

# **The 10/90 Report on Health Research 2001-2002**

Health research and global security

Overview of the Global Forum

Governance of health research

Progress in priority-setting

Priorities in health research

Monitoring financial flows

Research capacity strengthening

Networks in priority research areas

This report was prepared by the Secretariat of the Global Forum for Health Research on the basis of the presentations and discussions at Forum 5, held in October 2001 in Geneva, as well as those at Forum 4, held in October 2000 in Bangkok as part of the International Conference on Health Research and Development, and on the basis of the work of the Global Forum and its partners during 2001 and 2002. The Secretariat alone is responsible for the views expressed.

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## Glossary

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**10/90 gap:** less than 10% of global spending on health research is devoted to diseases or conditions that account for 90% of the global disease burden.

**Burden of disease:** an indicator that quantifies the loss of healthy life from disease and injury.

**Combined approach matrix:** a methodology proposed by the Global Forum to help priority setting for health research. The matrix incorporates and summarizes all information obtained through a variety of processes (ENHR, VHIP and the five-step process).

**Cost-effectiveness** (of a health research intervention): analysis of the net gain in health or reduction in disease burden resulting from a health intervention in relation to the cost of the research that permitted the discovery and development of that intervention. Cost-effectiveness analysis helps identify interventions that are likely to produce the greatest improvements in health status for the available resources.

**DALY:** Disability Adjusted Life Year, an indicator developed for the calculation of disease burden which quantifies, in a single indicator, time lost due to premature death with time lived with a disability.

**Five-step process:** a practical framework for priority setting developed by the Ad Hoc Committee on Health Research.

**Forum:** the annual meeting of the Global Forum for Health Research.

**Genome:** the sum total of the genetic material present in a particular organism.

**Genomics:** the study of the genome and its action.

**Global public good:** a public good with benefits that are strongly universal in terms of countries (covering more than one group of countries), people (accruing to several, preferably all, population groups) and generations (extending to both current and future generations without foreclosing development options for future generations).

**Initiatives/networks:** projects that bring together a wide range of partners, both institutionally and geographically, in a concerted effort to find solutions to key health problems of such magnitude that they are beyond the capacity of any single institution to resolve and require the concerted efforts of a coalition of partners.

**Orphan disease:** disease accounting for high burden, for which interventions are limited and not commensurate with the disease burden.

**Priority-setting:** process by which policy-makers rank health problems and research topics by order of priority and hence the allocation of funds.

**Research capacity development:** process by which individuals, organizations, institutions and societies develop abilities (individually and collectively) to perform functions effectively, efficiently and in a sustainable manner to solve problems.

**Resource flows:** total funds invested in health research by public or private sources.

**Risk factor/determinant:** an attribute or exposure that increases the probability of occurrence of disease or other specified outcome.

## Abbreviations and acronyms

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<b>ACHR</b>	.....	Advisory Committee on Health Research
<b>ALRI</b>	.....	acute lower respiratory infections
<b>AOCP</b>	.....	African Onchocerciasis Control Programme
<b>ARROW</b>	...	Asian-Pacific Resource & Research Centre for Women
<b>ASTMH</b>	.....	American Society of Tropical Medicine and Hygiene
<b>C/E</b>	.....	cost-effectiveness
<b>CAH</b>	.....	Child and Adolescent Health, WHO
<b>CDC</b>	.....	Centers for Disease Control and Prevention, USA
<b>CHD</b>	.....	Child Health and Development, WHO
<b>CHNRI</b>	.....	Child Health and Nutrition Research Initiative
<b>CHOICE</b>	...	Choosing Interventions that are Cost-Effective
<b>COHRED</b>	..	Council on Health Research for Development
<b>ComDT</b>	...	community directed treatment
<b>COPD</b>	.....	chronic obstructive pulmonary disease
<b>CRA</b>	.....	comparative risk assessment
<b>CSO</b>	.....	civil society organization
<b>CVD</b>	.....	cardiovascular disease
<b>DANIDA</b>	...	Danish International Development Agency
<b>DFID</b>	.....	Department of International Development, UK
<b>DOTS</b>	.....	directly observed short course strategy
<b>DRC</b>	.....	disease research coordinator
<b>EIP</b>	.....	Evidence and Information for Policy, WHO
<b>ENHR</b>	.....	Essential National Health Research
<b>ENRECA</b>	...	Enhancing Research Capacity in Developing Countries
<b>FCTC</b>	.....	Framework Convention on Tobacco Control
<b>FIC</b>	.....	Fogarty International Center
<b>GBD</b>	.....	global burden of disease
<b>GDP</b>	.....	gross domestic product
<b>GIN</b>	.....	global issues network
<b>GNP</b>	.....	gross national product
<b>GSK</b>	.....	GlaxoSmithKline
<b>HIV/AIDS</b>	...	human immunodeficiency virus/acquired immune deficiency syndrome
<b>HPSR</b>	.....	health policy and systems research
<b>HRP</b>	.....	Special Programme for Research and Research Training in Human Reproduction
<b>IAP</b>	.....	indoor air pollution
<b>IAVI</b>	.....	International AIDS Vaccine Initiative
<b>IBDN</b>	.....	International Burden of Disease Network
<b>IDRC</b>	.....	International Development Research Centre, Canada
<b>IFPMA</b>	.....	International Federation of Pharmaceutical Manufacturers Associations
<b>IGI</b>	.....	inherently global issues
<b>IMCI</b>	.....	Integrated Management of Childhood Illnesses
<b>INCLEN</b>	.....	International Clinical Epidemiology Network
<b>IOM</b>	.....	Institute of Medicine, US Academy of Sciences
<b>IPRs</b>	.....	intellectual property rights

