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Global Forum for Health Research

HELPING CORRECT THE 10|90 GAP

Mexico

FORUM 8

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Global Forum
for Health Research
HELPING CORRECT THE 10|90 GAP

Health Research for the Millennium Development Goals
A report on Forum 8, Mexico City, 16-20 November 2004

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This report summarizes a selection of presentations made at Forum 8, mostly in plenary sessions, with the aim of bringing to a wider audience some of the issues raised. Neither the writer nor the Global Forum for Health Research necessarily agrees with the opinions reported.

For the final Forum 8 programme and for texts of full presentations made available to the Global Forum, the reader is referred to the CD-ROM annexed to this volume. The texts are also published on our website **www.globalforumhealth.org.**

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Health Research for the Millennium Development Goals

A report on Forum 8
Mexico City, 16-20 November 2004

prepared by
Beverly Peterson Stearns

Contents

Foreword by Stephen Matlin **3**
List of illustrations **4**

Introduction **5**

Chapter 1: Poverty, the foundation of inequity **13**
War and unrest 16
The disabled 18

Chapter 2: Knowledge and power **21**
The question of political will 26
Access to knowledge 28
From a grassroots perspective 29

Chapter 3: Maternal and child health **31**
Maternal morbidity: its interface with other diseases 34
Child deaths 36
IMCI: a test of implementation 38

Chapter 4: HIV/AIDS, malaria, TB **39**
Malaria's toll: a child every 30 seconds 42
Tuberculosis, the "comeback disease" 42
"And other diseases" 43

Chapter 5: The changing patterns of the burden of disease **45**
Cardiovascular diseases 46
Diabetes 47
Neglected diseases 48
Deaths on the road 51

Chapter 6: One goal to reach the others **53**
Public-private partnerships 53
Research networks 57

Afterword and Annex **59**
Afterword 59
Annex: Forum 8 Statement 59

Foreword

The Millennium Development Goals (MDGs), agreed at the UN Millennium Assembly in September 2000, represent the most important collective commitment ever made by developing and developed country governments, donors and international development agencies to tackle the poverty, ill health and deprivation suffered by a large proportion of the world's population. The importance of health as a central pillar of development is reflected in the fact that four of the eight MDGs specifically set health targets, and the remaining goals also depend to some extent on achieving health improvements. But, according to many assessments, the world will fail to achieve the MDGs by 2015 and, in particular, many countries and regions will fall substantially short of the health targets.

The crucial question is, therefore, what more needs to be done to achieve the MDGs? This issue was examined in two global meetings held jointly in Mexico City on 16-20 November 2004. Forum 8, the annual meeting of the Global Forum for Health Research, brought together over 700 policy-makers, researchers and representatives of governments, development agencies and research institutions. The WHO Ministerial Summit on Health Research involved over 200 invited participants, including health ministers and leaders from the health research and development communities. The two meetings shared a number of elements, including joint plenary sessions each day. Several key messages emerged, which are highlighted in this synthesis of plenary sessions from Forum 8. These include the need for:

- more political commitment
- a wide interpretation of the health agenda underlying the specific MDG targets – effectively an 'MDG-plus' approach that recognizes the central importance of also building strong health systems and addressing all the major health problems of the population, including noncommunicable diseases and injuries, mental and neurological health, sexual and reproductive health, and the health needs of groups such as adolescents and the aged
- more application of existing knowledge – which itself generates a research agenda into how best to adapt and implement what is already known to work
- more health research of all kinds to create new knowledge, tools and technologies and to learn how to translate these into effective interventions that are targeted to, and reach, even the poorest and most marginalized sections of the population.

The main themes of Forum 8, summarized here mainly from plenary presentations, demonstrate clearly that we know a great deal about what needs to be done, including what kinds of health research are urgently required if we are to accelerate and intensify the efforts necessary to achieve the MDGs.

What will be the costs of failure, not simply in ill health and mortality, but also in terms of economic, political and security considerations and as a moral failure on the part of humanity? We are the first generation of human beings that has the capability to solve the problems of poverty, hunger, illiteracy and ill-health that are recognized in the MDGs, and the first to express the intention to do so. How will we judge ourselves, and how will our descendents judge us, if we fail to achieve our declared goals?

Professor Stephen Matlin
Executive Director
Global Forum for Health Research

List of illustrations

These boxes, tables and charts are "quotations" from presentations made at Forum 8, shown mostly as slides; they have simply been adapted to the format and style of this publication.

1. Millennium Development Goals and Targets 6
2. Public trust in research 8
3. Public funding of health R&D as a percentage of public health expenditure and GDP 2001 10
4. Figures from Bangladesh: Infant mortality rate; Total fertility rate; Life expectancy at birth; Change in social indicators 14
5. Wealth, infant mortality and life expectancy in low-income countries, Cuba and high-income countries 17
6. Poverty, gender and ageing: important research priorities 20
7. Wellcome Trust expenditure in tropical medicine research 1999-2002 21
8. Clinical trials registration 23
9. Why care about the role of research? 24
10. Funding for research on HIV/AIDS, malaria, TB 26
11. Global distribution of public and private health R&D expenditures 2001 27
12. Relationship between knowledge and intellectual property rights 28
13. The MDGs and the 10/90 gap: a PHM perspective 30
14. MDGs and maternal morbidity 34
15. Classification of maternal morbidity conditions 35
16. Gaps between rich and poor countries are increasing 37
17. Integrated Management of Childhood Illness 38
18. Net Official Development Assistance as a percentage of gross national income 2003 40
19. Leading causes of death 2002 41
20. Hospital costs associated with cardiovascular diseases and diabetes, Mexico 2001 47
21. The burden of selected tropical diseases other than HIV/TB/malaria 2001 50
22. Challenges will remain beyond 2015 50
23. Saving lives: what works (a) Involving governments (b) Good laws and enforcement 52
24. How to achieve the MDGs 56
25. Whose responsibility? 57

Introduction

The global health research gap has widened into a chasm, separating developed countries, with most of the resources, from developing nations, which increasingly carry the burdens of both infectious and chronic diseases. Very many participants at the 2004 annual meeting of the Global Forum for Health Research, Forum 8, in Mexico City said bluntly they believed it was highly unlikely that half of the UN's Millennium Development Goals (MDGs), those specifically dealing with health, would be achieved by the target date of 2015. **Richard Horton**, editor of *The Lancet*, stated in an editorial before the conference that the MDG deadline "looks ludicrously optimistic." Several speakers attributed the failure to meet the MDGs to a lack of political will to deal with the world's health problems and to the profound poverty and inequities that are compounded by disease.

Mexico's President **Vicente Fox**, addressing participants at the joint opening of Forum 8 and the Ministerial Summit on Health Research, phrased it a little differently, saying that today's globalization means there must be a "collective will" to face the challenges. Health, he added, is a social asset that should be within the reach of all, not a privilege. He pointed to Mexico, which is one of the few low- and middle-income countries to devote 2% of its health budget to research, and predicted that his country would meet some of the MDGs by 2006 and the remainder by 2010.

For most developing countries, however, the future is not so bright. The health research gap mirrors widening disparities in health between the rich and poor, the developed and developing countries. While the average life expectancy in high-income countries now exceeds 78 years, a child born today in one of the least developed countries can barely expect to reach 50. The health systems themselves are inequitable, delivering more and higher quality services to the well off than to the poor.

The Statement issued at the close of Forum 8 concluded that the vicious circle of poverty and ill health which are the targets of the MDGs will not be broken without intensified effort to close what has become known as the "10/90 gap" – in reference to the estimate made in 1990 that less than 10% of global health research resources were being applied to 90% of the world's health problems. Even if it has proved virtually impossible to verify and monitor these percentages, it is clear that the gap in the health status of populations in developed and developing countries remains large. Some at the meeting contended that health research – yielding new knowledge and new technologies – provides the only hope of closing this gap.

Others, however, declared that health research alone is incapable of bridging this gap because the heart of the problem lies in the failure of health systems to gain access to the knowledge and technology already available – and then to apply them. This is another divide: the "know/do gap."

Forum 8's concluding Statement says "Achieving all the MDGs will require addressing health and its determinants in a comprehensive way and will necessitate further health research focused on the needs of developing countries." It specifies giving attention to the cross-cutting issues of poverty and equity, to the needs of both the aged and the very young and to disadvantaged groups such as migrants, refugees and those exposed to violent conflict. The Statement highlights the need for more research on the determinants of child and maternal health as well as greater attention to sexual and reproductive health. Additionally, it includes the need for more research into providing access to health systems and services, and their increased utilization (see the Annex for the full text).

