

**Report from the  
Ministerial Summit on Health Research**

**Identify challenges, inform actions, correct inequities**

**Mexico City, 16-20 November 2004**

**Co-organized and co-sponsored by  
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## Table of Contents

Executive Summary .....	i
Chapter 1 Taking a comprehensive, problem solving approach to health research .....	1
Why focus on health systems? .....	1
The lead up to Mexico .....	3
Key themes emerge at Summit opening .....	3
Funders address how to meet the challenges of global health .....	5
A “tale of two Sheratons” .....	6
Chapter 2 Research to improve health systems .....	7
The “grand challenges” facing health systems.....	7
Priority research areas.....	9
The crisis in human resources for health .....	10
Sustainable financing for health systems .....	11
Information systems, a basic building block.....	13
Chapter 3 Towards the better management of health research.....	15
The importance of local research and knowledge .....	15
The importance of good leadership .....	16
Reconciling intellectual property rights and affordable access.....	17
Gender and equity dynamics in health research .....	17
Producing ethical, reliable, relevant, and accessible research.....	18
Chapter 4 Making the results of research count .....	21
Health ministers identify challenges and opportunities .....	21
From action comes knowledge and change .....	22
Creating demand for research .....	24
Making programmes more effective.....	26
Collaboration throughout the research process .....	27
Chapter 5 A call to action.....	29
Food for thought .....	29
The Mexico Statement .....	29
Summit Postscript.....	35
Appendix .....	37



## Executive Summary

A landmark event took place in Mexico City in November 2004. For the first time, health ministers from around the world came together to talk about health research. More specifically, they came to the Ministerial Summit on Health Research to discuss how research could help strengthen national health systems and achieve the Millennium Development Goals (MDGs). Topics included how to address critical shortages in human resources for health, increase and sustain financing for health systems, promote public access to information, improve the way health research is conducted, increase the uptake of the results of research, and ensure effective interventions reach those in need.

The ministers, their representatives, and other participants collectively called for a radical rethinking of the global health research enterprise. The following four imperatives emerged from the Summit:

- more investment is needed in research on health systems;
- better management of health research is required;
- increased efforts must be made to secure public confidence in science; and
- more emphasis should be put on turning knowledge into action to improve health.

Participants reviewed the progress made since the International Conference on Health Research for Development in 2000 in Bangkok, Thailand. They identified new challenges and debated the principles and content of a new research agenda. Their efforts culminated in the Mexico Statement, an unprecedented consensus between policy-makers, researchers, funders, NGOs, and civil society groups on how to refocus health research to improve public health.

Key messages from the Summit included:

1. Health systems must be strengthened so that the world's poor have access to interventions and services that can improve their health and well being.
2. The link between development, health, and knowledge has been clearly established. Intersectoral research is needed to examine factors outside the health sector that have a significant impact on health.
3. The knowledge that is lacking in allowing faster progress towards the MDGs and other health goals can be derived from learning how health systems work and why they do not. Significantly more funding is required for research that is focused on health systems and how to make them stronger.
4. All countries, including the least developed, need the capacity to conduct health research, to implement and evaluate policies and programmes, and to communicate and use what is learnt.
5. New kinds of partnerships and broader collaborations are needed to advance the health systems research agenda and to accelerate the research and development of new vaccines, drugs, and diagnostics that address the major diseases of the poor and related MDG challenges.

6. Political will and good leadership are required to strengthen domestic scientific capacity and infrastructure, and to ensure that health research is embraced in shaping policies for planning, funding, and coordinating health systems.
7. The demand side of research can be strengthened by fostering structured interactions between researchers and policy-makers, using knowledge “brokers” or “intermediaries” to facilitate the process, and involving the potential users of research in setting research priorities.
8. The dissemination of research results must extend beyond publication in peer-reviewed journals. Effective communication of the results of research is necessary so that policy-makers, health-care providers, the general public, and funders can make better use of scientific evidence.
9. Evaluation must become an integral component of health policies and programmes; research must be embedded in the implementation of interventions and in health systems themselves.
10. Public access to information as well as far greater transparency and accountability are required to build public trust in science and in the global health research enterprise.

# Chapter 1 Taking a comprehensive, problem solving approach to health research

## Why focus on health systems?

The World Health Organization, together with the Government of Mexico, convened the first Ministerial Summit on Health Research to address the vital role of research in strengthening health systems. The primary objective was to gain support and funding for the research that is needed to improve the health of the world's most marginalized people and to tackle obstacles preventing countries from achieving the health-related Millennium Development Goals (MDGs). Given that it is already possible to prevent at least half of the premature deaths in developing countries, the emphasis of the Summit was on how to translate that knowledge into action to improve public health.

For evidence of the failure of health systems one need look no further than a child who survived the recent Asian tsunami only to die a few weeks later of tetanus, or the fact that every day, far away from the media's spotlight and the world's attention, equally senseless tragedies claim the lives of tens of thousands of children, women, and men. If cheap, effective, and easy-to-administer interventions that were brought to market a long time ago are not already universally available, what chance is there that any new, expensive, and complicated-to-deliver treatment for a disease like AIDS, cancer, tuberculosis, or type II diabetes will ever reach those in need? Clearly, it is more than time for a radical change. To borrow the words of Gita Sen, the Sir Ratan Tata Chair Professor at the Indian Institute of Management in Bangalore, India, it is time for "the voices in the wilderness" to become "the winds of change."

Few would disagree with the statement that when a health system isn't working, the health of a population suffers. The strength of a nation's health system is a determining factor in a country's ability to improve its people's health, alleviate

*"Research is a basic component of strengthening health systems and achieving the MDGs."*

*–Vicente Fox*

*"Health policy cannot be left to the margin of relations between countries."*

*–Vicente Fox*

*"Health is not an expenditure that comes after you achieve an economic goal, but an investment and a condition to achieve economic growth."*

*–Julio Frenk*

*"Health research is a topic where the self-interest of each country coincides with the common interest of all nations."*

*–Julio Frenk*

*"Research focused on health systems can identify the magnitude of the challenges, inform actions, and correct injustices."*

*–Tim Evans*

*"The MDGs require a new vision for health research."*

*–Elias Zerhouni*

*"Research can not be done in one place for the rest of the world—every research activity is fundamentally a local activity."*

*–Elias Zerhouni*

*"We must not believe that one size fits all."*

*–Mark Walport*

*"Health research starts with identifying priority needs in the community and ends with health gains for the community."*

*–Mark Walport*

*"Without research it is impossible to find real solutions to the health care needs of populations."*

*–Alan Bernstein*

*"Everything we fund must be publicly available."*

*–Alan Bernstein*

*"One of the most important goals of research is to ensure universal access to health care regardless of ability to pay."*

*–Octavi Quintana*

*"Research is about partnerships."*

*–Octavi Quintana*

### Box 1.1 Health research for development

Commission on Health Research for Development (1990)

Action agenda:

- Essential national health research in every country
- International partnerships
- Capacity building
- More financial resources for health research
- Mechanisms to monitor progress and generate support

Ad Hoc Committee on Health Research Relating to Future Intervention Options (1996)

“Best buys”—R&D priorities on major health challenges:

- Child and maternal health
- Microbial threats
- Noncommunicable diseases and injuries
- Health care systems

International Conference on Health Research for Development, Bangkok (2000)

Key challenges for health research:

- Adherence to values of ethics, equity, and excellence
- Sustainable health research systems
- Favourable research environment
- Knowledge production and application

Ministerial Summit on Health Research, Mexico (2004)

Key messages:

- More investments in health systems research
- Better management of health research
- Secure public confidence in science
- Stronger emphasis on turning knowledge into actions to improve people’s health

poverty, meet the MDGs, accelerate development, reduce inequities, conduct health research, track emerging diseases like SARS and avian influenza, and respond in times of war and civil unrest and in the aftermath of natural disasters.

Ministers of Health—especially those in low- and middle-income countries—are keenly aware of the complex and fragile nature of the systems they are charged with managing. They are all too familiar with the many barriers and challenges that have to be overcome to keep them functioning, and the kind of knowledge that is needed to build sustainable health systems.

Describing the challenges in his country, Nigeria’s Health Minister Eytayo Lambo said: The primary health-care system has collapsed and coverage rates of routine immunizations are low; a minimum package of essential health services has been defined but not implemented; the country is far behind on the MDG targets; and 90% to 97% of the budget goes to salaries, leaving no money for services and supplies.

“I find myself floating in the air,” Lambo said, lamenting the absence of evidence to make policy decisions. “I am desperately hungry for knowledge to allow me to make certain decisions—and I don’t have a whole year to wait.” In the area of financing alone he said there is:

- no information on total health spending;
- no data on efficiency, equity, and sustainability of current health expenditures;
- no tools to track external funding for various disease-specific programmes;
- no information on optimal health financing methods;
- no information on the best systems for national health insurance;
- no information on household health expenditures and health-seeking behaviours; and
- no way of determining hospital efficiency.

Unfortunately, Nigeria’s predicament is not unique, which may explain why the call to meet in Mexico was met with such an enthusiastic response. Fifty-two countries

sent official delegations to the Summit, including 21 Ministers of Health and three deputy ministers (see Appendix for details). The four-day event gave the ministers and other country representatives ample opportunity to interact with a diverse group of key stakeholders responsible for producing, reproducing, financing, translating, and utilizing scientific knowledge. Policy-makers, researchers, NGOs, funders, industry, providers, advocates, and the media were all represented.

### ***The lead up to Mexico***

The Summit was part of a process that began in 1990 in Stockholm with the publication of the landmark report of the Commission on Health Research for Development. This was followed in 1996 by a report from WHO's Ad Hoc Committee on Health Research Relating to Future Intervention Options. The International Conference on Health Research for Development took place in Bangkok in 2000. There it was agreed that a similar meeting would be held every four years, a decision that led to the Ministerial Summit on Health Research in Mexico in 2004. Box 1.1 highlights the key messages from each of these four events. The second ministerial summit will be in Africa in 2008. As in Mexico and Bangkok, the world's leading health experts will assemble to review progress, take stock of significant changes in global health, and examine options for moving the global health research endeavour towards addressing unmet needs and new challenges.

The lengthy preparations for the Summit in Mexico began shortly after Bangkok. To ensure the consultation process was as broad as possible, meetings with researchers, policy-makers, NGOs, donors, and civil society groups were held in all WHO regions. In addition, three task forces were formed: one to determine health system research priorities, another to focus on equity issues, and a third to tackle how to promote knowledge access and sharing. In the months leading up to the Summit, a number of related research papers were published in medical journals, notably in *The Lancet* and the *Bulletin of the World Health Organization*. Most significantly, a week before the Summit, the WHO launched the *World Report on Knowledge for Better Health*. Foreshadowing the Summit's main message, the report argues that strengthening health systems in low- and middle-income countries should be at the top of the global health priority list.

As a result of all these efforts, an impressive amount of supportive background information was provided to delegates. All the reports that fed into the Summit can be accessed at [www.who.int/rpc/summit](http://www.who.int/rpc/summit).

