air pollution and its effect on health, or infectious diseases) can be addressed in joint advisory reports in which the expertise of several member institutions is combined. These joint reports can be presented to national governments and to European bodies, thus strengthening the scientific basis of public health policy in Europe.

The SINAPSE E-network, established by the Directorate-General for Research of the European Commission, will be used as communication tool for the expertise network. A subgroup for members of the expertise network will be established within SINAPSE, to permit the exchange of expertise and advisory reports. SINAPSE will also be used to alert members of the expertise network to topics for discussion and early warnings. Other forms of communication, such as meetings and workshops, will also be used. The workshops can focus on specific topics and/or involve specific areas of expertise.

A basic requirement of such an expertise network is that all national reports should be accessible for an international audience. It would seem reasonable to expect the country of origin of a given report to bear the costs of translating the

reports into English before the reports are made available to all interested parties via the SINAPSE website.

The Health Council of the Netherlands and Belgium are prepared to coordinate the *European expertise network for science advice on public health* for the first few years of its life. Sister organizations can take over the task of coordination later, on a rotary basis.

Issues for discussion

Scientists have a good record in crossing borders of both knowledge and geography, and they experience an even wider than European network as a daily reality. As science is international by its very nature, it can not only provide specific knowledge aimed at furthering the public interest and societal progress but can also help to overcome an excessively national focus on issues of general concern. Moreover, since science has an inherently long-term perspective, it can help policy-makers who are often subject to short-term pressures to aim at sustainable targets and to work for future generations.

Answers to the following questions will be helpful in determining the potential and the feasibility of more cooperation on science advice in a European context.

- 1 Would national and European health policies profit from the strengthening of science advice in a European context (considering the main challenges for science advice on public health)?
- 2 Do you have any comments or suggestions about the further development of European cooperation between national science advisory bodies?
- 3 What is your view on the relation between (collaborating) national science advisory bodies and existing scientific advisory bodies on the European level? Do you have suggestions for further development?

All parties invited to the meeting are kindly requested to prepare answers to the above-mentioned questions and to give their views on future steps to be taken.

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A Responsibility

Annex

Responsibility

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