Illustration 1.

Millenium Development Goals and Targets

Goal 1	**Eradicate extreme poverty and hunger**
Target 1	Halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day
Target 2	Halve, between 1990 and 2015, the proportion of people who suffer from hunger
Goal 2	**Achieve universal primary education**
Target 3	Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling
Goal 3	**Promote gender equality and empower women**
Target 4	Eliminate gender disparity in primary and secondary education preferably by 2005 and in all levels of education no later than 2015
Goal 4	**Reduce child mortality**
Target 5	Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate
Goal 5	**Improve maternal health**
Target 6	Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio
Goal 6	**Combat HIV/AIDS, malaria and other diseases**
Target 7	Have halted by 2015 and begun to reverse the spread of HIV/AIDS
Target 8	Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases
Goal 7	**Ensure environmental sustainability**
Target 9	Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources
Target 10	Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation
Target 11	Have achieved, by 2020, a significant improvement in the lives of at least 100 million slum dwellers
Goal 8	**Develop a global partnership for development**
Target 12	Develop further an open, rule-based, predictable, non-discriminatory trading and financial system (includes a commitment to good governance, development, and poverty reduction – both nationally and internationally)
Target 13	Address the special needs of the least developed countries (includes tariff- and quota-free access for exports, enhanced programme of debt relief for HIPC and cancellation of official bilateral debt, and more generous ODA for countries committed to poverty reduction)
Target 14	Address the special needs of landlocked countries and small island developing states (through the Program of Action for the Sustainable Development of Small Island Developing States and 22nd General Assembly provisions)
Target 15	Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term
Target 16	In cooperation with developing countries, develop and implement strategies for decent and productive work for youth
Target 17	In cooperation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries
Target 18	In cooperation with the private sector, make available the benefits of new technologies, especially information and communications

Accessed from http://www.developmentgoals.org/About_the_goals.htm 27 April 2005

At the beginning of the meeting, **Dr Pramilla Senanayake**, Chair of the Foundation Council of the Global Forum for Health Research, drew attention to a paradox: while the past hundred years have seen the greatest gains in human health and life expectancy in all of recorded history, inequities in health in the world are now greater than ever before. "The MDGs recognized this fact, and set out a series of goals and targets to be met to address the inequities," she said. "Four of the eight MDGs refer specifically to health, but in fact all eight are health-related and will not be achieved without improvements in health."

Dr Senanayake also referred to a remarkable milestone: in 2001 the world's annual spending on health research passed the US $100 billion mark for the first time. This represented a tripling of annual global spending on health research in the period between 1986 and 2001. "But again, totals and averages can be misleading," she cautioned. "There is still a massive under-investment in the health research needs of low- and middle-income countries – an under-investment that manifests itself in the lack of appropriate drugs and technologies to treat the multiple burdens of communicable and chronic diseases that many developing countries now face, and in the lack of appropriate knowledge and evidence about what policies, systems and services work in different places and settings, about what is failing, and about what is needed to improve them." The Mexico City meeting, she added, presented the opportunity to focus attention on the neglected areas of health research.

It was a point many others also addressed, calling for more attention to the world's most disadvantaged populations, especially people in sub-Saharan Africa and those marginalized on the basis of gender, disability, age and social caste

"The Millennium Development goals and their urgency are in a way an expression of our failure," stated **Ilona Kickbusch**, Senior Advisor on Health Policy to Switzerland's Federal Office of Public Health, in her keynote address. She projected that, at the present rate of non-progress in some countries, it might take another century to reach the goals. Kickbusch described the global public health crisis as "expressed in the distance between the do-ability of health and the inequity of the global health situation." She remarked that the great public health pioneers would "be shocked to see how we have squandered their legacy and the potential for better health in the face of increasing do-ability, technology, knowledge and resources."

Instead of viewing the health challenges "disease by disease, population group by population group and country by country," she urged participants to grapple with the obstacles, including the need to increase access, utilization and equity. Citing a Millennium Project Task Force interim report, she said the challenges are for the health community to develop a new kind of evidence base – one that distinguishes between an evidence-based understanding of the medical, behavioural or public health interventions that address the primary causes of morbidity and mortality and one that provides an understanding of social, political, economic structures that will enable societies to ensure that all people have access to those interventions.

"We need to step back and develop a new mindset and ethics based on human rights and global citizenship to which health is central," she said, "then turn this into a new binding global agreement on how to proceed: a new global social contract on health." Kickbusch declared that, "in the end, it is a question of political will and leadership" because without a strong political commitment, reaching any goals will be very difficult.

Political will was mentioned by many and in nearly every context of the health discussion.

Kickbusch, in her closing statement, noted that health is a driving force, one that represents the third largest industry after armaments and illegal drugs. "Be bold," she directed participants, about the possibilities of a global agreement, adding that it is "more than charity." She urged that research should keep the public health in mind, and study should focus on successes and not only problems, on health and not only disease.

The Millennium Development goals that are reached will be due to political will, not to the new types of evidence, she predicted. She pressed for a move away from a solely medical model and toward more research on the social determinants of health. There is, she added, a great need for support for research capacity throughout the world – there is a critical need to invest in a whole new generation and not one that is "gender-bound." We are just starting to understand the urgency of the health research situation, she concluded, and "it is a matter of life and death."

That sense of urgency pervaded the meeting, where many speakers reported a widening gap between the rich and poor in their countries or in areas critical to their country's health and economy. A number of participants warned against the tragedy of another lost opportunity if the largest health research conference yet failed to elicit action. With the clock running on the MDGs and issues such as sexual and reproductive health, inequities and the changing pattern of the burden of disease on the Mexico City agenda, there emerged a sense that major changes were not only necessary, but possible.

Tim Evans, Assistant Director-General of the World Health Organization, listed three key messages but noted that none of them are new: the need for more investment in health research and health systems research; examination of the system and the public's confidence in it, and the transfer of knowledge into health benefits. One problem in both national and global health systems research is how to review it. How will we know in another four years, he asked, if we have moved forward? The need to implement more explicit methodology in health systems research is urgent, he said.

Evans was the first of many to discuss the "knowledge gap" and one of its paradoxes: the inability to count deaths and the fact that the problem is worst in those countries where the burden of disease is the greatest.

"We're drowning in data," Evans lamented, adding that while the amount of information goes up, never down, key consumers are still not being served.

Evans called it "very unlikely" that MDG 4, reducing under-five child mortality by two-thirds between 1990 and 2015, will be met because "we have grand challenges in health systems performances we don't understand." He described these as problems of scale, distribution and safety.

Illustration 2.

Public Trust in Research

- Ethical process essential
- Accountability
  Clinical Trials Registration Portal
  - Unambiguous or unique identifiers
  - Easy access to trials registries
  - Standards for registration

Presented by Tim Evans
Source: Commission on Health Research for Development (1990): Action Agenda

As others did later in the meeting, Evans quoted the Hippocratic Oath – the imperative "Do no harm" – and said it has been broken on a huge scale: more than 100 million people face impoverishment today *because* they seek health care, he explained. On an annual basis one and a half to three per cent of the world's population face severe economic compromise *because* of their encounters with a health system.