<b>IRENE</b>	Intelligent Research Network
<b>IT</b>	information technology
<b>IWP</b>	interim working party
<b>LBW</b>	low birth weight
<b>LSHTM</b>	London School of Hygiene and Tropical Medicine
<b>MDR-TB</b>	multidrug-resistant TB
<b>mhGAP</b>	Mental Health Global Action Programme
<b>MMV</b>	Medicines for Malaria Venture
<b>MoH</b>	ministry of health
<b>NCD</b>	noncommunicable disease
<b>NGO</b>	nongovernmental organization
<b>NHA</b>	national health accounts
<b>NHD</b>	Nutrition for Health and Development, WHO
<b>NIAID</b>	National Institute of Allergy and Infectious Diseases
<b>NIDI</b>	Netherlands Interdisciplinary Demographic Institute
<b>NIH</b>	National Institutes of Health, USA
<b>NIMR</b>	National Institute of Medical Research, Tanzania
<b>NLM</b>	National Library of Medicine, USA
<b>NORAD</b>	Norwegian Agency for Development Cooperation
<b>OCP</b>	onchocerciasis control programme
<b>ODA</b>	official development assistance
<b>OECD</b>	Organisation for Economic Cooperation and Development
<b>PAHO</b>	Pan American Health Organization
<b>R&amp;D</b>	research and development
<b>RCS</b>	research capacity strengthening
<b>RFP</b>	request for proposals
<b>RICYT</b>	Red Iberoamericana de Ciencia y Tecnologia
<b>RPC</b>	Research Policy and Cooperation, WHO
<b>RTI</b>	road traffic injuries
<b>S&amp;T</b>	science and technology
<b>SAREC</b>	Swedish Agency for Research Cooperation with Developing Countries
<b>SDC</b>	Swiss Agency for Development and Cooperation
<b>SHARED</b>	Scientists for Health and Research for Development
<b>STD</b>	sexually transmitted disease
<b>SVAW</b>	sexual violence against women
<b>TB</b>	tuberculosis
<b>TDR</b>	UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases
<b>UNAIDS</b>	Joint United Nations Programme on HIV/AIDS
<b>UNFPA</b>	United Nations Population Fund
<b>UNGASS</b>	United Nations General Assembly Special Session
<b>USAID</b>	United States Agency for International Development
<b>VAW</b>	violence against women
<b>VHIP</b>	Visual Health Information Profile
<b>WHF</b>	World Heart Federation
<b>WHO</b>	World Health Organization
<b>WTO</b>	World Trade Organization

# Executive Summary

## Background

The Global Forum for Health Research was established in 1998 to help correct the 10/90 gap in health research, the fact that only about 10% of funding is targeted to the diseases which account for 90% of the global disease burden. The human and economic costs of such misallocation of resources are enormous, particularly for the poor. In pursuit of this central objective, the Global Forum has adopted the following strategies:

- support to public and private sector networks/partnerships focusing research efforts on diseases representing the heaviest burden on the world's health;
- support to better priority-setting methodologies;
- the organization of an Annual Forum meeting;
- dissemination of findings; and
- measurement of results.