### ***Key themes emerge at Summit opening***

The speeches made at the joint inaugural session of the Ministerial Summit of Health Research and the parallel meeting of the Global Forum for Health Research helped to focus the discussions that followed in the days ahead.

**Box 1.2 Mexico: evidence guides health policy**

“The Mexican health reform is a clear example of the possibility of harmonizing two core values of research: scientific excellence and relevance to decision-making,” said Mexico’s Minister of Health Julio Frenk in his opening address. “Indeed, the formulation of the reform started with a high-quality research process that allowed us to quantify the challenges confronted by our health system, especially the lack of financial protection.”

About 40% of Mexico’s population—the self-employed and the unemployed, as well as to those who work in the informal sector—do not have their health expenses covered by the social security system and have to pay for health services out of their own pockets.

“The analysis revealed an unacceptable paradox: we know that health is one of the most effective ways of fighting poverty, but medical care can itself become an impoverishing factor for families when we do not have the social mechanisms to assure fair financing that protects the entire population. The evidence gathered from this research guided a legislative change aimed at correcting this paradox by establishing what we have called Popular Health Insurance, which is the basis for achieving fair financing of universal access to high-quality services. Research will continue to be a central element during the implementation and evaluation phases,” Frenk said.

“The evidence that supported this reform was gathered through the comparative review of several national reform initiatives and the use of instruments that were designed as global public goods. Salient among these are the National Health Accounts methodology and the WHO framework for the assessment of health system performance. Thus, the Mexican health reform shows that knowledge, as a global public good, can be brought to the centre of a domestic policy agenda in order to address a local problem. Such application, in turn, feeds back into the global pool of experience, thus generating a process of shared learning among countries.”

President of Mexico Vicente Fox spoke of equity and evidence-informed policy-making. “Equity is at the centre of all our public policies,” he said. “Health is a social asset which must be within reach of everyone, not just the privileged few, and so we must ensure quality and financial protection.” Improving equity in health is the primary goal of Mexico’s ongoing health system reform. President Fox stressed his conviction that “strengthening health research systems is the way to strengthen health systems themselves,” adding that there is an “urgent need for policy-makers to recognize the importance of research.” He held up Mexico as an example for other countries to follow: Mexico has achieved the target of spending 2% of its national health budget on research and capacity building. Evidence will continue to guide Mexico’s efforts to reform its health system (see Box 1.2).

Mexico’s Minister of Health Julio Frenk addressed the importance of health for development, the central role of knowledge in the improvement of health, and the gaps that need to be bridged. “Health is not only the result of economic growth, it is also one of its main determinants,” he said. “Scientific knowledge represents the driving force of health progress...Knowledge leads

to new and better technologies, such as drugs, vaccines, and diagnostic methods. The main challenge is to close the 10/90 gap, which means that only 10% of global research resources are devoted to those problems that affect 90% of the world’s population. Scientific knowledge is assimilated by people to structure their daily relationship with their environment, thus promoting healthy lifestyles—the challenge is to increase access to it, particularly by the poorest. The power derived from knowledge also allows them to become informed users of services and citizens conscious of their rights.” Knowledge may be used for decision-making both in the delivery of health services and in the formulation of public policies, Frenk added. The challenge is to translate evidence into action and “to allow the power of ideas to guide the ideas of power.”

“Because of the gaps in our current knowledge, every reform initiative should be seen as an experiment, the effects of which must be documented for the benefit of every other initiative, both present and future. This requires a solid investment in research in

health systems. Each innovation constitutes a learning opportunity. Not to take advantage of it condemns us to rediscover at great cost what is already known or to repeat past mistakes. To reform it is necessary to inform, or else one is likely to deform,” Frenk said.

WHO Assistant Director General Tim Evans (who spoke on behalf of WHO Director General Lee Jong-wook) acknowledged the past and future role of medical science in preventing and controlling disease, but focused on the unsolved problems, accumulating dangers, and new challenges. “Why is the world so vulnerable to health problems that science is supposed to be able to solve?” he asked. Two of the reasons: weak health systems and the failure to base policy on existing knowledge.

“Research now needs to turn its attention to the financing, workforce, and information systems on which health depends. Where problems are defined and understood we can work consistently towards solving them. Reliable information produced by excellent research exists, but it is not sufficiently used to shape decision-making. Ignoring research evidence is harmful to patients and wastes resources. More openness and better access to research findings are also urgently needed if decision-makers are to obtain the guidance they need. New research can contribute directly to building strong health systems, and the research findings we already have can be far better used. A substantial increase in investment is urgently needed in these two areas. I urge governments and the supporters of research to make this provision, which will yield a very high return in benefits for health.”

### ***Funders address how to meet the challenges of global health***

The joint opening plenary session featured the heads of some of the world’s largest funding agencies—Elias Zerhouni, Director of the National Institutes of Health; Mark Walport, Director of the Wellcome Trust; Alan Bernstein, President of the Canadian Institutes of Health Research; and Octavi Quintana Trias, the European Commission’s Director of Health Research. In presenting their views on how to best meet the challenges of global health, the speakers identified a number of interlocking principles that should guide health research.

First, different types of health research should be viewed as synergistic, not mutually exclusive. Improving global health requires research on biomedicine, health systems, public health, gender, economics, and social sciences. Divisive discussions between basic biomedical and applied health systems research, for example, are counter-productive. So too is the division between analysis and advocacy: good evidence is a powerful advocacy tool and advocacy can raise powerful support and funds for research.

Second, many different types of partnerships and collaborations are needed at the global, regional, and national levels—public–private, intersectoral, north–south, south–south etc. This applies not only to partnerships among researchers within and between countries but also to collaborations among researchers and policy-makers, funders, health-care providers, NGOs, and civil society. Effective knowledge translation requires a “team effort” where the producers and users of research jointly define the health research agenda.

Third, the speakers emphasized the importance of building capacity in less-developed countries. Research capacity is needed to generate knowledge, adopt knowledge generated elsewhere, adapt it to local conditions, and feed back what is learned into the global pool of knowledge. Another common call was for easy and direct access to information—for global health research to be put in the public domain where it will be more open, transparent, and accountable. All four speakers voiced their support for WHO’s proposed international clinical trials register platform.

Finally, they noted that the ethical conduct of research is central to gaining and sustaining public trust in science. Protecting the rights of individuals who participate in medical research is paramount, but many other aspects of health research, policy, and practice also require serious ethical reflection. All efforts to build research infrastructure in less-developed countries must be accompanied by appropriate capacity building in ethics.

### ***A “tale of two Sheratons”***

Lincoln Chen, Director of the Global Equity Center, Kennedy School of Government at Harvard University, dubbed the Summit a “tale of two Sheratons” because each day the delegates at the Summit, which was held at the Sheraton Maria Isabel, were bussed to the Sheraton Centro Historico to attend the daily plenary sessions. (The plenary sessions were jointly held with the Forum 8 meeting of the Global Forum for Health Research.) The daily bus ride was just one of the opportunities for one-to-one discussions and interactions, helping to broaden ideas and develop networking. Six ministerial roundtables gave health ministers or their representatives the chance to discuss topics related to research on health systems. Daily networking lunches provided an opportunity for informal exchanges. Twenty-four working sessions, which were focused on more specific topics, were organized around six themes: 1) access and sharing of knowledge; 2) innovation, product and method development, and evaluation; 3) civil society, gender, and ethics; 4) social, environmental, and economic determinants; 5) health systems research and research to policy/practice links; and 6) the organization and funding of health research. While all this was going on, the Mexico Statement was being revised to reflect inputs received from the official delegations and other participants (see chapter 5).

Rather than summarize each presentation, this report organizes highlights from the Summit into four areas: chapter 2 deals with health systems research and chapter 3 with better management of health research; chapter 4 covers issues related to improving the use of research; and chapter 5 is devoted to closing remarks and the Mexico Statement. A postscript notes developments since the Summit closed.

## Chapter 2 Research to improve health systems

### *The “grand challenges” facing health systems*

The Grand Challenges in Global Health initiative, which is funded by the Bill & Melinda Gates Foundation and managed by the Foundation for the National Institutes of Health, aims to direct more biomedical research towards the health problems that disproportionately affect the two billion poorest people on earth. The initiative, which was announced in January 2003, has singled out 14 critical scientific and technological problems that, if solved, could lead to important advances against diseases of the developing world. During his opening remarks at the first plenary session, WHO Assistant Director General Tim Evans said a similar approach was needed for health systems research.

He identified three "grand challenges" that must be tackled in order to improve the performance of health systems. The first is making sure that safe, proven, and cheap interventions reach those in need. The fact that about two thirds of current child deaths could be prevented with existing, low-cost health interventions and that in 2001 only 2-15% of African children were sleeping under mosquito bednets highlights the extent of the problem.

The second challenge involves improving the distribution of health services. Those with unmet needs are disproportionately those with lesser means. From Bolivia to Egypt, from Indonesia to Zimbabwe, women in the lowest income quintile are far less likely to give birth with the help of a skilled attendant. Even in poor areas within countries, relative wealth differentials matter. Again and again, the least poor have better access to health services than the poorest. Because equity is often sacrificed for efficiency when prioritizing health care and because the MDGs do not specifically target the poor, steps must be taken to ensure that striving to achieve the MDG targets does not widen the equity gap.