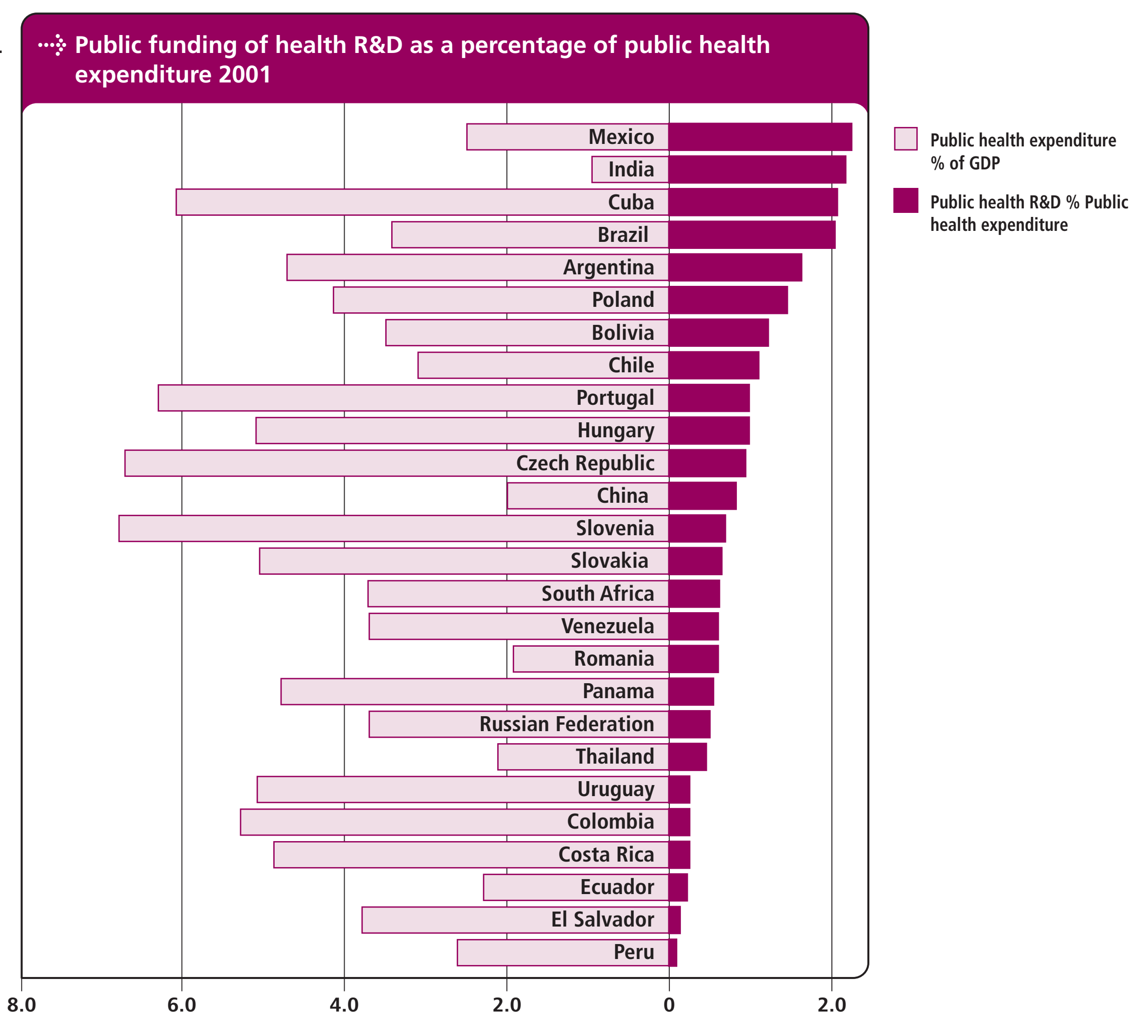
In a joint Forum/Summit session on the impact and relevance of research, **Pascoal Mocumbi**, former prime minister of Mozambique, raised the issue of lack of political will to deal with global health problems. He cited the continued rise of AIDS in Africa, of resistance of malaria to drugs and the way progress has been thwarted by the crippling lack of funds in the affected countries. African countries have adopted recommendations to deal with the most devastating health crises and are recipients of international aid, but he asked: "Who will give us the political leaders? Where will the tools and knowledge come from to establish the environment in which to work?"

He called for the development of new partnerships, both public and private, so that developing countries could exist not as islands, but as part of a plan for development with countries that already had the needed knowledge and tools. Mocumbi urged capacity building, adding individuals and networks in Africa, and determination of priorities by those in Africa so that the partnership is grounded locally. National ownership is the key, he stressed, for only if research takes place at the country level, even though it may be guided by a global partnership, can it be successful and address the needs of the people who are facing the burden of the disease. Local involvement can also then shorten the time lag between recommendations and implementation, limit the brain drain out of the developing countries, and ensure that the residents become actors, not just recipients of aid.

Professor Stephen Matlin, Executive Director of the Global Forum for Health Research, described a "hidden list" he sees behind the official targets of MDGs. Included there are the new knowledge and technologies that are needed to reach the MDG targets – and to close the health research gap. It also includes improving sexual and reproductive health, addressing noncommunicable diseases and injuries, and strengthening health systems and policies. This "MDG-plus" approach, he suggested, should look beyond the MDGs to ask what health research will be needed to bring major improvements to the world's health. "One of the threads running through the Forum will be the need to keep poverty and equity issues in the centre of our focus – to ensure that the MDGs are not just achieved as averages and sections of populations are not left behind as a result of poverty or due to biases based on gender, ability, race, social class or caste and other related social characteristics." Matlin defined health research, as used by the Global Forum, as extending beyond biomedical research to the social sciences, behavioural research, health policy and systems research.

He saw the responsibility for advancing research and improving health as shared and global, in developing as well as developed countries: by public and private sectors, governments, research institutions, multilateral agencies, nongovernmental organizations and civil society. Matlin recalled that in 1990 the Commission on Health Research for Development recommended that low-and middle-income countries should spend 2% of their national health budgets on essential health research. In 1998 no developing country was meeting this target but by 2001, four countries had reached this level: Brazil, Cuba, India and Mexico. A related recommendation from the 1990 Commission suggested that developed countries also meet a challenge: 5% of their donor funds to the health sector should be allocated for health research and research capacity strengthening. Most developed countries have a long way to go to meet this target.

Illustration 3.



Presented by Stephen Matlin in "The health research necessary to achieve the Millennium Development Goals"
Source: Monitoring Financial Flows for Health Research 2004, Global Forum for Health Research.

Julio Frenk, Minister of Health of Mexico, also addressed the nearly 1,000 participants of the combined meetings in Mexico City, declaring that public health is at a crossroads where it is imperative not only to identify the gaps but the options for the future. Appropriately, he observed, Forum 8 was being held in a developing country that had made substantial progress but still has considerable problems to confront. There is increasing evidence that health is not only a result of but a precursor to achieving the MDGs, he said, and scientific knowledge represents a driving force that leads to new technology and new structures. He pointed to Mexico's health reform and its new Popular Insurance programme, the country's first nation-wide health coverage scheme for the poor. Research, he said, played a central role in the programme and the knowledge gathered had been used for the public good. As the meeting progressed, others delivered both sharp criticisms and optimistic views of some of the health-care programmes recently launched in Mexico.

Frenk noted in the Forum's closing session that the largest number of health ministers ever had gathered in Mexico City to address health research and what had emerged was a more integrated view of the types of research. He said a balance between biomedical and health systems research had emerged, showing that the two types are complementary and can be more mission-oriented. The result, he explained, is the focus on a more integrated and clear set of priorities for the world's population through health systems research.

The national know-how that has been discussed must be treated as a global public good, he continued. The knowledge that has been created locally can be converted to the public good and then brought to bear, through political will, on capacity-building and the creation of institutions that continue their work long after the research ends. A challenge now, he said, is to work with the public to build trust.

We are just beginning to understand the causal link, Frenk said, that health is not the result of development but one of its determinants, and that investment in health is needed for countries to grow economically. Furthermore, there has to be an emphasis on health systems research, what Frenk called "the most neglected part of research needed to achieve the goals of equality." He added that policy-makers and researchers can work through a structured forum but they need to have mechanisms for policy formation.

With that thought in mind, Frenk quoted Ignacio Ramirez, aka El Nigromante, the Mexican philosopher, whose inscription appears in the Zócalo in Mexico City:

> *"Where do we come from and where are we going?... Have we not seen that yesterday's seeds contain tomorrow's flowers?"*

An optimistic vision of the use of research and knowledge was voiced by **Alan Bernstein**, President of the Canadian Institutes of Health Research, who quoted from a 2004 Inter Academy Council report on Inventing a Better Future:

> *"It is within our grasp to invent a better future for humanity. We can work to ensure that science and technology are harnessed to address the needs of all, rather than add to the luxury of a few; science and technology can help reduce, rather than exacerbate, the already enormous gaps."*

When the UN assesses progress towards the MDGs in September 2005, it will also evaluate how much closer the world is to closing those gaps.

Chapter 1: Poverty, the foundation of inequity

Millennium Development Goal 1: Reduce by half the proportion of people living on less than a dollar a day; reduce by half the proportion of people who suffer from hunger

The poorest people are at the greatest risk when health is evaluated, observed **Julio Frenk**, Minister of Health of Mexico, at the beginning of Forum 8. It was a statement that was echoed often by others and became part of the foundation of the health research discussion, because it was clear that poverty not only underlies the global health crisis but contributes to it. A companion point that has long been a theme was the lopsided balance of health research funding: 96% comes from the industrialized world.

Frenk voiced a list of needs that include, in first place, the local adaptation of knowledge so that every country has its own essential health research system and can adapt what is done elsewhere. To this he added the need for partnerships, which can cut across rich and poor divides, social sectors and national borders and the North/South axis. Access to data so health-care systems can keep abreast of scientific advances was also on the list, as was the need for a comprehensive view of fundamental knowledge and ethical deliberations in order to generate public trust.