The *10/90 Report on Health Research 2001-2002* is the third report of the Global Forum for Health Research summarizing the efforts undertaken by a wide variety of actors in helping to correct the 10/90 gap. Some of these efforts were supported by the Global Forum for Health Research, others were not.

**Chapter 1** draws attention to the central role of health and health research for development, the fight against poverty and global security.

**Chapter 2** gives an overview of the objective, strategies and activities of the Global Forum for Health Research since its inception in 1998.

**Chapter 3** explores the rationale for the so-called "health research governance" and

reviews the efforts undertaken over the past few years in this field, particularly since the 2000 Bangkok Conference on Health Research and Development.

**Chapter 4** reviews the progress made in the field of priority-setting methodologies, including the recent applications of the "Combined Approach Matrix".

**Chapter 5** gives an overview of research priority areas.

**Chapter 6** summarizes the most recent information on the public and private resources invested in health research worldwide and recommends activities to be undertaken under a second phase.

**Chapter 7** draws attention to the urgent need for making further progress in the crucial field of research capacity strengthening in low-and middle-income countries.

Finally, **Chapter 8** reviews the results of the efforts to build networks and partnerships in some of the priority areas recommended in Chapter 5.

## Chapter 1: Health research, health, development, poverty and global security

Chapter 1 draws attention to:

- the central importance of health for development
- the central importance of health for the fight against poverty
- the central importance of development and a reduction in poverty for global security, and
- the central importance of health research for health.

At the country level, poor health tends to increase poverty in two ways: (a) indirectly, through its negative impact on growth and development; (b) directly, through the vicious circle of poverty, i.e. malnutrition, disease, unemployment or underemployment, low income, poor housing, low level of education, low productivity, no access to clean drinking water, no access to health care services, larger number of children, unwanted pregnancies, substance abuse. In addition, the poor are more likely to suffer as a result of degradation of the environment and discrimination.

Once trapped in the vicious circle of poverty, the chain of causality is very difficult to break. In order to do so, the following measures have been recommended:

- revisit the functioning of the public and private components of the primary health care system;
- create employment at low cost per job;
- look at poverty and poor health from a gender perspective;
- support and ally with the civil society organizations (CSOs);
- undertake multidisciplinary actions (environment, education, water supply, etc.);

- build social safety nets;
- increase the effectiveness of foreign aid;
- focus on country-level efforts and capacity strengthening, particularly in the sector of health and health research;
- develop partnerships in the promotion of global public goods, particularly in the field of health;
- revisit the global, national and local budget allocations;
- develop the political will and the empowerment of the people.

The role of research is to ensure that the measures proposed above are based as far as possible on evidence, so that the resources available to finance these measures are used in the most effective way in the fight against ill health and poverty. Health research can be made more effective by taking the following measures:

- help correct the 10/90 gap in health research, by reallocating some health research funds from lower- to higher-priority projects, from projects benefiting the few to those benefiting a large proportion of the world's population;
- increase overall funding for health research;
- improve the efficiency of health research funding;
- improve collaboration between the various actors by developing partnerships;
- decrease the isolation of research and increase its impact on people's health.

In conclusion, good health is central for (a) the promotion of development; (b) the fight against poverty; and (c) global security. This is not surprising, as good health (and education) are key to building up the human capital which is necessary for the efficient creation and use of the physical capital of a nation. In turn, health research is central for the efficient and effective promotion of health. But it must be made more effective and brought out of its ivory tower.

## Chapter 2: An overview of the Global Forum for Health Research

Health research is essential to improve the design of health interventions, policies and service delivery. Every year more than US\$70 billion is spent worldwide on health research and development by the public and private sectors. An estimated 10% of this is used for research into 90% of the world's health problems. This is what is called 'the 10/90 gap'.

The Global Forum's central objective is to help correct the 10/90 gap by focusing research efforts on diseases representing the heaviest burden on the world's health and facilitating collaboration between partners in both the public and private sectors. A reallocation of one per cent of research spending would provide US\$700 million for priority research.