The third grand challenge involves protection and safety because far too many people are worse off after encounters with the health system. This applies not only to the quality of care they receive but also to the cost of receiving that care. Each year

*“It is difficult to strengthen what you do not understand.”*  
–Lola Dare

*“Health systems research, to put it simply, is how we organize ourselves for knowledge-based social health action.”*  
–Lincoln Chen

*“We need more information about how to integrate what we are spending in a way that will have the most public benefit.”*  
–Julio Frenk

*“We need to unravel the health systems genome.”*  
–Tim Evans

*“A lot of holes have to be plugged before we can accept that research will help achieve the MDGs. We have plenty of problems but very few solutions.”*  
–Ashok Jugnauth

*“Peace is a pre-condition for good health. Unless we have peace in the world, the MDGs will be hard to achieve.”*  
–Muhammad Nasir Khan

*“Sometimes we chase numbers, and equity and quality of health care get ignored.”*  
–Manto Tshabalala-Msimang

*“The only route to reaching the health MDGs is through the worker; there are no short-cuts.”*  
–from the Joint Learning Initiative report

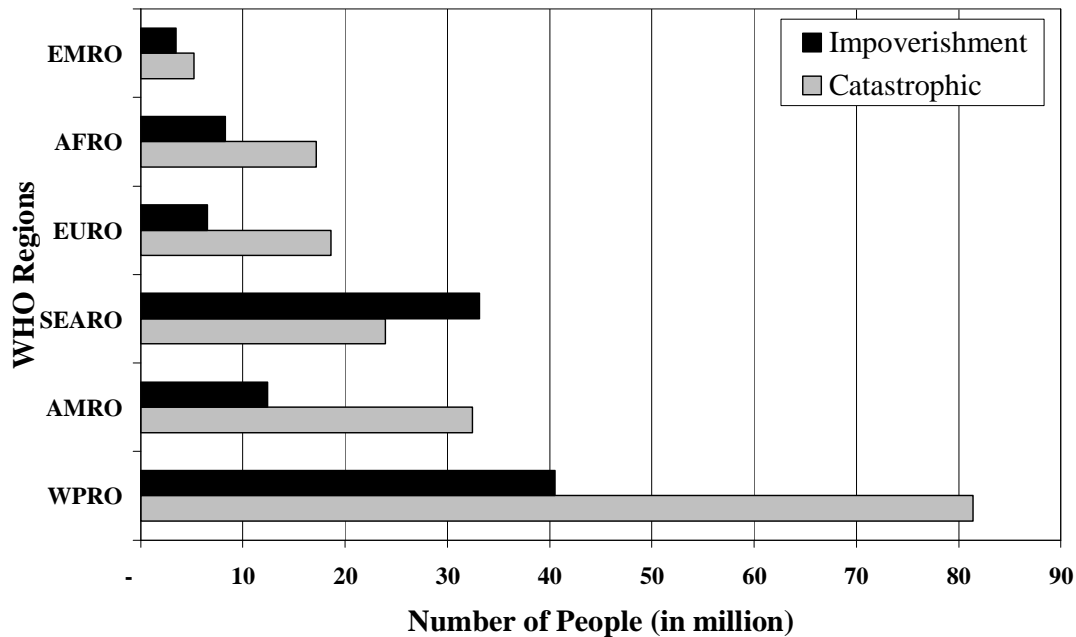
*“Disease is not the fault of people. A system that imposes burdens on the sickest and poorest is unethical.”*  
–Julio Frenk

*“If you want to fund without knowing the way, you’ll flounder.”*  
–Francisco Songane

*“It is essential for countries in the south to have access to ICT to compensate for lack of information.”*  
–Celine Seignon Kandissounon

around the world, the act of seeking care pushes at least 100 million people into poverty (see Figure 2.1). For millions of others already living below the poverty line, seeking care pushes them even further into poverty.

**Figure 2.1 Number of People Suffering Financial Catastrophe and Impoverishment Due to Health Spending**



In order to address these performance shortfalls and improve health systems, research needs to focus on the critical functions that underpin a health system, such as human resources, financing, information systems, commodities, and services. “These and other subsystems are not a given in any health system,” said Evans. “They require contextual specificity as well as understanding of their global interconnectedness.”

For example, health information is the “glue that holds health systems together, and yet in most countries in Africa, we still don’t even have a system for counting the dead.” Among the 46 nations in the WHO African region, for example, just four countries provide “reasonable” estimates and only one has a complete death count. With more investment, innovative approaches, better management, and a focus on tackling the gap between knowledge and action, health systems research can produce the required tools and knowledge to build an effective health system and improve people’s health. One example—a project in rural Tanzania that has reversed the trend in child mortality using system-wide interventions—was presented by Don de Savigny, Senior Visiting Scientist at the Swiss Tropical Institute, during a working session (see Box 2.1).

## Priority research areas

In the lead up to the Mexico Summit, the WHO convened a group of experts to analyse how research can create the new knowledge necessary to improve health systems and thus improve the prospects for attaining the MDGs. The Chair of the Task Force on Health Systems Research, Andy Haines, led the first ministerial roundtable, which sought the ministers' input into the question: Can research help to achieve the MDGs?

The Task Force has identified 12 broad topic areas as priorities for primary research and systematic reviews (see Box 2.2). These topics address health system barriers to the attainment of the MDGs but they also have a wider relevance to many other health problems, including the management of chronic conditions like cardiovascular disease, diabetes, and cancer. Haines, who is the Director of the London School of Hygiene and Tropical Medicine, stressed the need for local solutions, collaboration, and international cooperation. He also said that to have an impact, these priority research areas need to be grounded and linked to the MDGs and other initiatives dealing with specific diseases or health concerns.

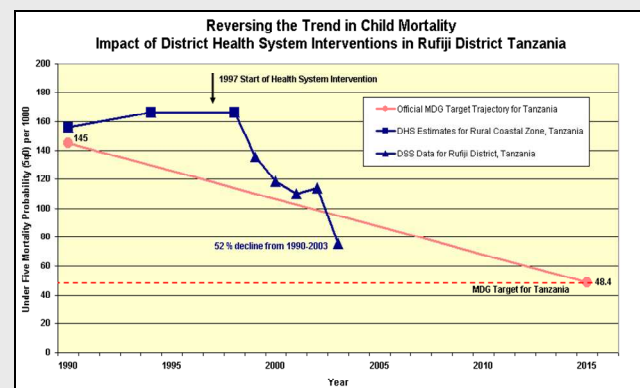
One of the most recent examples of influential research on health systems is the evaluation of the WHO's Integrated Management of Childhood Illness (IMCI) programme. Preliminary findings from Bangladesh, for example, have demonstrated improved quality of care and better health outcomes after IMCI was implemented (see Box 2.3). Similarly rigorous evaluations of other programmes, initiatives, and interventions are an urgent priority, Haines said.

Summit participants agreed that governments should allocate adequate funds to support health systems research in order to address priority questions. But many stressed that it was not sufficient. Some ministers spoke about the significant causes of ill health that neither ministers of health nor health researchers can easily influence, including poverty, war, civil unrest, and the abuse of human and civil rights.

Of the 12 priority areas identified by the Task Force, financing, human resources, and information technology were discussed in considerable detail throughout the course of the Summit. The following three sections present some of the highlights.

### Box 2.1 Tanzania: System-wide interventions for more effective health systems

The Tanzania Essential Health Intervention Project (TEHIP)—a partnership between Tanzania's Ministry of Health and Canada's International Development Research Centre—was set up in 1997 in two of the country's 123 districts. As part of a nationwide reform of the health system, TEHIP's mission was to develop new tools to allocate resources according to health priorities, provide communications and supervisory support, and improve health services. These tools have since been used to significantly reduce the burden of disease. The figure below, for example, illustrates the decline in child mortality. Data gathered during regular evaluations of the project played an influential role in the Tanzanian government's recent decision to scale up and implement TEHIP's tools and interventions in all districts.



## ***The crisis in human resources for health***

It should go without saying that strong health systems are impossible without an adequate number of health workers. Indeed, research has demonstrated a clear link between worker density and mortality—maternal, infant, and under-five mortality

rates all drop dramatically as the ratio of health workers per 1,000 population rises. But even though health personnel development is an essential component of health systems development and personnel accounts for the highest percentage of recurrent expenditure in a health system, very little research has been done in this area. To take a step towards closing this huge gap in health research, one of the six ministerial roundtables was devoted to the human resources for health.

The session, which was chaired by Lincoln Chen, provided an ideal opportunity to present the findings of the Joint Learning Initiative. Participants were given the Executive Summary of “Human Resources for Health—Overcoming the crisis,” which was not made public until a week after the Summit. The report estimates that

an additional one million health workers are needed in sub-Saharan Africa to provide a basic package of health-care services and meet the MDGs—that is nearly triple the current number of workers. The report cites three major forces contributing to the crisis: HIV/AIDS, labour migration from developing to developed countries, and decades of “chronic under-investment in human resources.”

In one of the working sessions, David Sanders of the University of the Western Cape in South Africa presented some detailed numbers further highlighting the extent of the problems of health worker distribution and the “brain drain” between and within countries. For example, between 1985 and 1995, 60% of Ghana’s medical graduates left the country; during the 1990s Zimbabwe lost 840 of 1,200 medical graduates; in 1999, 78% of doctors in South Africa’s rural areas were non-South Africans; and in 2000/2001, some 1,086 South African nurses were registered in the UK.

Sanders said effective management of human resources requires the development and strengthening of information systems, an understanding of the factors affecting staff retention and training, and excellence in leadership. Research is needed to:

- Develop, monitor, and evaluate evidence-based human resource interventions, which should be informed by needs assessments and situation analyses.

### **Box 2.2 Task Force on Health Systems Research: priority research topics**

#### *Financial and human resources*

- Community-based financing and national health insurance
- Human resources for health at the district level
- Human resources for health at the national level

#### *Organization and delivery of health services*

- Community involvement
- Equitable, effective, and efficient health care
- Approaches to the organization of health services
- Drug and diagnostic policies

#### *Governance, stewardship, and knowledge management*

- Governance and accountability
- Health information systems
- Priority setting and evidence-informed policy-making
- Effective approaches for intersectoral engagement in health

#### *Global influences*

- Effects of global initiatives and policies (including trade, donors, international agencies) on health systems

- Understand and measure the factors influencing the movement of health professionals between and within countries (including GATS and the expanding private sector in health services).
- Determine how best to improve the working conditions of doctors and nurses in medium- and low-income countries so that they stay at home.
- Inform the debate about how to develop an effective workforce to deliver health services, as well as how to organize and finance education and training.
- Provide reliable estimates of workforce requirements for appropriate health-care delivery—not just doctors and nurses but also community health workers, midwives, clinical nurse practitioners, and medical assistants, as well as managers and public health workers with skills in policy-making, advocacy, planning, programme design, implementation, monitoring, and evaluation.

The ministers at the roundtable, all too aware of the urgency to find effective solutions, backed a recommendation for a meeting devoted entirely to research issues related to human resources for health.

### *Sustainable financing for health systems*

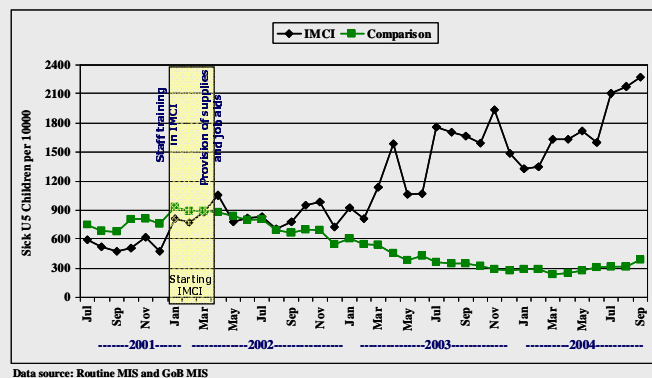
One of the ministerial roundtables addressed how research can help improve the financing of health systems. No one disputed the fact that current funding is grossly inadequate to strengthen health systems and improve people's health. In a video presentation, the Honourable Paul Boateng, the UK's Chief Secretary to the Treasury, said that if the current pace of funding remains unchanged, the health-related MDGs would not be met until 2155. Expressing support for the proposed International Finance Facility, he said an additional US\$50 billion and a global strategy were needed to meet the MDGs by 2015.

The flip side of the coin is that out-of-pocket spending accounts for a significant percentage of total health spending in many less-developed countries (see Figure 2.2). Moreover, the percent of out-of-pocket spending is often highest in countries that do not offer adequate risk protection to the poor.