Frenk referred to the "know/do gap" which, he said, includes allowing those who have power to guide the way with their ideas. However, while knowledge of health measures and systems is necessary to fight poverty, he warned that the medical costs themselves can create poverty. National health programmes should be providers of knowledge and services that benefit the general public, he said.

"We live in a very inequitable world," agreed **Jacques Baudouy**, Director of Health, Nutrition and Population at the World Bank, at the beginning of a plenary session on poverty and equity. He cited a statistic familiar to many: 20% of the world's richest people enjoy 80% of the world's income. This is not a gap, but a divide, he said, a fracture that, if it continues, becomes a major economic and human loss. He predicted that the greatest challenge for world development in 2005 would be about equity. Changes, he noted, don't come in a vacuum; there must be a fundamental change of behaviour, with continuous monitoring and evaluation as health measures are implemented.

Three weeks after the close of Forum 8, the UN released figures showing that the number of chronically hungry people in the world had risen to 852 million, an increase of 18 million since 2000. At least 80% of the world's chronically hungry live in rural areas and over half of them are subsistence farmers. The UN also reported that five million children now die of hunger every year. Few participants in Forum 8 would have been surprised at the rising numbers; the statistics confirmed the urgent need to redouble efforts to meet the MDGs.

Evidence from Bangladesh was brought forward in Mexico City to suggest that a women-focused poverty alleviation programme can reduce inequities in health status. In Bangladesh, where 140 million people live in the most densely populated country in the world, the poor and women have gained the most over the past 30 years, roughly since the country became independent. During the last decade and a half the Bangladesh Rural Advance Commission (BRAC), a nongovernmental organization, and the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), a research institution, collaborated in a research initiative that collected knowledge about how development programmes positively affected health and health equity.

Mushtaque Chowdhury, Deputy Executive Director of BRAC, delivered some of the results to demonstrate what a resource-poor country can accomplish:

- Infant mortality rate halved
- Fertility rate nearly halved
- Life expectancy improved by 40%
- Total enrolment in schools doubled (now nearly100%).

A closer look at the improvements shows even greater progress for certain sectors of the population: marginalized groups such as the poor and women. Chowdhury credited societal changes for the improvement, as well as some of the affirmative actions that the state and other development partners have taken to improve equity. Fundamentalist ideas, he said, were left behind when constitutional obligations were followed as a result of the War of Liberation.

As Bangladesh's national commitment to health care was extended, the people also became more self-sufficient in obtaining food, and the role of women in local and national governance increased, he added. Affirmative action measures also improved access to basic education for marginalized groups. These measures included a stipend for girl students, "food for education" programmes for poor children and targeted efforts by NGOs for rural poor and girl children. These advances took place as private garment factories flourished and employed more women, who then gained access to micro-credit.

Illustration 4. **Figures from Bangladesh**

Infant Mortality Rate

1970	2000
140.0	66.3

Source: UNDP 2002;BDHS 2000

Total Fertility Rate

1970	2000
6.3	3.3

Source: UNDP 2002;BDHS 2000

Life Expectancy at Birth (years)

	1970	2000
Total	44.2	59.4
Female	43.5	59.5
Male	45.0	59.4

Source: UNDP 2002;BDHS 2000

Change in Social Indicators

Indicator	1970	2000
Gross enrolment ratio at primary level (%)		
Total	49.8	100
Girls	33.3	100
Boys	65.7	100

Sources: UNDP 2002; Chowdhury et al 2001

Presented by Mushtaque Chowdhury in "Improving Equity in Health: What to do about it?"

BRAC was set up in 1972 as a national NGO with the specific goals of poverty alleviation and empowerment of the poor, women and other marginalized groups. From the beginning, Chowdhury said, research was an integral part of its efforts. By June 2004, BRAC had a staff of 62,000 and a budget of US$ 235 million, 80% of which was self-generated. Its microfinance programme for poor women represented 5 million families and its health programmes reached 80 million people. ICDDR,B, an international research centre based in Bangladesh, used demographic and health surveillance in the Matlab sub-district. The joint project of the two groups began in 1992.

It is imperative, Chowdhury said, that interventions such as those in Bangladesh are scaled up and further evidence generated on ways of tackling inequities using appropriate research tools and collaborations.

A community-based Basic Development Needs (BDN) initiative was shown to be effective in Pakistan, a country where little headway had been made in most rural areas and urban slums in reducing maternal and child mortality because life-saving interventions are not fully accessible to the poor. Preventable deaths such as those resulting from diarrhoea, acute respiratory infections and vaccine-preventable illnesses take a far heavier toll in poor communities compared to their more affluent counterparts. The government of Pakistan, in collaboration with the World Health Organization and communities, implemented the BDN initiative for poverty reduction, correlating poverty and ill health and implementing health interventions.

A report by **Khalif Bile Mohamud**, WHO Country Representative in Pakistan, traced a community-based programme promoting health, universal primary education, water and sanitation services and showed that active collaboration with local and district government authorities and their development infrastructures was the strength of the programme. Initially, he noted, health was ranked fifth on the priority list formulated by the community, after water, food, security and income generation. In view of this, the report said, "it was natural why health should necessarily be integrated in the development package of the BDN initiative as this would improve access to health-care services and facilitate engaging mothers and local women volunteers in carrying out public health activities through the home health-care package and hence improve their community's perception about the value of health for child and maternal survival and community development."

The successful programme is now being implemented in several rural communities in Pakistan, involving a population of more than a million people, and is in the process of being replicated in several other districts. It has demonstrated an ability to improve health and reduce poverty and is described as providing an opportunity for a bottom-up, integrated community-driven social transformation.

Not only do people living in poverty lack access to basic medical interventions, they are even further away from the advances of science and biotechnology.

"There is a great need to develop new health technologies for the poor in developing countries," said **Richard Mahoney** acting Chief Executive of MIHR, the Centre for the Management of Intellectual Property in Health Research and Development, in his introduction to a case study on innovation in health research and development for diseases of poverty. Using a framework he had developed, Mahoney assessed the development and commercialization of a hepatitis B vaccine in Korea, a country that had experienced a rapid rise from being one of the two poorest countries in the world in 1954 to its position today as a high middle-income country with membership in OECD. Since the 1980s, Korea has been able to obtain the needed intellectual property rights to manufacture hepatitis B vaccine through joint ventures that were favoured by its domestic market and by scientists in Korea who could produce the vaccine. At the same time, the Korean government supported improvement of the Korean Food and Drug Administration to more closely meet international standards. Korea has become an important player in the supply of hepatitis B vaccine for use in developing countries and a model for other developing countries that aspire to develop health technologies. By the late 1990s, two Korean companies were exporting the vaccine, a move that drove down prices on the international market place: prices fell from as much as $30 per dose to 25 cents per dose by 2003. Once local production of hepatitis vaccine was possible, the Korean government established a programme of universal immunization for infants, which not only improved health in the country but guaranteed a profitable market for the producers. The results demonstrate, Mahoney said, that innovative developing countries can contribute to important health products for the poor but must have access to knowledge and technology, research and development capability. They then can build up their drug regulatory capability with assistance from WHO, UNICEF and other regulatory and international organizations.

War and unrest

Dr Suwit Wibulpolprasert, Senior Advisor on Health Economics, Ministry of Public Health, Thailand, used his country's history to illustrate that it is possible to improve health during periods of internal unrest and economic turmoil. But he said, "…it is easier to do much better in times of internal peace and economic prosperity." He described how his country's health budget remained very low from about 1970 to 1987 and then increased from 4% to 7% during the following decade. In the period 1979 to 1987, when the recession ended, the population/doctor ratio dropped from 21.3 to 8.6. During the same period maternal mortality fell by about three-fourths. He called this a period of "good health at low cost." To improve health equity, the limited budget was shifted from the urban health facilities to rural primary care services. After 1987, as GDP increased in a period of peace and economic growth, the health budget grew as a percentage of the national budget. During this time, the private sector also grew quickly and the number of doctors increased. Between 1987 and 1996, it was possible to decrease the defence budget from 25% to 13% of national spending, he said, and economic growth enabled public debt to be decreased from 25% to 5% of the budget. Thirty percent of the national budget was freed for education, health, social services and infrastructures.