The Global Forum believes that solutions to current health challenges will depend on the strength of the partnerships created between governments (policy-makers), multilateral and bilateral development agencies, international foundations, civil society organizations (CSOs), women's organizations, research institutions, private sector companies and the media, which are all partners in the Global Forum.

The strategies of the Global Forum include the following:

- support to public and private sector networks/partnerships focusing research efforts on neglected diseases;
- support to better priority-setting methodologies (including a “combined approach matrix”, measurement of resource flows into health research, cost-effectiveness analysis and burden of disease measurement);

- the organization of an Annual Forum meeting;
- dissemination of findings; and
- measurement of results.

Correcting the 10/90 gap constitutes a major contribution to growth, development and the fight against poverty. Correcting the 10/90 gap is possible, but requires the individual and concerted efforts of thousands of institutions. The Global Forum works as a catalyst to spur such efforts.

## Chapter 3: Governance of health research

Much has been said and written in recent years about “health research governance”. This term may cover different concepts for different persons or institutions, ranging broadly from *formal coordination agreements* between a limited number of institutions to informal *collaborative principles* discussed and gradually agreed upon by a widening circle of institutions at the global, regional and national levels. These arrangements of very different nature are often referred to as *partnerships*. The sum of these partnerships at the global, regional and national levels can be referred to as *the system of health research governance*.

The objective of this chapter is to:

- explore the rationale for the so-called “health research governance”;
- review the main recommendations made over the past ten years in this field (by the 1990 Report of the Commission on Health Research for Development, the 1996 Report of the Ad Hoc Committee on Health Research, the 1997 Advisory Committee on Health Research, and, in particular, the

2000 International Conference on Health Research for Development in Bangkok);

- review the efforts since the Bangkok Conference.

Section 1 concludes that the need for health research partnerships and governance is real for a number of reasons: first, the magnitude of the problems to be solved is such that they are beyond the capacity of any single institution to resolve and require the concerted efforts of a coalition of partners; second, provided they are well managed, the benefit-cost ratio of joint undertakings may be very high; third, partnerships can help ensure an interdisciplinary approach to a problem; finally, partnerships can play a significant role in helping to correct the general under-investment in global public goods, as partners identify the benefits accruing to them as a group.

Sections 2 and 3 review the recommendations made since 1990 in the field of “health research governance”.

Section 4 reviews the efforts undertaken since the 2000 Bangkok Conference in this sector, in particular at the country level (for example with the creation of the Tanzania National Health Research Forum or the ENHR efforts undertaken by COHRED), at the regional level (with the planned African Health Research Forum, the planned Asian and Pacific Health Research Forum and the preparatory meetings held in Latin America and the Caribbean), and at the global level (preparation of the planned 2004 World Health Research Summit). These partnerships and forums can be considered as the building blocks of the overall health research governance system, as each partnership can make a contribution to the better allocation of the resources invested in health research.

Finally, Section 5 draws some preliminary conclusions on the future of health research

governance. The overall health research governance should ideally be the result of a bottom-up approach starting at the national level and relayed by the regional efforts. With the thousands of sovereign and autonomous institutions involved, the efforts could focus on a set of collaborative principles which could contribute much to the allocation of health research funds to the priority public health needs.

## Chapter 4: Progress in priority-setting methodologies

Priority setting is as critical as conducting the research itself. Yet there is no simple way to set priorities. Failure to establish a process for this has contributed much to a situation in which only about 10% of health research funds from public and private sources are devoted to 90% of the world's health problems.

This chapter reviews progress in the development and implementation of priority-setting methodologies developed since the 1990 Commission on Health Research for Development. Three important changes have been observed in health research management since the work of the Commission: (i) there is a better understanding that health research can play a crucial role in policy decisions; (ii) there is a better recognition of the need for a sound scientific basis for selecting the topics to be researched; and (iii) the lack of methodologies to select and recommend research priorities have stimulated the pace of development of these tools and processes in recent years.

In an attempt to differentiate between the process of priority selection and the tools used for that purpose, the chapter reviews progress in both approaches.

*Process:* Priority setting must include a multidisciplinary and participatory process. Progress in the Essential National Health Research (ENHR) process conducted by countries supported by COHRED is reviewed, at both country and regional levels. At the country level, progress has been achieved in a number of countries by ensuring broad participation in the identification of research priorities. Similarly, regional networks have been strengthened to contribute to this process.