#### **Box 2.3 Evaluation shows IMCI can deliver**

Results of the first evaluation of WHO's Integrated Management of Childhood Illness (IMCI) strategy, which has been implemented in Bangladesh, Tanzania, Uganda, Peru, and Brazil, illustrate what health system research can achieve. When implemented effectively, IMCI contributes to the achievement of the MDG on child survival. IMCI's goal is to remove the main barriers to improving child mortality—low utilization of health facilities, inadequate quality of care in first-level facilities, and poor compliance with referral for very sick children. In Bangladesh, for example, an evaluation of IMCI has revealed that dramatic improvements were achieved in a matter of months (*Lancet* 2004; 364: 1595). In 2003, the proportion of very sick children who were managed correctly at first level health facilities rose from 15% in January-March, to 39% in April-June, and to 81% from July-September. The figure below shows the increase in health facility utilization in areas where IMCI was implemented.

**Health facility utilization increases in IMCI areas**

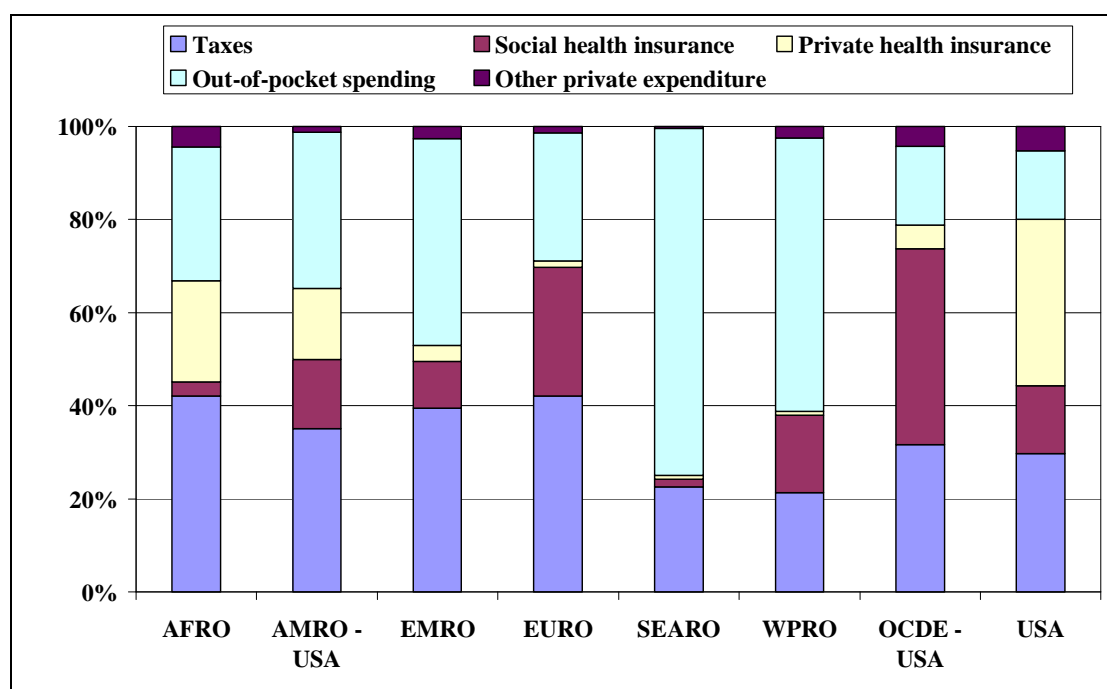


At the moment there is no rhyme or reason to the financing of health systems in many developing countries. Most governments do not allocate an adequate portion of government spending to their health systems and donor funds are erratic, disorganized, and opaque. There was general agreement among the health ministers that it was necessary to redefine what “sustainable financing” means in low-income countries. Working out an appropriate balance of external and domestic funds for financing health systems is an important first step. What percentage of funds for a health system can reasonable and realistically be expected to come from domestic sources? To encourage greater transparency, countries should develop their own financing mechanisms to deal with funds from external sources.

**Figure 2.2 Composition of health spending - 2001**

Data estimated using average annual exchange rate

Source: *NHA Unit, EIP/FER/RER, World Health Organization*



The key policy questions that emerged from the roundtable were:

- What are the possibilities for increasing and sustaining domestic flows of money to health?
- What is the impact of external flows and how can these be increased and sustained in a predictable manner?
- What is the source of money injected in the health financing mechanism, including out-of-pocket spending by income quintiles?
- What is the evidence on catastrophic payments and impoverishment, and what are the options to extend and sustain financial risk protection?
- How can the efficiency and equity of current expenditures be measured and improved?

Manuel Dayrit, the Secretary of Health from the Philippines, summed up what all health ministers want to know: “Where is the money coming from? How is the money being spent? How can it be better spent?”

### ***Information systems, a basic building block***

The absence of basic health data throughout much of the developing world is a major problem. At the same time as health systems lack essential information, they are “drowning in data.” Even though there is exponential growth in the volume of health information, the information needs of health-care decision-makers are not being served. The solution to this “information paradox” lies in developing integrated information systems that go beyond the measurement of basic health statistics and capture key health system parameters, best practices, and other information needed by policy-makers, funders, managers, providers, and the general public.

The general consensus at the ministerial roundtable devoted to “e-health” (a term for the effective use of electronic information and communication technology in health) was that it is an essential tool for strengthening health system performance. e-health can improve access to information, train health workers and keep their skills and knowledge updated, improve human resource management and patient care, allow for the use of electronic health records and telemedicine, and improve monitoring and reporting in a number of areas from disease outbreaks to drug supplies.

The roundtable focused on the health research issues identified by health ministers and the prospects of bringing e-health to bear positively on these issues. Merceline Dahl-Regis, Chief Medical Officer, Ministry of Health, Bahamas, presented the results of a survey undertaken by WHO prior to the Summit. Eight out of 13 respondents indicated that their countries had an e-health strategy and three others anticipated having one within the next two years.

Developing and implementing national strategies will be a challenge for many developing countries, and will require the technical and material support of WHO. Countries should pursue a comprehensive national e-strategy covering commerce, government, education, and, of course, health. There are opportunities for technology leapfrogging, for example, through the use of mobile telephone technology.

The Health Metrics Network, a new global collaboration aimed at enhancing the availability and quality of health data at the country and global level, was the topic of another roundtable. Both health research and health information systems generate questions on how to improve health and provide feedback on the effectiveness of interventions. But research is often poorly integrated into health information systems and health information systems often fail to generate the kind of data that researchers need.

The following are some of the highlights from the roundtable:

- Information overload is a critical issue—the challenge is not to simply produce more data but to generate better quality data, to improve data analysis, and to promote data use.

- Too much of the information currently available is of interest primarily to academic and research communities. More effort needs to be directed towards data and analyses that address the health information needs of policy-makers, programme managers, front-line health workers, and communities.
- It is important to embed evaluation into programmes and projects and health information systems should more explicitly seek to do this. Evaluation is of vital interest to decision-makers at all levels.
- Generating good data costs money.
- A sound legal framework is needed to ensure adherence to norms, standards, and timelines.
- It is important to address sub-national health information needs and ensure the involvement of communities in data generation and use.

## Chapter 3 Towards the better management of health research

*The previous chapter summarized the roundtable discussions and presentations that specifically related to challenges facing health systems. This chapter covers the broader issues related to improving the management of health research. Topics like funding for health research, capacity building, leadership, intellectual property rights, equity, access to information, and systematic reviews were discussed in several plenary and working sessions.*

### ***The importance of local research and knowledge***

Several speakers noted that even though global health research and development spending passed the US\$100 billion mark in 2004, there is still a massive gap in funding for health research that is relevant to least-developed countries.

Most low- and middle-income countries do not allocate adequate funds to health research. In 1990, the Commission on Health Research for Development recommended that at least 2% of national health expenditures should be invested in research and capacity building. But this target has only been met by four countries in the developing world—Brazil, Cuba, India, and Mexico.

How can other countries be encouraged to follow suit? One way is to lead by example and use evidence to show the benefits that arise from a modest investment in health research. As noted in a working session on scientific and technological innovation, researchers in Cuba have developed a large number of health products that are being used in the Cuban health system and also being marketed in other countries. What's more, infant mortality rates and life expectancy in Cuba are similar to high-income countries even though its per capita GDP is closer to that of low-income countries.

Donors are also falling short of the mark. The Commission on Health Research for Development recommends investing at least 5% of external donor funds for health into research and capacity building. But the reality is that very few donors fund research per se. The majority of donor development funds that are allocated to health go to vertical programmes. Research funding is by and large limited to specific projects and individual studies. Investment from external donors in long-term capacity building is rare. With the roll out of billion-dollar funds to fight HIV/AIDS, tuberculosis, malaria, and other causes of ill

*“Countries need to develop their own solutions to their own problems.”*

*–Andy Haines*

*“Internationally-funded vertical programmes tend to worry only about their own targets, not the long-term needs of aid-recipient nations.”*

*–John Frank*

*“Weke rangi mpya kwenye gari, Abdallah, Kuna mabadaliko. Repaint the land-rover, Abdallah. EPI is toast; ART is here.”*

*–John Frank*

*“Knowledge is the handmaiden of money.”*

*–Gita Sen*

*“Gender gets mainstreamed out of existence; it's everywhere but it's nowhere.”*

*–Gita Sen*

*“We need less research, better research, and research done for the right reasons.”*

*–Iain Chalmers*

*“Biased under-reporting of research is unethical and should be outlawed.”*

*–Iain Chalmers*

*“Increasing the visibility of evidence can contribute to a broader culture of evidence and accountability.”*

*–Sally Stansfield*

health well underway, it is crucial to ensure that some money is directed towards research and capacity building in least-developed countries.

Although not all countries can afford highly sophisticated research facilities, Summit participants agreed that all countries—including the least developed—need some national capacity for analysis and research. During a working session hosted by various funding agencies, Berit Olsson, Assistant Director General of SIDA in Sweden explained why: “Without this essential research capacity, countries are vulnerable. They cannot even produce or monitor poverty reduction strategies needed to access external assistance and cannot engage and negotiate with external actors...The capacity to interact with—and say ‘no’ to—external actors is critical.”

Much more support is needed for research “in and by” developing countries, and not just “on and for” developing country problems, she added—a common theme repeated throughout the Summit. “The value of research is not only in developing products and outcomes; the process itself is important. Research, analytic capacity, openness to inquiry, and exposure of failure or imperfect policy choices are vital contributors to strengthening the general culture of accountability, openness, and democracy,” Olsson said. “In order to have good applied research, you need a foundation—you need core capacity in basic disciplines such as statistics, epidemiology, and social sciences. This entails long-term institutional support.”

### ***The importance of good leadership***

Effective leadership at all levels is an essential element in managing health research. Two areas of leadership within ministries of health were discussed in a working session on the political value of a systems approach to health research. If encouraged and facilitated, ministries of health can provide leadership to convene the spectrum of stakeholders and sectors involved in the production and implementation of research findings that address health concerns. Ministries of health can also leverage policies and strategies to support and retain researchers—particularly those embedded within the health system—provided they work in partnership with other ministries, sectors, and institutions (and often foreign institutions as well).