Since the last election, Wibulpolprasert said, nearly everyone in Thailand has been covered by health insurance. He added that this illustrates how peace makes possible a reduction in the proportion of the security budget and economic growth then can reduce the public debt as well as provide more funds for social investment. Wibulpolprasert emphasized that health budgets can be protected and even increased in an economic downturn but the "tipping points" are the leaders who wield influence – connectors, mavens and salesmen – and the conduciveness of the environment in which they operate. Health can be improved in low-income settings through political will and democracy.

"Health practitioners, policy-makers and health researchers can't easily influence some important factors causing ill health," stated **Sir Iain Chalmers** of the James Lind Initiative, United Kingdom, referring to wars and civil unrest, abuse of human and civil rights and economic injustices. Taking examples from personal experience while working for the United Nations Relief and Works Agency for Palestinian Refugees in the Gaza Strip, he showed photos of preventable threats to health: a baby dying of neonatal tetanus, a boy holding a large can of breast milk substitute labelled "safety milk" and a malnourished child drinking from a hydraulic brake fluid bottle with a teat on it. "Working alone, people in the health field can't easily influence some important factors causing ill health, but where there's a collective will, there's a way."

He chose Cuba as an example to illustrate his point. Cuba's GDP is a third higher than other low-income countries but only a seventh of high-income countries. Still, Cuba's infant mortality is a fraction of the low-income countries and nearly equal to that of the high-income countries. Similarly, life expectancy rates for males in Cuba equal that of high-income countries and are only slightly lower for females. He attributed these attainments to the priority the Cuban government has given health services.

Chalmers advocated systematic reviews of research to inform decisions in health care and "less research, better research and research done for the right reasons."

Illustration 5. **Wealth, infant mortality and life expectancy in low-income countries, Cuba and high-income countries (World Bank 1997)**

	Low-income countries	Cuba	High-income countries
GDP ($)/capita	2,023	3,000	21,698
Infant mortality	69	9	8
Life expectancy at birth			
Male	62	74	74
Female	64	78	81

Presented by Sir Iain Chalmers in "Ignoring information from research harms people and wastes resources"

Good intentions are not enough, he stated, adding: "I could have served my Palestinian patients and their community better if I had had more humility and a greater willingness to admit uncertainties about the effects of health-care interventions." He also pointed to the tremendously popular book, *Baby and Child Care*, by Dr Benjamin Spock, who advised parents that babies should be put to sleep on their stomachs. The advice, followed by an entire generation of parents, may have led unwittingly to countless crib deaths, he said.

Systematic reviews are designed to minimize biases, assemble data and analyse results, Sir Iain remarked. They should result in a transparent report that allows readers to judge whether the review is trustworthy. Using an example from child health, he showed how a systematic review of research between 1939 and 1967 showed that antibiotics prescribed for children with measles could also reduce the risk of developing pneumonia.

While systematic reviews are essential and help bridge the gap between what is known and not known, Sir Iain said if they are to inform practice and policy reliably, they must take account of *all* the relevant evidence from research. "People have suffered and resources have been wasted because disappointing results of research have not been reported," he said. Biased under-reporting of research is ethically and scientifically unacceptable, he stated. He lauded New York State Attorney General Eliot Spitzer who set off a controversy in the United States when he filed a lawsuit against a large pharmaceutical company, alleging the firm suppressed negative results of trials that tested the safety and efficacy of its leading antidepressant drug used for young people.

He suggested that 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." Researchers and users of the results of research should work together to identify unanswered questions of importance, he said, and gave an example of how illiterate Nepalese women helped design a randomized trial on infant mortality with international researchers.

Chalmers emphasized that new research should begin and end with reviews of other research. In the North, he added, there has been a "mountain of trivial and irrelevant research done." He urged that new research should not be supported unless systematic reviews of existing evidence show that it is ethical and likely to be worthwhile.

The disabled

World Health Organization definition of health (1948): "Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity."

Access to health care is far from universal and the quality of it varies greatly throughout the world. Inequities span a broad range, affecting those people of different economic backgrounds, social classes and abilities. More than 600 million women, men and children – one-tenth of humanity – are disabled in one manner or another. Eighty percent of them live in the developing world where they are the poorest of the poor. Of these, 150 million are between 10 and 24 years old.

In her opening remarks, **Venus Ilagan**, Chairperson of Disabled Peoples' International, called attention to how health-care systems in developing countries and in countries in transition remain insensitive to the needs of disabled people in general, and disabled women in particular.

"Modern medical technology and the overall increase in life expectancy have not really helped improve the situation of disabled women – who comprise up to 20% of the world's female population – and who to this day continue to experience inequality in health status and treatment," she said.

She cited the evident differences between males and females and among disabled people in the Asia-Pacific region in health risk, health-seeking behaviour, access to and utilization of health services and health outcomes. Disabled women, especially, are denied access to key determinants of health and to basic human rights such as education, she said. They have few opportunities for jobs outside their homes and are usually the primary ones who do the cooking, which makes them more vulnerable to chronic respiratory disorders through inhaling smoke from cooking fuels.

Ilagan called for more research to understand the extent of the deprivation and its impact on the health of women as well as the needed policy responses to correct the problem. Not only is there a preference for sons over daughters in many societies, she said, but a girl child with a disability is almost totally unwanted and considered a burden to her family. As a result, the health and nutrition of thousands of disabled girls and women are at risk. Disabled women often receive limited food and health care and are the targets of domestic violence, rape and sexual coercion. Consequently, health problems include sexually transmitted diseases, HIV/AIDS, depression and anxiety. Women and girls with disabilities face double discrimination based on disability and gender and fare far worse than non-disabled women or disabled men in almost all areas.

She assailed officials in many countries for pressuring disabled woman not to have children and/or to have abortions or be sterilized. If they do give birth, she said, they might be forced to give up their children through adoption or be deprived of their custody. "This practice is often widely supported by health officials who, with no scientific basis, assume that disabled women cannot be adequate parents or that they will invariably produce disabled children."

Rehabilitation services reach only about 3% of those who could benefit from them and those services often are inaccessible to women and girls with disabilities, she said.

Ilagan condemned female genital mutilation, which often causes disability and death among women. She cited a UNICEF publication that reports that approximately 2 million girls are mutilated every year in Africa and, although the practice is outlawed in countries like Canada, immigrant populations often send young girls "home" to be mutilated before returning to where their families live.

In many countries, disabled people who are not part of the work force are not covered by health insurance. In the Philippines, where the health system is being privatized, it has become common for health insurance companies to refuse to provide insurance for the disabled or to make the premiums so high they are out of reach of the poor. Similar trends are occurring in affluent countries like Canada and the USA, she said.

Ilagan criticized multilateral institutions and bilateral donors for not mainstreaming disability into their development strategies, or including the disabled in the health programmes they finance.

"The right to health of disabled people must be recognized as a core human rights issue that needs to be addressed," Ilagan declared. "This must take place in an environment of political will and ample resources – and not just ignored with the excuse of resource limitations, as is the practice in many countries."

Gregor Wolbring, Adjunct Professor and Researcher at the University of Calgary, Canada, agreed that disabled people should be considered under the concept of social equity. He sees disability as a social problem, not a medical one, and cautions that disability should not be viewed as a defect. For too long, he said, health research and new developments in science and technology focused on "fixing" disabled people, neglecting the social determinants of their ill health.

Lesley Doyal, Professor at the University of Bristol, United Kingdom, added ageing to the discussion of poverty, gender and disability. Age, she said, is a key element in this complex matrix and a crucial determinant of individual health and wellbeing even though the Millennium Development Goals focus very much on younger groups. She noted that huge increases are predicted in the older population in developing countries by 2050, when one in four people in Asia and Latin America will be over 60. Two-thirds of older people in the world will be in developing countries and the majority of them will be women. And yet, Doyal pointed out, while women's advocates have called for more attention, they have said little about age.

The needs of older women and men should be key themes in the research agenda for the MDGs, she said, adding that sex differences shape biological aspects of ageing.

Doyal also raised a question: "What do we mean by 'ageing' and 'old' in developing and developed countries?" She noted that women, especially, are considered old at the end of their reproductive period.

Turning to the first MDG, Doyal said the oldest women and widows are often among the poorest people. One broad estimate is that 100 million older women and men live on less than one dollar a day. At the same time, there has been an increase in the number of older people, especially women, who are heads of households. Although the majority of older people in developing countries work, 80% have no regular income and few earn enough to meet basic needs. "The extent, causes and effects of poverty, and how they are different for older men and women, need to be researched if the number of poor is to be reduced by 2015," she said.

Illustration 6.