*Tools:* Progress has also been made on priority-setting methodologies and tools. The strength of the five-step approach (which is part of the Global Forum Combined Approach Matrix for priority-setting) lies in its ability to relate research on burden of disease with determinants, cost-effectiveness and financial flows. Problems with these methods and potential ways to solve them are reviewed.

The chapter also describes practical experiences in the use of the Combined Approach Matrix applied in the priority-setting exercise conducted by the TDR Programme in WHO. The tool was used and modified to be part of an exercise for priority setting in that programme. The chapter provides instructions on how to make use of the tool. In addition, it describes for the first time the application of the Combined Approach Matrix to identify research priorities for one of the important determinants of disease burden (indoor air pollution).

## Chapter 5: Priorities in health research

Section 1 of this chapter revisits the concept of the 10/90 gap and concludes that the direct transferability of findings from high- to low- and middle-income countries is limited due to the following factors:

- Communicable diseases not prevalent in the high-income countries continue to account for a large share of disease burden in lower income countries.
- Vaccines developed for industrialized country markets may not be effective against the different types of viruses and bacteria prevalent in poorer countries.
- Determinants of ill health can vary greatly between regions.
- Performance of health systems and services vary greatly between countries.
- Access to treatment and medicines is very different between and within countries.
- Interventions for noncommunicable diseases available in more advanced countries may not be directly adaptable, appropriate or cost-effective in lower income countries due to costs and infrastructure requirements.

Therefore, the 10/90 gap in health research remains a reality and prioritization in health research funding at the global and national levels an absolute necessity if we want the limited health research funds to have the greatest impact possible on the level of world health.

Section 2 underlines that priorities in health research have traditionally been formulated in terms of diseases and conditions. It is now realized that this is only one dimension of health research and that health determinants themselves have to be prioritized and are competing for the same funding as disease-focused priorities. But, to make things more difficult, there are at least two more dimensions to health research which have to be prioritized against the others, i.e. methodologies for priority-setting and cross-cutting issues in health research, such as policies, poverty and health, gender and health, and research capacity strengthening.

It is therefore proposed that the prioritization exercise in health research take into account

all four dimensions mentioned above, i.e.:

1. Research on diseases and conditions
2. Research on proximate determinants and risk factors
3. Research on priority-setting methodologies
4. Research on policies and cross-cutting issues affecting health and health research.

Section 3 reviews key recommendations made in the past 12 years regarding research priorities on diseases and conditions and concludes that there has been very broad consensus in these recommendations around the following conditions with the highest levels of morbidity and mortality but very low levels of investment: acute respiratory infections, diarrhoeal diseases, cardiovascular diseases, mental health, tuberculosis, tropical diseases, perinatal conditions and HIV/AIDS. Of the 1233 drugs that reached the global market between 1975 and 1997, only 13 were for tropical infectious diseases that primarily affect the poor in low- and middle-income countries. Given this consensus, the focus should now be shifted to the identification of priorities *within each of these diseases*. This is discussed in Chapter 8.

Section 4 reviews key recommendations made in the past 12 years for research priorities on determinants and risk factors. It concludes that broad consensus also exists around priorities in determinants. For details on priorities *within some of these determinants*, see Chapter 8.

Dimension 3 (research on priority-setting methodologies) is reviewed in Chapters 4 and 6.

Finally, dimension 4 (research on policies and cross-cutting issues) is discussed in Chapter 1 (poverty, gender), Chapter 7 (research capacity strengthening) and Chapter 8 (research on policies and systems, public-private partnerships, genomics and health).

## Chapter 6: Monitoring financial flows

Tracking financial flows into health research is key to identifying the degree of funding for priority research and for the analysis of the 10/90 gap. Yet, the information on health research financing is very fragmented.

The Commission on Health Research for Development drew attention to the importance of health research as the “essential link to equity in development” and recommended that governments in low- and middle-income countries review their current spending on health research and strive to meet recommended goals (2% of national health expenditures and 5% of foreign aid in the health sector). Since most low- and middle-income countries were not actively tracking the pattern of spending on health research, it was difficult to know how close they were to the target and what trends were occurring over time. One major obstacle was the lack of tested methodologies for monitoring spending on health research at the country level.

Beginning in 1999, the Global Forum for Health Research supported efforts to develop and implement a system for tracking and reporting investments in health research. This chapter aims to provide a summary of the first results of this project and the progress with the methods developed.