Panellists and participants agreed that sharing experiences across countries is valuable and that good leadership requires several components, including:

- having a vision for health research;
- understanding the organization of national health research;
- knowing the major health challenges;
- setting and coordinating health research priorities;
- working with other partners;
- developing and enforcing ethical standards for health research;
- increasing accountability in the use of public funds;
- knowing how research is distributed and accessed; and
- monitoring and evaluating health research.

Leadership also featured prominently in a working session on new technologies from public–private partnerships to achieve the MDGs. Ministers of health and other leaders in the developing world can play a decisive role in accelerating the research and development process and in speeding up access to new health technologies (vaccines, drugs and diagnostics) that address the major diseases of the poor and the related MDG challenges. Recent experiences in Kenya, Uganda, Thailand, India, and elsewhere show that national leadership is critical in shaping policies for planning and coordinating clinical trials, informing and mobilizing communities in trial areas, strengthening domestic scientific capacity and infrastructure, and developing “roadmaps” for the swift adoption and uptake of new technologies.

### ***Reconciling intellectual property rights and affordable access***

Over the past few years a number of high-level international meetings have been held to try to resolve the issue of patents and access to essential medicines. In one working session at the Summit, members of the Commission on Intellectual Property, Innovation, and Health gave an account of its work to date and sought feedback from participants. Issues identified by the Commission included: how to reconcile incentives for innovation with affordable access; the costs of R&D and how to reduce them; other factors affecting innovation including regulation, liability, and the neglect of some groups (eg, children); and the importance of the patent system for innovation and potential problems in its application.

In the discussion, not everyone agreed that patents were a powerful incentive for innovation, suggesting that other models may be more effective. Most agreed that patents were not an important incentive for diseases mainly affecting least-developed countries. The issues arising from the introduction of product protection in India in 2005, as regards incentives and future access to medicines in India and elsewhere, are important for the Commission to consider.

Consideration also needs to be given by the Commission to non-biomedical research, including health systems research and other means to produce desirable health outcomes. Because the current system is not working adequately for diseases mainly affecting developing countries, the Commission should consider new institutional and financing arrangements in this area. A key problem is that public funders tend to finance basic research, but not “translational research” to produce useable products. This implies the need to consider the funding priorities of public sector funders, alongside improved incentives in the private sector.

Part of the management of the health research process is identifying priority questions and commissioning appropriate research. As the next two sections pointedly demonstrate, there is room for considerable improvement in both areas.

### ***Gender and equity dynamics in health research***

In her plenary session talk, Gita Sen explored why research on health equity has been neglected. For example, it has been known for a long time that socioeconomic determinants play a critical role in determining health outcomes and yet little research

has been done in this area. What's more, discussions tend to focus on poverty and ignore other determinants—such as caste, race, and gender—that “shape how people live and influence their chance to be healthy,” she said. “Research gets done as if these things don't matter. More attention needs to be paid to the multiplicative impact of these effects—they are not simply additive.”

Profit is part of the reason but since not all health research is profit oriented, part of the responsibility also lies with institutions. With no profit potential, the absence of institutional support is the “kiss of death” for gender, equity, and health research, she said. For example, without a catalyst in the institution, the results of gender research do not stand a chance of getting picked up and translated into policy. And because the women who do this research do not belong to the networks that dominate health research, they are often unable to find support. “How and in which ways are we going to ensure that the roots of influence are opened up to the young female researchers working in this area?” she asked.

Sen also spoke about power—the “all pervasive” other side of the equity coin. “Power shapes the dynamics of health research, policy, and solutions”, and it uses many "masks" and "disguises" to do so. Power and money go hand in hand, and there are power dynamics in the relationships between the researchers and the researched. It appears in the translation of research into policy and explains why some issues get sidestepped in the process. For example, to understand why sexual abuse, domestic violence, and unsafe abortions have not reached the policy level it is important to look closely at power relationships. Sen concluded by calling for a “cultural revolution” at the institutional level to buffer against the influence of power.

These messages were followed-up in a working session focused on the WHO Task Force Report “Priorities for research to take forward the equity policy agenda.” The Report states that “unfair inequalities in health arise at a number of levels, in the economic, social, and environmental determinants of health, in the policies that influence the distribution of these determinants, and in the political and economic interests that shape these policies.” It goes on to state that “any research process that seeks to explain and understand the sources and drivers of this inequality would need to take account of these determinants, and the policies, interests, and imperatives that influence them. More importantly, a research process driven by values of equity, and goals of justice, would need to generate knowledge that confronts these trends and promotes public, population health interests in a way that preferentially benefits the most disadvantaged in society.”

### ***Producing ethical, reliable, relevant, and accessible research***

Sharing knowledge and public access to research information are essential components of managing the research process. There was broad support at the Summit for initiatives like HINARI (Health InterNetwork Access to Research Initiative), which are providing health institutions in least-developed countries free or very low-priced access to the full text to thousands of international journals via the Internet. In addition, speakers and delegates alike endorsed the establishment of an international public register of clinical trials.

There was also widespread recognition of the pivotal role of systematic reviews—which are designed to review reliable and relevant research and to minimize biases—in the research process. Reviewers establish clear objectives and selection criteria, search for and assess all eligible studies, analyse results, and prepare a “transparent” report, allowing readers to judge when the review is likely to be trustworthy. In his plenary session talk “Ignoring information from research evidence is harmful to patients and wastes resources,” Iain Chalmers presented a compelling case for why new research should begin and end with a systematic review.

“Good intentions are not enough to protect patients from unintended harm,” said Chalmers, who is Editor of the James Lind Library in the UK. In the 1950s, for example, Benjamin Spock believed it was best for babies to sleep on their stomachs, advice that was based on no scientific evidence and led to tragic consequences for thousands of parents who believed the paediatrician and author of a best selling book knew best. To avoid such tragedies, systematic reviews should inform health-care decisions, policy-making, and clinical practice.

Moreover, “biased under-reporting of research is ethically and scientifically unacceptable, and it should be outlawed,” Chalmers said. “Information about ongoing research should be registered prospectively and publicly.” Referring to the “mountain of trivial research” that has no impact on improving outcomes for patients, he said systematic reviews would result in “less research, better research, and research done for the right reasons. The current research agenda does not serve the interests of patients and the public efficiently because of perverse commercial and academic influences on the research agenda and insufficient interest in evaluation among health policy-makers.”

“Research must consider the needs of the end-user,” he said. “People reading research reports want researchers to provide answers to four questions: Why did you start? What did you do? What answer did you get? What does it mean anyway?”

In his concluding remarks, Chalmers suggested five action points that, if followed, would save lives and resources:

- Encourage admission of uncertainty about the effects of health practices and policies.
- Increase the capacity for systematic reviews of research evidence.
- Outlaw the biased under-reporting of health research and require public registration of all clinical trials.
- Promote research relevant to people planning, working in, and using health services.
- Refuse to support new research unless systematic reviews of existing evidence show that it is ethical and likely to be worthwhile.



## Chapter 4 Making the results of research count

*Reliable information produced by excellent research exists, but it is not being sufficiently used to shape decision-making. Getting the results of health research, biomedical or otherwise, into policy and practice requires specific knowledge and skills. One of the main objectives of the Mexico Summit was to garner meaningful support for this message. To that end, how to promote and support evidence-informed decision-making among policy-makers, funders, health professionals, and the general public was the subject of one ministerial roundtable, a few plenary session talks, and several working session debates.*

### **Health ministers identify challenges and opportunities**

Delegates who attended the ministerial roundtable “Making informed policy decisions: challenges and opportunities” were first briefed on a meeting of senior government officials in Kuala Lumpur in September 2004, which was organized by WHO to gather input into the Mexico Summit. Officials there concluded that the global community needs to improve the availability, communication, and use of the best available evidence for health policy at global, national, and regional levels and to initiate a global fund to support these activities. They also concluded that acquiring and using evidence to strengthen health systems should have equal priority with acquiring and using evidence to address priority diseases.

Health ministers and heads of country delegations were then asked to respond to two questions related to informed policy-making and international collaboration. The following points highlight some of their responses.

What is the single biggest challenge you face in making well-informed policy decisions?

- Addressing the multisectoral influences on health.
- Involving stakeholders in decision-making about health systems and health policies and in turn making information available to stakeholders and the general public.
- Accessing timely, relevant, up-to-date, and reliable information that is locally

*“There is a unity between research and health care—the two are separated only by time.”*

*—Harvey Fineberg*

*“Beyond piloting innovations, true success comes with standardization, amplification, and replication.”*

*—Harvey Fineberg*

*“When I have sick kids, you give me surveys—when a minister is sick, you hire a plane. I don’t want surveys; I want policies that promote local ownership. Research must be disseminated and used.”*

*—Manto Tshabalala-Msimang*

*“Researchers: adopt a manager or policy maker today! Managers and policymakers: adopt a researcher today.”*

*—Jonathon Lomas*

*“Politicians and policy makers don’t see the light, they feel the heat.”*

*—Christina Zarowsky*

*“We often have a better sense of what is not working than what is working. The collection, documentation and dissemination of evidence of good practice through research should be a key priority.”*

*—David Sanders*

*“Most health research is still not done in a way that explicitly considers and increases its chances of ever being used—by anyone.”*

*—John Frank*

*“There are opportunities to use research to transform both policies and politics—we need to use our research results much more creatively.”*

*—Sally Stansfield*

*“Empowerment of communities enables people to build their lives, as agents of change and not simply objects of charity.”*

*—Pascoal Mocumbi*

applicable, user-friendly, and written in languages that are widely spoken—especially information about which health systems and public health interventions work.

What is the single most promising opportunity for international collaboration in supporting you in addressing the challenge?

- Establishing or building upon an existing global repository of user-friendly information (especially systematic reviews of the full range of relevant health systems interventions), and ideally one that segments information by applicability to different country contexts.
- Establishing local processes to collect and analyse data as well as to adapt global information so it is locally applicable and so it can be presented to busy policy-makers. (Brief summaries should include cost estimates and suggests indicators that can be used to monitor progress.)
- Creating a government-wide policy to promote the use of evidence in policy development.
- Undertaking broader political initiatives (like the G20) to address the political issues involved in the development and implementation of multisectoral policies.

Health ministers and heads of country delegations agreed that national governments should establish sustainable programmes to support evidence-based health delivery systems and evidence-based health policies but stressed the importance of clarifying that it applies to public health interventions and not just clinical and institutional interventions.

### ***From action comes knowledge and change***

In his plenary presentation “Research, communication, and action—making results count,” Harvey Fineberg, President of the Institute of Medicine in the US focused on transparency—“the prompt and complete reporting of the results be they positive or negative,” capacity building in developing countries, and communicating global health issues to the public. But he started out by saying more recognition and more funding needs to be given to those who disseminate, implement, and evaluate health programmes and interventions.