Poverty, gender and ageing: important research priorities

- What factors damage/promote well-being and capabilities of women/men in old age inside and outside families?
- How does gender shape patterns of support and isolation?
- How do 'pensions' impact on health of women and men: who gets them and who spends them?
- How have older women and men been differentially affected by global restructuring, displacement and natural disasters?
- Questions like this need to be answered if poverty MDG is to be realized in ways that do not discriminate against older groups in general or against women or men

Presented by Lesley Doyal in "Gender, health and ageing: global research priorities"

Doyal suggested a series of research priorities on the subject, including how gender shapes the patterns of support and isolation and the impact of pensions on the health of women and men. "Even very low pension levels are essential to women," she explained. While there is very little data, many older people say they have limited access to food. One recent survey in central Ethiopia found 80% of older people malnourished, compared with 54% of the population as a whole.

Moving to MDG 6, she said there is little data on HIV/AIDS infection rates in people over the age of 50 and an absence of research on sexual practices of older women and men. What is known is that older women and some men often provide care for whole families, e.g. in sub-Saharan Africa 8 million children are cared for by grandparents. In South Africa, one in every three households is headed by older people. "How does this affect their own wellbeing and how can they be better supported by health services?" she asked. "How can older women and men best participate in prevention and treatment programmes?"

There is a huge gap in statistical information on older people's lives and, according to Doyal, only qualitative/participative research on the experiences of men and women in different settings can provide the basis for age- and gender-sensitive policies for the health sector.

"These policies will be in line with the aspirations of the Madrid International Plan of Action on Ageing and the Beijing Platform for Action on Women, due for review in 2005, as well as the MDGs," she forecast. "None of these will achieve global equity in health but they can help to reduce inequalities between rich and poor, men and women and old and young."

Baudouy, reflecting on Stephen Matlin's "MDG-plus" vision, said the challenge Doyal had put forward amounted to a "MDG-plus-plus" programme. Only if inequities are addressed, will MDGs be reached, he said.

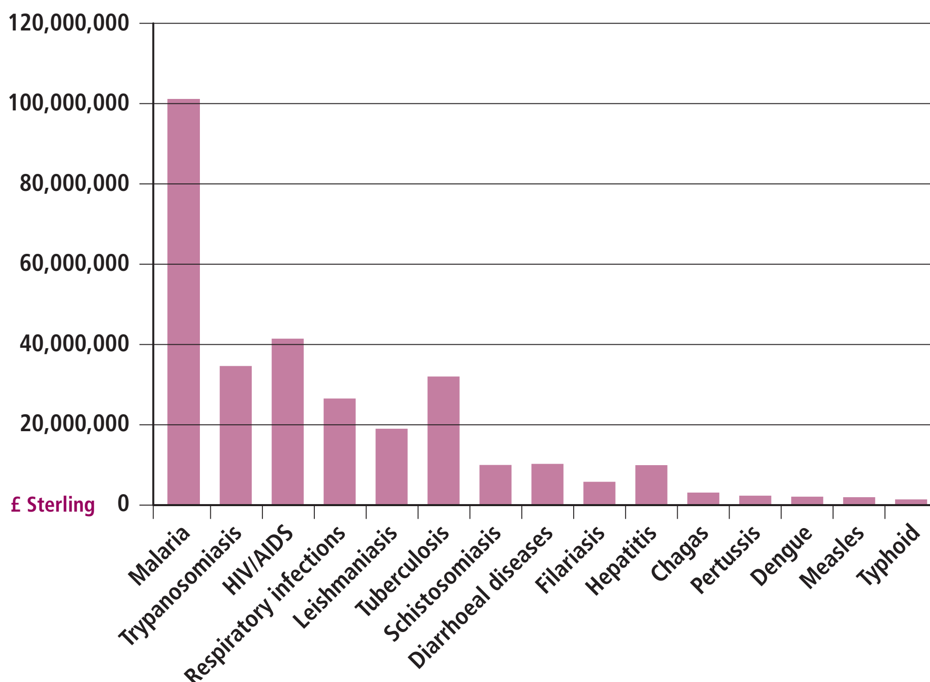
World Bank expert Davidson Gwatkin, a discussant in the plenary session on poverty and equity, observed that policy-makers often overestimate their influence. While research can document and call attention to inequalities, the real challenge for the future, he said, is finding ways to reduce – and not simply uncover – inequities.

Chapter 2: Knowledge and power

There has been a continued emphasis on the need to improve knowledge for health research, but in an editorial in *The Lancet* shortly before the Mexico City meeting another part of the problem was highlighted: "The abysmal lack of knowledge about how the health systems of the poorest countries can or should be improved," the editorial said. It called for the establishment of a new health systems research specialty, one that is supported by affluent nations and integrated within the policy and health systems of less developed nations. The specialty should focus, it said, on narrowing the know/do gap and creating a culture where policy and practice derive from evidence. "The specialty should also draw on what useful research has already been done in other disciplines, such as in the social, behavioural and organizational sciences." These themes echoed through the meetings in Mexico City.

Basic research has no value for health unless it is translated to human gain, began **Mark Walport**, Director of the Wellcome Trust, in the opening plenary on global perspectives. The mission of the Wellcome Trust is "to foster and promote research with the aim of improving human and animal health." Its first objective is to enhance the knowledge base.

Illustration 7. **Wellcome Trust expenditure in tropical medicine research 1999-2002 (~£300 million)**



Presented by Mark Walport in "Wellcome Trust and the Millennium Development Goals"

The Trust's huge malaria expenditure of nearly £100 million between 1999-2002 demonstrates one effort to deliver on MDG 6, starting in the community, proceeding to research and continuing to development of policy, practice and products to deal with disease. As one of the world's largest medical research charities, the Wellcome Trust supports more than 5000 researchers at 400 locations in 42 countries. In 2003 the Trust launched a new division, funding university and strategic translation awards focused on technology transfer.

Walport described Wellcome Trust Centres in Vietnam and Malawi and offered the Africa Centre in KwaZulu Natal in South Africa as an example of a community-based approach to understanding the long-term impact of the HIV/AIDS epidemic. The Trust made 193 tropical medicine training and personal awards between 1990-2002 to aid training of future leaders, and has supported clinical and field research aimed at understanding and controlling diseases in the context of the less developed countries of the world. Public-private partnerships, he said, will get the new drugs through the pipeline. He also noted that if local people don't have some of the responsibility for the funding, they don't feel they own it.

The advantages that foundations have in global health research, Walport explained, are that they can be independent, apolitical, take a long-term view and be good partners for governments, universities, health departments, NGOs and local communities.

"What foundations can't do is substitute for good government," he added. They also cannot enter into open-ended funding commitments, work without financial commitment from other partners or work without consent.

Research can offer insight into the consequences of population change and its impact on health in resource-poor countries, he explained. It can provide a reliable evidence base to support policy- and decision-making on the best use of scarce health-care resources. But he added that research agencies must avoid imposing a "ridiculous burden of regulation" or believing that one size fits all when it comes to solutions. He believes foundations and agencies have a responsibility to identify and fund the best researchers and the best science, that which addresses the most significant questions through the best methods.

Alan Bernstein, President of the Canadian Institutes of Health Research (CIHR), pointed out how well positioned his country is to contribute the knowledge needed to improve the health of populations and to strengthen health systems. "We have consciously decided to take our gifts of history and geography to develop a wider, global sense of community and citizenry," he said. Canada, he added, has a broad-based and recognized research community that is linked to strategic networks, a federal government committed to investments in science, and a foreign policy agenda that promotes partnership. He quoted Canadian Prime Minister Paul Martin: "We are a knowledge-rich country. We must apply more of our research and science to help address the most pressing problems of developing countries."

"It is my opinion and the opinion of many others that knowledge is very important," Bernstein said, "yet what may be more important is how this knowledge is used – scientific evidence should lead to policy and practice, and that is why we are here today." He called attention to the WHO report *Knowledge for Better Health* and cited three of its key points that entrenched in the foundation of the CIHR:

1. Every country should have a national health research system that focuses its energies on health problems of national interest, especially those that will strengthen health systems.
2. Biomedical discoveries cannot improve people's health without research to find out how to apply them.
3. Health systems must interact with health research systems to generate and use relevant knowledge for their own improvement.

Specifically, CIHR's approach to health research includes a problem-based, multidisciplinary and networked approach. Strategic approaches must be built on scientific excellence and, he emphasized, bridge "the gap between what we know and what we do." Science and research coupled with knowledge translation is the best way forward, he said.

"At CIHR, we have created environments that bring together researchers, policy-makers, health-care professionals, government, private sector and the public. Each team defines the research agenda and follows through with its application into policy and practice – basically the knowledge creators and the knowledge users come together facilitating the use of this knowledge."

