



# WORLD HEALTH ORGANIZATION

**EXECUTIVE BOARD**  
**112th Session**  
**Provisional agenda item 4.2**

**EB112/4**  
**April 2003**

## **Genomics and world health: report of the Advisory Committee on Health Research**

### **Report by the Director-General**

1. The unprecedented advances in the science of genomics, the study of the genome and its actions, have culminated in the announcement of the complete sequence of the human genome. The availability of genome sequences for many living organisms has important implications for health improvement and it has been widely predicted that their elucidation will lead to a revolution in medical research and patient care.
2. Recognizing the potential of genomics for improving health, the Director-General requested the Advisory Committee on Health Research in January 2001 to prepare a report on the likely impact of genomics on world health.
3. The report was written after a wide-ranging consultative process involving scientists, clinicians, ethicists, public and private funders of genomics research, health policy-makers, nongovernmental organizations and civil-society groups concerned with the ethical, legal and social implications of genomics. It was published in April 2002.<sup>1</sup>
4. The report details the latest advances in genome research and explains how the knowledge so created could lead to medical advances against many diseases, including those endemic in poor countries. At the same time, it warns of the potential risks of genomics, including the possibility that recombinant DNA technology will exacerbate global health inequalities, and urges the need to consider the complex ethical issues that this new field may raise in the context of the different religious and cultural values of the individual Member States. Finally, it makes recommendations on how the fruits of this research can be used to improve the health of populations, especially in the developing world.
5. The main points raised in the report include the following:
  - Any benefits that result from genomics research will be unavailable to countries that do not have a functioning health care system.

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<sup>1</sup> *Genomics and world health: report from the Advisory Committee on Health Research*. Geneva, World Health Organization, 2002. Full report accessible at [www.who.int/genomics](http://www.who.int/genomics) Copies of both the full report are available on request and an executive summary will be available in the meeting room.

- Advances in genomics for global health care must be assessed for their relative value in the practice and delivery of health care compared with the costs and efficacy of current approaches to public health, disease control and the provision of basic preventive medicine and medical care.
- Conventional, tried and effective approaches to medical research and medical practice must not be neglected while the medical potential of genomics is being explored.
- An overoptimistic picture of the applications and benefits of genetic research has been drawn. The potential medical applications of genomics are considerable but when they will lead to major advances in clinical practice is difficult to predict.
- Although development costs associated with genomics are likely to be high, some applications, such as control of inherited anaemias and diagnosis of infectious diseases, have already been shown to be cost-effective compared with current practices. Partnerships between developed and developing countries and between public and private sectors, together with regional and local networks, may take the field forward.
- Some medical applications arising from the genome projects already exist. The diagnosis, prevention and, to some extent, management of common inherited diseases caused by a single defective gene are well advanced, and it is likely that, within the next few years, new diagnostic tools, vaccines and therapeutic agents will be available for communicable diseases. Breakthroughs in the diagnosis and management of cancer and new treatments for chronic diseases, however, are unlikely in the short term.
- The time has come to plan fair distribution of recombinant DNA technology and its potential clinical benefits in order to ensure that this new field will not simply widen the gap in health care between the rich and poor countries of the world.
- The current situation regarding the patenting of genes has already gone too far in terms of promulgating a culture of ownership and, if allowed to continue, will inevitably lead to further inequalities in global health care. A coherent policy framework is urgently required to ensure that DNA patenting stimulates scientific and economic progress by strengthening the contribution of the global research community to the creation and application of medical technology for the health problems of developing countries.
- All forms of recombinant DNA technology, including modification of the genes of plants and animals, raise extremely important safety issues and require careful monitoring and control. The potential risks and hazards of this field must never be underestimated. It is vital that effective regulatory systems are established in countries in which this work is either in its early stages or has not yet started.
- All societies must prepare themselves for, and all sectors of society, including politicians, health care professionals, educators and the public, need to be educated about the fundamental principles of genetic research, its inherent risks and the ethical issues that it raises.

6. The report's recommendations are set against a background of current and expected requirements that Member States will need to consider in order to ensure that the advances of the genomics revolution are effectively and efficiently applied to improving the health of their populations.

7. Since its release, the report has received favourable media attention and publicity, national launches have been held in some Member States, and an Ethics and health unit has been established within WHO to deal with ethical, legal and social implications of advances in genomic. Some activities in the genomics field are already part of the Organization's work, but the report urges the formulation of a WHO policy and strategy to help to ensure that benefits and advances are applied to health improvement in developing countries.

## **ACTION BY THE EXECUTIVE BOARD**

8. The Executive Board is invited to consider the following draft resolution:

The Executive Board,

Having considered the report on Genomics and world health,<sup>1</sup>

RECOMMENDS to the Fifty-seventh World Health Assembly the adoption of the following resolution:

The Fifty-seventh World Health Assembly,

Having considered the Report on Genomics and World Health;

Acknowledging the remarkable speed of progress in genomics research and the fact that many Member States are not well prepared for this new approach to medical research and practice;

Deeply concerned that the potential benefits of the genomics revolution may not benefit the health of populations in developing countries;

Aware that genomics raises concerns about safety and has new and complex ethical, legal, social and economic implications;

Conscious of the reality that much of genomics research and development is performed, and owned, by private-sector interests in the developed world, and hence is market-driven;

Reaffirming that advances in genomics must be considered in the context of their relative value in the practice and delivery of health care;

Recognizing the urgent need for targeted national policies on research into, and applications of, genomics in order to ensure that benefits accrue to countries;

Convinced that it is time for governments, the scientific community, civil society, the private sector and the international community to pledge their commitment to ensuring that the advances of genomics are equitably shared by all,

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<sup>1</sup> Document EB112/4.

1. ENDORSES the recommendations contained in *Genomics and world health*,<sup>1</sup>
2. URGES Member States to give high priority to adopting the recommendations and to mobilize all concerned scientific, social, political and economic resources in order:
  - (1) to frame and implement national policies, strategies and mechanisms for assessing relevant technologies, cost-effectiveness, ethical review structures, legal, social and economic implications, regulatory systems, and the need to prepare society by effectively raising public awareness;
  - (2) to strengthen existing, or establish new centres and institutions engaged in genomics and human genetics research, with a view to strengthening national capacity and accelerating application of the advances in genomics research relevant to countries' health problems;
3. CALLS UPON the private sector, the scientific community, civil society, the international community and other relevant stakeholders to engage in dialogue and to find creative and equitable ways of mobilizing more resources for genomics research targeted at the health needs of developing countries, building capacity in such areas as bioethics and bioinformatics, and resolving issues related to intellectual property;
4. REQUESTS the Director-General to facilitate implementation of the recommendations by
  - (1) providing support to Member States for framing national policies and strategies and strengthening capacity so that they can benefit from the advances in genomics research;
  - (2) promoting WHO's role in convening regional and international forums and fostering partnerships among the main stakeholders to mobilize resources, contribute to building capacity, and find innovative solutions to issues related to intellectual property rights associated with advances in genomics research.

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<sup>1</sup> *Genomics and world health: report of the Advisory Committee on Health Research*. Geneva, World Health Organization, 2002.