There are only two kinds of research, Fineberg said: the discovery of new things and the search for better ways to do what is already known could work. The latter is relatively under-invested compared with the former. “Learning how to improve delivery and how to enhance services is a research challenge. More support and recognition is needed for those who are disseminating results and bringing programmes to scale. It is not a unidirectional knowledge-to-action pathway,” he said. “Action can also lead to knowledge—there is much to learn from the valuable experience gained in the application of research results.”

Referred to as “action learning,” “participatory action,” “learning by doing” and so forth, the important role of research throughout the process of implementing and evaluating reforms, interventions, and programmes was a recurring theme at the Summit. In their respective plenary session talks, Ana Langer, the Population Council’s Regional Director for Latin America and the Caribbean, and Eva Harris, President of Sustainable Science Institute in the US, showed how such an approach to research was reducing maternal mortality in Mexico and facilitating the transfer of technology to scientists in Latin American countries.

In a working session, David Sanders said a participative action research approach could be used to train health workers and develop case management protocols. “Given the necessary training and support, hospital staff, even in the most under-resourced areas, have the ability to identify and begin to rectify poor practices,” he said. “If conceptualized carefully and if owned by policy-makers and implementers, research can inform decision-making and implementation of interventions.”

Another working session arrived at the following conclusion: To help improve health systems and health outcomes, new research methods that both engage and are carried out by local health communities must be established alongside traditional approaches to scientific discovery (see Box 4.1 for details).

The idea here is that researchers should not view policy-makers, health workers, and citizens as passive recipients of the results of their work but rather as active participants throughout the research process, from deciding the research questions right

#### **Box 4.1 Learning communities in primary care**

A working session reviewed four on-the-ground initiatives demonstrating different approaches to supporting locally-driven learning communities in the developing world:

- The Implementing Best Practices Initiative is an international knowledge-sharing community working to close the knowledge-to-practice gap in reproductive health by creating communities of practice.
- AMPATH (Academic Model for the Prevention and Treatment of HIV/AIDS) has improved patient care in Mosoriot, Kenya by establishing an electronic medical record system and clinical learning network.
- Partners in Health is using a secure web-based electronic medical record system to improve the quality of care across networks of clinics in Haiti and Peru.
- The Institute for Healthcare Improvement is using local learning systems, electronic communication, and “plan-do-study-act” cycles in places like Peru, Russia, and Rwanda to improve data collection and hasten the diffusion of innovations and the scale up of treatment programmes.

Key messages from the working session included the following:

- Sound measures and processes to ensure the quality of information (quantitative and qualitative) captured must be established and adopted by communities.
- Tools and processes must remain flexible to account for varying needs of communities, but must share and adhere to common standards for codifying and exchanging information.
- Regular meetings should be held to review outcomes, celebrate successes, and coordinate response to less desirable trends.
- Decision-support tools can both improve the efficiency of community work and catch potential errors before they can do harm.
- Combining evidence from rigorous and structured research with effective practices from local learning and improvement results in what can be referred to as “pragmatic science”.
- Sustainability is a critical concern for such approaches, and every effort should be made to decrease dependence on non-local resources (including financial resources and human capacity).
- Such concrete projects offer great hope for alternative solutions, however their true benefits can only be seen through broader implementation.
- The international funding community must designate more resources to amplify such initiatives.

#### **Box 4.2 Ondo State, Nigeria: a learning and action strategy for strengthening health systems**

In one of the joint plenary sessions, Lola Dare, Executive Secretary of the African Council for Sustainable Health Development (ACOSHED), presented a case study of health system reform in Ondo State, Nigeria. The opportunity for reform came in April 2003 with the election of a new party. Among the new administration's first tasks was to improve the performance of the health sector. ACOSHED-Nigeria, which was contracted to help, started by generating evidence to support the need for reform. Extensive consultations, policy dialogues, forums, rollout workshops, and presentations to the People's Parliament helped to ensure this evidence was widely and effectively communicated.

The evidence spoke for itself. Quality of care was abysmal. For example, only 20% of malaria cases were being treated properly. From 2001 to 2002, child and maternal health indicators had worsened (where there were data to compare). Funding was grossly inadequate. Health as a percentage of the state budget had declined from a high of 6% in 2001 to 2.5% in 2003 (compared with WHO's recommendation of 15%)—a per capita health budget of \$2.20. Drugs, services, and equipment suffered in the cutbacks with infrastructure eating up almost 70% of the capital expenditure budget compared with 34% in 2002. As for recurrent expenditure, 94% went to salaries leaving virtually no funds for training, services, supplies, and administration.

Moreover, the health workforce was unmotivated. When they were asked what would improve their performance, 62% said more drugs, supplies, and equipment. Dare repeated a quote from a Nigerian nurse: "I come to work at eight o'clock in the morning and there are no drugs to give. I leave at 10 to sell vegetables in the market."

ACOSHED singled out investing in human resources as the key to meeting Ondo State's health sector goals. There would be no improvement in health status without more skilled health workers. Equitable access to good quality and affordable care requires equitable distribution of health workers; and quality of care depends on well-trained staff in addition to the availability of equipment and supplies.

The reform is now underway and results to date have been encouraging, Dare said. Health as a percentage of the total state budget increased to 5.5% in 2004, and to 8.9% in 2005, which translates to a per capita \$5.20 and \$10, respectively. Other positive signs are an increase in health facility utilization, the visible engagement of stakeholders (including communities and the private sector), and increased commitment by development partners.

In closing, Dare offered the following advice:

- Health systems are critical—understand and strengthen them.
- Good practices and lessons abound—share the lessons learned and scale up.
- Civil society organizations can play a role—work with them.
- Regional institutions and networks are essential—build capacity and strengthen institutions.

through the development, implementation, monitoring, and evaluation of policies and programmes. The other four boxes in this chapter were selected from the case studies presented during the Summit that demonstrate the benefits that result from adopting such a collaborative approach to improving the performance of health systems (see Boxes 4.2, 4.3, 4.4, and 4.5). These examples show the central role of evidence in policy development and implementation, the key role of civil society organizations as brokers of evidence for action and change, the importance of collaboration and community involvement, and the pivotal role of evaluation.

#### ***Creating demand for research***

In his plenary session talk "It takes two to tango," Jonathon Lomas, Chief Executive Officer of the Canadian Health Services Research Foundation, agreed that to improve the use of knowledge, decision-makers and researchers must work together in the production of that knowledge. The focus has shifted away from "push" strategies to a new era of "partner and pull" approaches to knowledge use, he said. These approaches are driven by the health system, not by the research world. They focus on ongoing linkage and exchange (personal two-way communication between researchers and decision-makers), as well as on creating demand for useable research.

Lomas spoke of four ways to create demand for research: design forums for the exchange of ideas; re-design organizational structures and processes to value and apply research; improve individual's skills to

identify, adapt, evaluate, and apply research; and develop credible knowledge brokers or intermediaries.

Forums can be used to highlight “proven innovations” and create a climate for implementation. Regional or local “exchanges” between leading researchers and those governing, managing, and delivering health care can also be effective provided the number of participants are limited, the meetings are “off-the-record,” and the chosen themes are topical and relevant.

Lomas illustrated organizational preparedness for evidence-based decision-making in the following way:

- My organization is on the mailing and alert lists of key health services research agencies, and I have access to people inside or outside my organization (librarians, web search specialists, consultants, researchers, journal clubs, etc) who can help me find the information I need.
- People who understand the context (including political, economic, organizational, and societal factors) for a specific health system problem facing my organization are involved in assessing the relevance of available evidence.
- My organization requires that evidence be summarized, written in plain language, and presented in a format suitable for decision-makers.
- Researchers/analysts have regular opportunities to brief senior management/board members about research on specific issues.

Whether knowledge brokers (also known as knowledge translators or intermediaries) are on the supply-side or the demand-side, they facilitate the use of research because they understand both the research and decision-making environments, Lomas said. Knowledge brokers have the professional skills to find, synthesize, and assess relevant research and communicate it in ways that non-specialists can understand. They also possess a range

#### **Box 4.3 Ceara State, Brazil: researchers and policy-makers working together to improve health**

In one of the working sessions, Cesar Victora, Professor of Epidemiology at the Federal University of Pelotas in Brazil explained why one state in his country is well on its way to achieving the health-related MDGs seven years before the deadline of 2015. The short answer is researchers and policy-makers in Ceara State have a long tradition of working together.

In 1987, the newly elected state government targeted child survival as a priority and sought help from researchers in understanding the problems and defining priorities. With a very small budget, they conducted a survey that focused on well-defined indicators, including mortality and cause of death. Social inequities were also investigated. Results led to the implementation of several new initiatives to tackle specific problems such as a high incidence of diarrhoea and low immunization rates. To increase the chance of success, innovative approaches were used (such as relying on a new cadre of community health workers and alternate vaccine delivery strategies), and health-care providers were rewarded for good performance.

A few years later, a follow-up survey showed where improvements had been made, pinpointed persistent problems, and drew attention to new problems (such as a high rate perinatal mortality and low use of breastfeeding). Several years and four surveys later, considerable gains have been made in improved nutritional status and child survival, as well as in reductions in social inequities.

According to Victora, the key factors behind Ceara State’s success are:

- political will and continuity—child survival has remained a political issue even though the local government has changed five times;
- a clear and long-standing commitment to improving health systems, including efforts to reach the population through community health workers and other delivery channels;
- delivering preventive and curative interventions in an integrated way, and never considering child health separately from reproductive and family health issues;
- a motivated and technically competent central team, a focus on capacity building and improving service delivery, and a commitment to evaluation; and
- a close alliance and regular feedback between policy-makers and evaluators.

**Box 4.4 Free State, South Africa: a fruitful collaboration between implementers and researchers**

For the past 10 years, the Department of Health in Free State, South Africa has been actively pursuing and building relationships with researchers to assist its efforts to improve the health of the community. “Researchers have become an invaluable part of our team,” Ron Chapman the department’s Executive Manager of Health Support said in one of the working sessions.

The specific example he used was the ongoing public sector rollout of the Comprehensive Care and Treatment Program for HIV and AIDS. The department has invited research teams and community groups to collaborate with government and service providers in implementing the programme (which includes treatment with antiretrovirals).

According to Chapman, researchers add value by assessing outcomes and impact, monitoring the implementation process, ensuring the collection of quality information, documenting the process, and helping to develop local training guidelines. Moreover, such a participative approach encourages other interested researchers to become involved, and makes it possible to raise funds from interested donors.

Chapman also stressed the importance of being open with the public and exposing weaknesses and problems as they arise. “In reality, the more open we are, the less criticism we have,” he said. “It has been a win-win situation all the way.”