He described Canada's Global Health Research Initiative established as a result of growing concerns over the health status of less developed countries. It represents a partnership between Canada's development agencies, its health research agency and the federal department of health. This multi-partnered initiative is aimed at developing practical solutions for the health and health-care problems of the developing world. Many of these global solutions will also provide valuable information on how to address these issues in Canada. Examples include providing high quality primary care for controlling epidemic diseases, such as HIV/AIDS, and preventative programming to reduce sexually transmitted diseases.

Through Canada's experience with Severe Acute Respiratory Syndrome (SARS), Bernstein said, the Canadian public has become more aware of health threats and issues in other countries. "Understanding these 'upstream' forces and their health impacts on vulnerable populations in low-, middle- and high-income countries is critical to optimizing the future health of Canadians and all global citizens."

Bernstein stressed that the importance of better understanding North/South partnerships and how to target them. Access to research information must also be improved, not only within a single country "but also on a global level between countries." he said. He strongly endorsed international clinical trials registration to share knowledge and increase public confidence in science.

Illustration 8.

Clinical Trials Registration

"(Clinical trials) are one of the main sources of medical knowledge, yet information about these trials is difficult to find... Information is even more difficult to find about neglected diseases that disproportionately affect poor and marginalized populations."

Press Release, WHO/23

- **July, 04:** CIHR announces that all CIHR funded RCTs register in an international registry (ISRCTN).
- **September, 04:** International Committee of Medical Journal Editors requires trial registration as condition of publication.
- **October, 04:** Cochrane Colloquium in Ottawa issue "Ottawa statement", a proposal for international registration of human trials at inception.

Presented by Alan Bernstein in "Canada's Global Health Research Initiative: A Partnership in Response to the Challenges of Global Health"

"Canada has an opportunity and responsibility to help close the gap in health research capacity between high- and low-income countries," he concluded. "If the world seriously addresses the major causes of mortality and poor health in the developing world, we might well envision dramatic reductions in premature mortality and a better future for humanity."

Harvey Fineberg, President of the US Institute of Medicine, grounded the discussion with a very practical point on health research: it should be used not only to discover new things but also to find better ways to use what is known. The second part of this aim is relatively under-invested, he said, but it holds great promise. Using the great success of the McDonald's fast food chain as an example, he said that the genius of its founder, Ray Kroc, was not in the invention of the hamburger but in the standardized ability to deliver it simply and efficiently. However, Fineberg suggested the equation should be read both ways: "We also have to move from action to knowledge."

He endorsed transparency in research in the regulation of health trials, and the public's access to the results of studies and trials. "It is not a matter of academic freedom to convey the results but a matter of public right to know," he said, adding that there has been a "dramatic accumulation" of registries of clinical trials by the American Medical Association, Canadian Institutes of Health Research and others.

Fineberg praised television, radio, print and Internet attempts to raise the profile of health research and its social impact, thereby improving public understanding of health research to assure an ongoing commitment of resources. If the conference in Mexico could identify the core needs of health research, if it could ensure capacity building, then it would promote the cause of global health, he said.

Illustration 9.

Why care about the role of research?

"Science is both a collection of ideological beliefs and an agency for liberation. As an agency for liberation, it substitutes democracy for political and religious authority.
Demanding evidence for statements of fact and providing criteria to test the evidence, it gives us a way to distinguish between what is true and what powerful people might wish to convince us is true."

Tesh SN., Hidden Arguments: Political Ideology & Disease Prevention Policy. London: Rutgers University Press. 1989. p. 167

Presented by Jonathan Lomas in "It Takes Two to Tango: The Importance of Joint Knowledge Production for Research Use"

Managers and policy-makers, not just clinicians, save or harm lives, declared **Professor Jonathan Lomas**, Executive Director of the Canadian Health Services Research Foundation. That is one reason to care about health systems research, he added, another is because research evidence helps build consensus, a primary objective of the health system manager or policy-maker.

He illustrated the difference managers with teamwork training can make: after emergency-room staff in nine southern US hospitals received teamwork training, clinical error rates were reduced from 30.9% to 4.4% over a 12-month period.

He traced the history of the increased use of knowledge and research from the passive 1960s ("an acutely naïve period") when journals primarily were used as a source of knowledge, to the 1970s, when an era he called "push" began, with a strategy for dissemination largely based on practice. He described the 1990s as a "push harder" era, with implementation through diffusion by journals and through high-tech routes. But after 30 years of research in this area, Lomas said, "we still lack a robust, evidence base to inform decisions about strategies to promote the introduction of guidelines or other evidence-based measures into practice."

The "push era" approaches were driven by the research world, while the new era of "partner and pull" approaches are driven by the health system, with ongoing linkage and exchange, he explained.

Lomas used scurvy to illustrate the importance of linkage between policy-makers and researchers (See S.R. Brown *Scurvy*, Thomas Allen Publishers, 2003) :

In 1601, James Lancaster showed that lemon juice eliminated scurvy among sailors but it wasn't until 1747 that James Lind's research confirmed that finding. It was only in 1795, 194 years after the discovery, that the British Navy first used citrus juice for its sailors. In 1854, 253 years after the discovery of the treatment for scurvy, the British Board of Trade began to use citrus for sailors in the merchant navy.

Lomas suggested reasons for the long know/do gap:

- there was poor institutional memory and communication;
- it was contrary to vested interests (of the military) to implement the information;
- the concept was a major challenge to the accepted scientific wisdom of the time;
- there were simply inadequate links between those doing the research and those who could implement the results.

The key to research use, Lomas believes, lies in interpersonal links that are spread through the life of a study and which establish collaboration. Two-way communication between researchers and decision-makers not only facilitates the use of research but also builds trust.

"How much research that we do actually focuses on health equity?" asked **Gita Sen**, Sir Ratan Tata Professor and Chairperson of the Centre for Public Policy, Indian Institute of Management at Bangalore. Despite decades of studies, she said, there is an absence of broad research on women's health beyond reproduction, and little attention paid to multiple effects of poverty, gender, race and caste. "We should look carefully at what is being done," she advised. At one end of the spectrum, she suggested, is the research done on poor, African, black women and on the other end is a large body of information on rich, Anglo-Saxon white men.

What research gets done is not a simple matter of researchers' choice, Sen said, and asked: "What determines if research generates winds of change or if voices are left crying in the wilderness?" She suggested that the public sector needs to enter more partnerships with the private sector and develop research beyond that which is profit-oriented.

"We need gender to get mainstreamed to keep it from getting marginalized," she continued. But she warned of the possibility that gender sometimes gets "mainstreamed out of existence – it is everywhere and nowhere."

The field of gender and health equity is still largely the province of women, Sen said, and that should not be the case in science. Young women researchers, more often than their male colleagues, face the limitations of money and access to information, she added. On the whole, Sen said, institutional politics of publication must also be addressed and improved.

Sen viewed the other side of the equity coin as power: "the technical, risky and all-pervasive" element that governs the lives of most humans, including health researchers. The dynamics of power, she said, are profound, sometimes subtle, and work at many levels – from door-to-door politics to the sophisticated application of technology. She cited the case in which a researcher arrives in a village with informed consent forms without building rapport or trust in the community "and so nothing happens." She also cautioned that "informed consent" may be no more than a formality and should not be considered a guarantee against abuse.

Power comes into play not only between researchers and the researched, but also among the researchers themselves and in the translation of research into policy, Sen added. While abuse of power is usually recognized by those affected, she said that it is not acknowledged or buffered against at the institutional level.

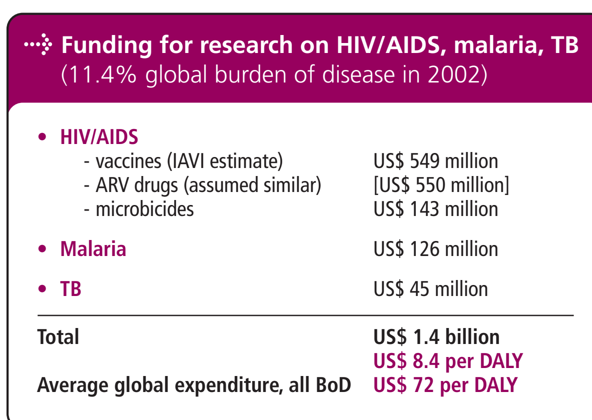
The question of political will

The subject of political will was raised repeatedly at the Mexico City meeting, beginning with the opening remarks by Ilona Kickbusch calling for a binding global agreement on health.