The study did not attempt to do a comprehensive review of all high-, middle- and low-income countries' investments in health research. The total figure for worldwide investments into health research was estimated to be about US\$73.5 billion for 1998 from both the public and the private sectors combined, as compared to an estimated US\$56 billion in 1992 (in current terms). Governments in high-income

countries, countries in transition, and low- and middle-income countries invested at least US\$37 billion (50%), and the pharmaceutical industry US\$30.5 billion (42%). Private, non-profit and university funds provided the remaining US\$6 billion (8%). It is estimated that about one-third of the increase between 1992 and 1998 is in real terms. While none of the low- and middle-income countries studied matched the 2% figure recommended by the Commission for Health Research and Development, Brazil and Cuba were quite close to that level of investment in 1998.

This study proposes a classification method based on the Frascati family of manuals which can be used to incorporate information from low- and middle-income countries, countries in transition and high-income countries. The classification suggested here distinguishes between the following five categories:

- (a) non-oriented, fundamental research;
- (b) research into health conditions, diseases or injuries (classified by disease);
- (c) research into exposures, risk factors that impact on health (determinants);
- (d) health systems research;
- (e) research capacity building.

The chapter describes obstacles encountered in data collection and gaps identified. It also reviews the usefulness of various data sources for the measurement of resource flows for future exercises. Activities for a second phase of resource flows measurement incorporating a large number of institutions are recommended.

During the late 1990s and early 2000s, there has been greater involvement of national research institutions, foundations, CSOs and the pharmaceutical industry in international health. This translated into an increase in investments in health research globally. The implications of this transition to improve the

health of the majority of the world's population, a global public good, are not clear and have yet to be documented.

## Chapter 7: Progress in research capacity strengthening

Health research is increasingly recognized as one of the driving forces behind development. Over the past two decades, there has been considerable investment in research capacity strengthening (RCS) in lower-income countries. However, this has not been matched by efforts to evaluate the outcome and impact of this investment in RCS. This kind of evaluation is critical for identifying best practices, highlighting constraints, justifying further investment in this area and providing guidelines for future development. This chapter focuses on the need for evaluation of the outcome and impact of RCS, starting with a review of the factors critical to success in RCS and the major challenges identified, and continuing with a review of work done during 2000-2001. Most evaluations so far have focused on measuring inputs, process and some outcomes of RCS in a number of lower-income countries. Critical issues which RCS evaluation needs to address include:

- the extent to which policy-makers commission research to provide evidence for decision-making
- use of national scientists by policy-makers for research to meet national needs
- the extent to which research findings are used for disease control in the country
- the extent to which research results are translated into policy
- the evolution of the national budget for research capacity development
- impact of research capacity strengthening on the country's health situation.

The chapter ends by calling for more studies in these critical areas, particularly of the impact of RCS on health research and its role in correcting the 10/90 gap.

## Chapter 8: Some networks in the priority research areas

The chapter reviews some of the priority areas recommended in Chapter 5, describing the size of the problem and the results of efforts to build networks which focus on these priority areas (including their objectives, partners, governance, strategies and activities).

Since it would be impossible to review all research efforts currently under way, this chapter describes the efforts undertaken by international networks in only some of the priority research areas. Some of these efforts were supported by the Global Forum for Health Research, others were not. They are categorized into the following four groups:

### A. Networks focusing on diseases and conditions

- Section 1. Global Alliance for TB Drug Development
- Section 2. HIV/AIDS
- Section 3. Initiative for Cardiovascular Health Research in Developing Countries
- Section 4. Multilateral Initiative on Malaria
- Section 5. Medicines for Malaria Venture
- Section 6. Mental Health and Neurological Disorders

### B. Networks focusing on determinants (risk factors)

- Section 7. Reproductive Health
- Section 8. Road Traffic Injuries
- Section 9. Child Health and Nutrition Research Initiative
- Section 10. Initiative on Sexual Violence Against Women

### C. Networks focusing on priority-setting methodologies (see Chapters 4 and 6)

### D. Networks focusing on policies and cross-cutting issues affecting health research

- Section 11. Alliance for Health Policy and Systems Research
- Section 12. Genomics and Health Research
- Section 13. Initiative on Public-Private Partnerships for Health.



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