Unfortunately, such collaborations are still the exceptions rather than the rule. A researcher involved in the rollout of the HIV/AIDS treatment programme in Free State called it “one positive experience among several negative and unfruitful attempts where policy-makers are either not open to evidence or not interested in using evidence to choose among alternatives. We need to explore and develop ways to encourage decision-makers to be more open to evidence and research,” he said. “It’s not just researchers who need new perspectives and reward structures.”

of mediation and negotiation skills, which helps improve the chances of constructive interactions between demanders and suppliers of research.

***Making programmes more effective***

In a working session, John Frank, Scientific Director of the Institute for Population and Public Health, Canadian Institutes of Health Research said: “Most basic research is used primarily by other researchers, and so its knowledge transfer can be reasonably accomplished by journal or book publication. Most applied clinical, health system, and public health research is also used by practitioners, policy-makers, and programme administrators, and so it needs other explicit knowledge transfer strategies, which vary some-what according to the specific target audience of users.”

Concurring with many other speakers at the Summit, Frank said users, including community groups, should be involved from the start of any research project, especially in the selection and framing of the research questions to be addressed. Civil society organizations and NGOs can play a role in fostering an environment where evidence and

information can be used to promote social change. And selected front-line primary health-care/public-health staff in least developed countries should be “transformed” into operational research partners, especially at the start of a new intervention programme.

Moreover, project evaluation criteria should include explicit assessment of the following questions:

- Who, if anyone, is starting to use this research? How can that be facilitated?
- What is known about barriers to its use and possible solutions?
- How will this use be sustained after this project is over?

## ***Collaboration throughout the research process***

“Research—not only biomedical, but also operational, socioeconomic, behavioural, and political—could help enormously policy-makers caught in political, social, financial and ethical dilemmas as they struggle to set priorities and make hard choices amongst competing demands and tasks,” Pascoal Mocumbi, the former Prime Minister of the Republic of Mozambique, said in a plenary session speech. “The example of developing countries that have adopted appropriate policy measures to face the health challenges and even with limited resources made rational use of existing interventions proves that the MDGs are achievable.”

Mocumbi, who is now the High Representative of the European and Developing Countries Clinical Trials Partnerships (EDCTP), continued: “It is our obligation to come out of this meeting with a strategy for the way forward that will contribute to the strengthening of international collaboration, networking, and coordination between scientists, funders (public and private), and policy-makers. There has to be a radical change, not incremental reorientation, in the way health research is performed, particularly in Africa.

“Research as a process of producing new knowledge is critical to solutions to new challenges. In health, particularly, solutions are based on choices and those who carry the major burden of diseases being addressed, should make the choices. The strategic focus should be on the priority health concerns of the poor. Empowerment of communities through transfer of information and knowledge will enable them make appropriate use of the new clinical interventions resulting from research and development,” Mocumbi said.

### **Box 4.5 India: bringing the public back into public health**

As part of its national “Right to Health Care” campaign, the People’s Health Movement in India has been organizing People’s Health Tribunals in various parts of the country. The tribunals are a partnership between government and civil society collectively participating in a process to improve health services.

“The People’s Health Movement is based on evidence not ideology,” Ravi Narayan, the organization’s Bangalore-based global coordinator, said during one of the working sessions. “We are systematically collecting, validating, and documenting health system failures such as corruption, gender discrimination, social exclusion, and stigma.”

Narayan described the two-pronged evidence gathering process and its impact to date. Questionnaires and checklists have been designed so that village activists and local people can collect information in a standardized manner. The questionnaire is used to document cases where individuals have been denied essential health care in the public health system; the checklist is used to document the workforce, infrastructure, services, and supplies available at primary health centres and district hospitals.

Reports based on an analysis of the information collected on health-care denial form the basis for the People’s Health Tribunals, which were held in various regions in 2004. Each tribunal is attended by several hundred to over a thousand people, including local health movement organizers, district and regional health officials, and an independent panel of health and social sector experts. Individuals who have suffered serious denial of health care narrate their testimonies. This is followed by a presentation of the people’s report on structural denial of health care, along with a series of recommendations on strengthening the public health system and making it accountable. Health officials are then asked to comment on the cases of denial and the specific steps that would be taken to redress structural issues. Finally, the panellists give their assessment and recommendations. The event is reported in the media, which helps to raise awareness of people’s health rights.

In July 2004, a formal submission of selected testimonies of denial of health care and reports on the status of public health facilities and services was delivered to the National Human Rights Commission. As a result, the Commission is now helping to organize similar public hearings in all the regions of the country.

“The government of India has been so impressed by the quality of the evidence we have gathered that they have begun to invite the People’s Health Movement to participate in health policy planning meetings,” said Narayan.



## Chapter 5 A call to action

### *Food for thought*

In his closing remarks, Julio Frenk declared the Summit a success in two respects. It was the first ever gathering of ministers of health to discuss health research—which is a valuable outcome in and of itself. And the Summit was successful in putting forward a more integrated view of health research. This was achieved in three main areas, he said. First, the Summit moved away from confrontations of the past and took a more comprehensive approach to health research—one that balances biomedical and other types of research. Second, there was an understanding of the importance of integrating local, national, and global research. The third area where the importance of integration was recognized was in the production and utilization of research and the need for both supply and demand side solutions. Frenk also stressed the importance of knowledge being regarded as a global public good; the importance of transparency and democratic access to knowledge—both positive and negative; and the importance of public trust and ethics.

In his wrap-up, Lincoln Chen noted that the “centrality of health to political and economic development is increasingly being recognized.” Although information and knowledge “are not panaceas that can overcome conflict, economic stagnation, or social exclusion,” research can help achieve the MDGs and improve global health. The keys to success are partnerships and collective action. “Mexico has established a new linkage between knowledge and social ingenuity for health equity in today’s new context. That linkage will depend upon partnership of all users and all researchers—biological and social, north and south, and public and private,” Chen said. “Ultimately, research is local, not local versus global. Global research, after all, is simply the summation of all local research. Global health problems are commonly shared and so too are the solutions. There can be no global health without global collective action. In pursuing collective global action, we should adopt the three pillars proposed by Julio Frenk: politics, ethics, and evidence. These can guide us to the Second Ministerial Summit in Africa in 2008.”

*“This Summit has been both an inspiring and a humbling experience. I learnt of the knowledge gaps and some rational ways of tackling the problems—and I return home a better minister.”*

*–Manuel Dayrit*

*“We have all committed to the MDGs, do we now run away from even trying to achieve them? We need to invest big and we need to invest big now.”*

*–Pascoal Mocumbi*

*“One of the best meetings I’ve ever attended.”*

*–Lindiwe Makubalo*

*“You have achieved the impossible.”*

*–Sally Davies*

*“Good evidence is the most powerful advocacy tool.”*

*–Julio Frenk*

*“To translate that action agenda will require ownership, internalization, and commitment by all participants.”*

*–Lincoln Chen*

*“We look forward to a document that will set the tone for the direction of health research in the coming years and which would be reflective of its participatory genesis.”*

*–Lincoln Chen*

### *The Mexico Statement*

The Mexico Statement represents the consensus reached by participants at the Summit on how to move the global health research agenda forward. The first draft of the

Statement was written after an extensive consultation process involving meetings in all WHO regions with researchers, policy-makers, NGOs, and civil society groups. One month before the Summit, a draft was circulated to all Member States seeking their input. In Mexico, all official delegations were requested to submit written comments to the drafting committee. On the second last day of the Summit, a revised Statement was circulated to all delegates and read during a ministerial roundtable by Richard Horton, Editor of *The Lancet* and a member of the drafting committee. With David Gunnarsson, Permanent Secretary of Iceland's Health Ministry, acting as chair, all ministers or their representatives were given an opportunity to comment. At the joint closing session the following day, the penultimate version of the Statement was read by Manuel Dayrit, the Secretary of Health from the Philippines, and participants at both the Summit and the Global Forum for Health Research were invited to comment.

Back in Geneva, some of these suggestions were taken on board and a final draft was circulated to the 52 official delegations for another round of approvals (see below for the full text). In order to give all Member States a chance to comment and take ownership, the Statement was further refined and presented as an official document to the 115<sup>th</sup> Session of the Executive Board of WHO in January 2005. The draft resolutions contained in this document will be presented to the World Health Assembly in May 2005 for endorsement by all Member States. The Mexico Statement is appended as an annex in both official documents.

## **The Mexico Statement on Health Research**

### **Knowledge for better health: strengthening health systems**

We the Ministers of Health and other official delegates from 52 countries\*

#### RECOGNIZE THAT

1. There remain serious obstacles to achieve the Millennium Development Goals (MDGs) in many low- and middle-income countries.
2. Strong national health systems are needed to deliver health-care interventions to achieve the health-related MDGs; to address other communicable and non-communicable diseases, sexual and reproductive health, injuries, violence, and mental ill health; and to improve health and health equity.
3. Research has a crucial but under-recognized part to play in strengthening health systems, improving the equitable distribution of high quality health services, and advancing human development.
4. Research is an essential component of strong health systems for informed and knowledgeable action to improve people's health and accelerate the rate of global, regional, and national development.

5. High quality research is facilitated if each country has a strong, transparent, and sustainable national health research system, defined as the people, institutions, and activities whose primary purpose is to generate relevant knowledge adhering to high ethical standards, which can be used to improve the health status of populations in an equitable way.
6. Health policy, public health, and service delivery should be based on reliable evidence derived from high quality research. Research evidence comes from various sources, including those that illuminate personal and cultural values and differences, draw on the needs of patients and providers, and measure the benefits and potential risks of health interventions. Ignoring research evidence is harmful to individuals and populations, and wastes resources.
7. The findings of high quality research should be not only accessible to decision makers but also communicated in ways that effectively inform policy, public health, and health-care decision-making. Research results must be published, documented in internationally accessible registers and archives, and synthesized through systematic reviews. These actions can help to inform decisions about support for new research and to build public confidence in science.
8. Biomedical and social science research contribute greatly to our understanding about the prevention, diagnosis, and treatment of a wide range of diseases. But crucial research aimed at strengthening public health and health systems has been neglected and under-funded. There should be a balanced and comprehensive research strategy that is inclusive of all relevant investigative approaches.
9. Health systems would be better able to deal with current global health challenges if existing interventions were adequately adopted and more effective interventions were developed for neglected diseases. Encouraging and supporting national, regional, and global product development and public-private partnerships, including partnership initiatives with developing countries, could contribute to fulfilling this need.

#### CONSCIOUS OF THE NEED TO

1. Re-affirm the culture and practice of high quality research, knowledge generation, and its application as critical to (i) the attainment of health targets within the MDGs; (ii) the performance of health systems, including expanding the capacity of human resources for health; (iii) the vitality of a country's socio-economic development; and (iv) the achievement of health equity.
2. Strengthen evidence-based evaluation of the consequences of health and other policies and practices at national, regional, and local levels.
3. Address the social determinants of health, including those related to gender, income, education, ability, conflict, and ethnicity.
4. Involve and inform users of evidence to create demand for research and to foster participation in the research process.

5. Strengthen national health research systems by building relevant capacity, developing capable leadership, providing essential monitoring and evaluation tools, improving capacity for ethical review of research, and putting in place necessary ethical standards and regulations for population health, health services, and clinical research.
6. Promote access to reliable, relevant, and up-to-date evidence on the effects of interventions, based on systematic reviews of the totality of available research findings.
7. Identify under-funded areas of research, such as on health systems and public health, where increased resources and leadership would accelerate the achievement of critical health goals.
8. Emphasize that research is a global endeavour based on the sharing of knowledge and information.
9. Build and strengthen public trust and confidence in science.

#### CALL FOR ACTION BY

1. National governments to commit to fund the necessary health research to ensure vibrant health systems and reduce inequity and social injustice.\*\*
2. National governments to establish and implement a national health research policy.
3. National governments to promote activities to strengthen national health research systems, including the creation of informed decision makers, priority setting, research management, monitoring performance, adopting standards and regulations for high quality research and its ethical oversight, and ensuring community, nongovernmental organization, and patient participation in research governance.
4. National governments to establish sustainable programmes to support evidence-based public health and health care delivery systems, and evidence-based health related policies.
5. National governments, WHO secretariat, and the international community to support networking of national research agencies in conducting collaborative research to address global health priorities.
6. Funders of health research to support a substantive and sustainable programme of health systems research aligned with priority country needs.
7. All major stakeholders, facilitated by WHO secretariat, to establish a platform linking a network of international clinical trials registers to ensure a single point of access and the unambiguous identification of trials.

8. All major stakeholders to strengthen or to establish activities to communicate, improve access to, and promote the use of reliable, relevant, unbiased, and timely health information.
9. The international health research community to ensure broad support for national, regional, and global partnerships, including public-private partnerships, to accelerate the development of essential drugs, vaccines, and diagnostics, and to ensure the equitable delivery of these interventions.
10. WHO secretariat to report progress on the Mexico Statement at the UN Millennium Development Goals Summit in 2005, at a conference on health systems in 2006, and at the next Ministerial Summit on health research in 2008; and to convene a ministerial level international conference on research into human resources for health.

\* See appendix for the names of the ministers and other heads of official delegations

\*\* For example, the Commission on Health Research for Development in 1990 recommended that "developing countries should invest at least 2% of national health expenditures in research and research capacity strengthening, and at least 5% of project and programme aid for the health sector from development aid agencies should be earmarked for research and research capacity strengthening." WHO should consider allocating a proportion of its country budgets to support high-quality health systems research.



## Summit Postscript

As stated at the beginning of this report, the Ministerial Summit on Health Research was part of an ongoing process. This postscript takes a brief look at what is being done (and what is being planned) to build on the momentum generated by the Ministerial Summit and turn the words of the Mexico Statement into concrete actions and tangible results.

*“We have to be accountable and develop some specific criteria about how we will know if we have been successful by 2008... These agendas are urgent; we need to commit ourselves to efforts to translate these well-intentioned words into specific actions.”*

*–Tim Evans*

As of March 2005, the following initiatives, programmes, and plans were underway:

1. WHO is pursuing the implementation of the activities contained in the Mexico Statement in close collaboration with the Alliance for Health Policy and Systems Research and WHO's Advisory Committee on Health Research. To start, WHO is working to ensure that the Summit recommendations feed into the Africa Commission, the G8 Summit in June, and the MDG Summit in September 2005.
2. WHO is considering the feasibility of establishing a major programme on health systems research. Its mission would be to promote the generation and use of knowledge in strengthening health systems in low- and middle-income countries in order to accelerate the achievement of the health-related MDGs, improve equity in health, and reduce poverty.
3. The Milbank Memorial Fund, the Center for Evidence-based Policy, and WHO AFRO are exploring the possibility of establishing a voluntary, high-level network of senior policy-makers in health to promote dialogue and discussion on problems of mutual interest.
4. Following on the recommendations of the Task Force on Health Systems Research, a detailed health systems research agenda will be developed by the end of 2005.
5. A major conference focused on health systems will be convened in 2006.
6. In close collaboration with existing initiatives at the national level, WHO is exploring optimal mechanisms to improve research-to-policy linkages, including the role of knowledge intermediaries and brokers. One initiative being developed is a competitive grants process to solicit proposals from countries for mechanisms and entities that will encourage policy-makers and researchers to work together.
7. The International Clinical Trial Registry Platform project was initiated in January 2005. Currently, the project is proceeding in three tracks: substantive standards, technical implementation, and fundraising. The first meeting of the Standards Advisory Group will be convened in April 2005.
8. In March 2005, WHO launched the Commission on Social Determinants of Health to add to existing UN efforts to increase vulnerable people's chances for a healthy life. The Commission will be strongly advocating for political action on the key social factors that influence health.

9. The Commission on Intellectual Property Rights, Innovation and Public Health, which was established by the World Health Assembly in 2003, continues its work, which includes the search for appropriate funding and incentive mechanisms for the creation of new medicines and other products against diseases that disproportionately affect developing countries.
10. WHO is refining its e-health strategy and establishing a global observatory for e-health systems. It is also defining strategies to promote knowledge translation in countries that will more closely involve the global network of WHO collaborating centres.
11. A new global collaboration, the Health Metrics Network, has been established by WHO and Member States to enhance the availability and quality of health data at the country and global level, as well as to develop sustainable and efficient health information systems within countries.
12. The scope of the second Ministerial Summit on Health Research, which will be held in Africa in 2008, will be broadened to address intersectoral issues that affect health. In addition to ministers of health, invitations will be extended to ministers of education, science, trade, finance, social welfare, and defence. The Summit will also seek to involve international organizations engaged in activities beyond health (United Nations Educational, Scientific and Cultural Organization, United Nations Development Programme, World Bank, World Trade Organization, International Organization for Migration, World Intellectual Property Organization, etc).

## Appendix – Names of the ministers and other heads of official delegations

Ministers	21
Deputy Ministers	3
Head of Delegations	28
<b>TOTAL</b>	<b>52</b>

### MINISTERS (21)

Burkina Faso	Jean-Gabriel Ouango, Ministre de la Santé, Ministère de la Santé
Congo	Alain Moka, Ministre de la Santé et de la Population, Ministère de la Santé et de la Population
Costa Rica	Rocio Saenz Madrigal, Señora Ministra de Salud, Ministerio de Salud
Haiti	Josette Bijou, Ministre de la Santé, Ministère de la Santé
Iceland	Jón Kristjánsson, Minister of Health and Social Security, Ministry of Health and Social Security
India	Lakshmi Panabaka, Minister of State, of Health & Family Welfare, Ministry of State, of Health & Family Welfare
Islamic Republic of Iran	Masoud Pezeshkian, Minister of Health and Medical Education, Ministry of Health and Medical Education
Lithuania	Juozas Olekas, Minister of Health, Ministry of Health of the Republic of Lithuania
Mauritius	A.K. Jugnauth, Minister of Health and Quality of Life, Ministry of Health & Quality of Life
Mexico	Julio Frenk, Minister of Health, Ministry of Health
Mozambique	Francisco Songane, Minister of Health, Ministry of Health
Nepal	Ashok Kumar Rai, Minister of Health, Ministry of Health
Nigeria	Eitayo Lambo, Minister of Health, Federal Ministry of Health
Pakistan	Mohammad Nasir Khan, Federal Minister of Health, Ministry of Health
Philippines	Manuel Dayrit, Secretary of Health, Ministry of Health

Senegal	Issa Samb, Ministre de la Santé, Ministère de la Santé, de l'Hygiène et de la Prévention
South Africa	Manto Tshabalala-Msimang, Minister of Health, Ministry of Health
Swaziland	Sipho Shongwe, Minister of Health and Social Welfare, Ministry of Health and Social Welfare
Turkmenistan	Gurbanguly Berdymukhammedov, Minister of Health, Ministry of Health and Medical Industry
Uganda	Alex Kamugisha, Minister of State for Health, Ministry of Health
Uruguay	Conrado Bonilla, Minister of Public Health, Ministry of Public Health

## **DELEGATIONS (31)**

### **Deputy Ministers (3)**

Chile	Antonio Infante Barros, Deputy Minister of Health, Ministry of Health
Cuba	Gonzalo Estevez-Torres, Vice-Minister of Public Health, Ministry of Public Health
United Republic of Tanzania	Hussein A. Dr Mwinyi, Deputy Minister of Health, Ministry of Health

### **Head of Delegations (28)**

Austria	Rudolf Lennkh, Austrian Ambassador to Mexico, Austrian Embassy, Mexico
Belgium	Godfried Thiers, Director, Scientific Institute of Public Health, Ministry of Health
Benin	Yarou Moussa, Directeur de Cabinet, Ministère de la Santé Publique
Brazil	Santiago F. Alcazar, Head of the International Affairs Office, Ministry of Health
Brunei Darussalam	Zainal Ariffin bin Hj. Yahya, Acting Assistant Director, Human Resources Development, Ministry of Health

Canada	Nick Previsich, Acting Director, International Health Policy and Communications Division, Ministry of Health
France	Gérard Bréart, Professeur d'épidémiologie à l'Université Paris VI et Directeur d'une unité de recherches de l'INSERM en santé périnatale et santé des femmes, Paris
Germany	Alfred Merkle, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ)
Indonesia	Dini Latief, Director General, National Institute for Health Research and Development, Ministry of Health
Ireland	Ruth Barrington, CEO, Health Research Board, Dublin
Israel	Avi Israelí, Director General, Ministry of Health
Kenya	J. Nyikal, Director for Medical Services, Ministry of Health
Lao People's Democratic Republic	Boungong Boupoua, Director, National Institute of Public Health, Ministry of Health
Malaysia	Kok Han Ng, Acting Director, Institute for Medical Research
Mali	Mamadou Adama Kane, Conseiller Technique du Ministre de la Santé, Ministère de la Santé
Myanmar	Soe Paing, Director General, Department of Medical Research (Lower Myanmar)
Nicaragua	Norman Jiron Romero, Director General de Regiación y Acreditación, Ministerio de Salud
Norway	Turid Kongsvik, Permanent Mission of Norway, Geneva, Switzerland
Oman	Bin Abdul Qadir Al Ghassani Oman, Under-Secretary for Health Affairs, Ministry of Health
Panama	Jorge Morta, Director del Instituto Conmemorativo Gorgas de Estudios de Salud
Poland	Roman Danielewicz, Director, Department of Science and Higher Education, Ministry of Health, Polish Ministry of Health
Portugal	Francisca Aveliz, Deputy Director, National Institute of Health
Romania	Radu Constantiniu, Director-General, General Directorate

for European, Ministry of Health

Sweden	Anders Blanck, Deputy Director-General, Ministry of Health and Social Affairs
Switzerland	Daniel Maeusezahl, Swiss Agency for Development
Thailand	Suwit Wibulpolprasert, Deputy Permanent Secretary, Ministry of Public Health
United Kingdom	Sally Davies, Director of Research and Development, Department of Health
United States of America	Elias Zerhouni, Director of the National Institutes of Health