Andres de Francisco, Deputy Executive Director of the Global Forum for Health Research, presented figures on research investments for HIV/AIDS, malaria and tuberculosis. The order of magnitude of research investments appears to be around US$1.4 billion for 2002: about US$1.2 billion for HIV/AIDS vaccines, anti-retroviral drugs and microbicides, US$45 million for TB and US$126 million for malaria. So for these three diseases, which collectively accounted for almost 12% of the global burden of disease in 2002, the average R&D spending was about US$8.4 per DALY. This only amounts to less than one tenth of the average US$73 per DALY spent globally on all health research in 2002.

The complex world epidemiological picture makes it extremely difficult to measure the size of the "10/90 gap" quantitatively at the global level. However "the relationship between investments and disease burden has been used as a symbol of a gross inequity in health research funding," de Francisco said. "Priority setting should ideally be evidence driven, and tracking priorities and funds for health research allow the identification of research areas which are under performing. Investments in research on these three diseases clearly show a failure, possibly reflecting a lack of political will."

Illustration 10.



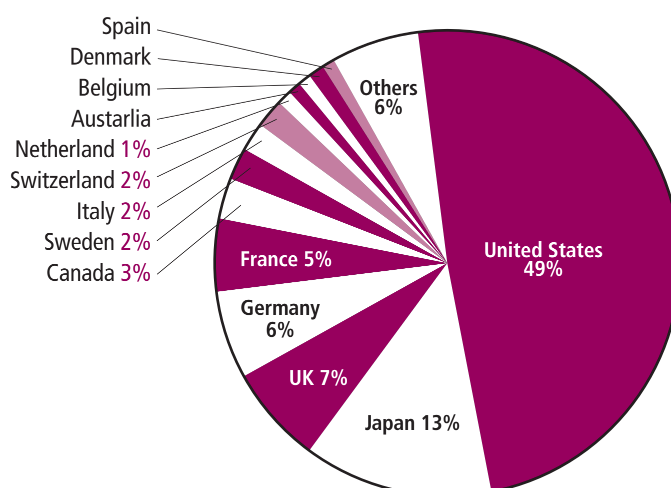
Funding for research on HIV/AIDS, malaria, TB
(11.4% global burden of disease in 2002)

• **HIV/AIDS**	
- vaccines (IAVI estimate)	US$ 549 million
- ARV drugs (assumed similar)	[US$ 550 million]
- microbicides	US$ 143 million
• **Malaria**	US$ 126 million
• **TB**	US$ 45 million
Total	**US$ 1.4 billion**
	US$ 8.4 per DALY
Average global expenditure, all BoD	**US$ 72 per DALY**

Presented by Andres de Francisco "Financial Flows, Priority Setting and the "10/90 gap" in Health Research"

Mary Anne Burke, Health Analyst/Statistician, Global Forum for Health Research, explained that the US $106 billion spent for total health research and development comprised 44% from the private sector, 48% from the public sector, and 8% from the private not-for-profit sector. But investment, she showed, is dominated by a few countries, foremost of which is the United States, with 49% of all health R & D expenditures. Japan contributed 13%, the UK 7%, Germany 6% and France 5%. She pointed out that contributions from low- and middle-income countries were largely unknown or unaccounted for, but most of the increase from the private sector clearly came from high-income countries.

Illustration 11. **Global distribution of public and private health R&D exenditures 2001**



Presented by Mary Ann Burke in "Monitoring Financial Flows for Health Research 2004"
Source: Monitoring Financial Flows for Health Research 2004, Global Forum for Health Research

"Most of the spending done by high-income countries in high-income countries was in generating products tailored to health-care markets of high-income countries," she said. A small portion was carried out by low- and middle-income countries and an even smaller portion was funded by high-income countries but carried out in and for the benefit of low- and middle-income countries. Burke said that even a small shift in budgets of low- and middle-income countries to allocate more money for health research that addresses urgent health needs of their populations could make a big difference.

"It's a question of political will and priority-setting," she said. "For example, in the 1990s India's health R&D budget could have been more than quadrupled if money being invested in space R&D had been shifted to investments in health R&D."

Srinath Reddy, Chair of the Department of Cardiology at the All India Institute of Medical Sciences, speaking about the role of policy interventions in chronic disease, observed simply: "Medicine is politics on a grand scale." He said health policy must be scientifically credible, not made in isolation; he emphasized the importance of public-private cooperation. India, he said, is a prime example of a population moving from low to high risk in terms of cardiovascular disease. It currently leads the list of countries in terms of years of life lost due to CVD and by 2020 is projected to have a CVD rate 94% higher than the US in terms of lives lost.

In another very different area, **Rochelle Sobel** explained that the "good news" about road crashes is that they are predictable and preventable. Political will and commitment to road safety are what are needed for a national road safety plan. The research community can provide the data and demonstrate interventions, she said, but it takes political will to implement them.

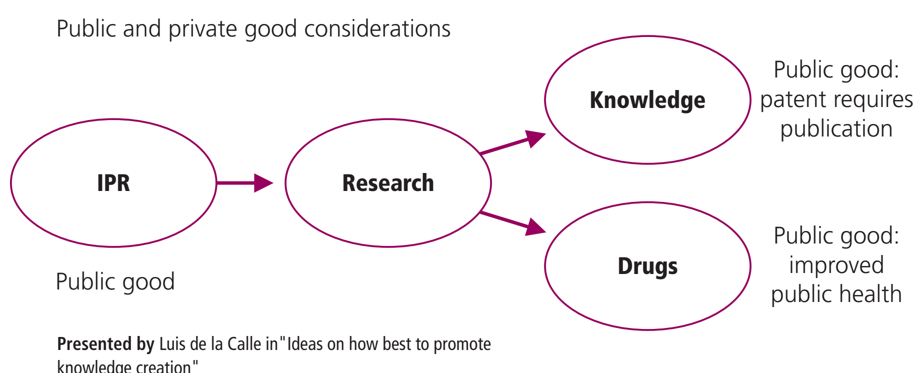
Ronald Labonté, Canada Research Chair, Institute of Population Health, Canada, told a session on financial flows and priority setting that while more research is needed, the greatest threat to global health equity is the disparity in power. "All diseases have two causes, pathological and political," he said, "and global health research is unavoidably political." Speaking about the G8 group of industrialized nations, he said the health systems' contributions from these nations, which account for about half of the world's economic output and export, amount to only 4% to 8% of total official development assistance. "Political will at the top only rises when demanded from below," he observed. The problems are not insurmountable, he continued, they are political.

He was critical of G8 and World Bank programmes for developing countries and called on the G8 to cancel the Third World's debt and help establish a Global Health Compact "for the greater global good."

Access to knowledge

In a parallel session, **Luis de la Calle**, a member of the Mexican Commission on Macroeconomics and Health, described knowledge that is especially crucial to the health sector as one of the best examples of "pure public good." He pointed out, however, that the creation of new knowledge might require large fixed costs that can create obstacles to technological progress in the absence of regulation. Without intellectual property protection, incentives to conduct research are diminished because costs associated with research cannot be recovered.

Illustration 12. **Relationship between knowledge and intellectual property rights**



Presented by Luis de la Calle in "Ideas on how best to promote knowledge creation"

De la Calle described the "tension" that exists between the protection of intellectual property rights and the creation of a temporary monopoly that results in higher prices than would be available in a competitive situation. It is of critical importance, he said, that the government weigh the role of knowledge in curing illnesses and prolonging or improving quality of life, keeping in mind that the optimal level of regulation is that which maximizes the quantity of knowledge utilized in the market. He referred to recent amendments Mexico had made to its laws to strengthen intellectual property rights (IPR) and the incentive to conduct scientific research (*el Reglamento de Insumos para la Salud y el Reglamento de la Ley de la Propiedad Industrial*).

While it is important to protect a product produced through scientific research to make it a business proposition worth pursuing, the optimal level of intellectual property protection in a given society is up for debate, de la Calle admitted.

This topic is one of the targets under the MDG 8, to develop a global partnership for development: "In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries."

De la Calle made two points: the optimum level of protection varies by product and is not the same for countries at different levels of development.

The countries that reap the great benefits from intellectual property protection, he said, are those that are farthest along in terms of economic development. Conversely, the lower the level of development, the less interest a country will have in protecting intellectual property rights.

He made several suggestions on how to encourage knowledge creation while ensuring that treatment costs are affordable to the consumer. These include reducing costs of developing new drugs by making the regulatory framework more efficient, government subsidies for clinical tests and reducing legal costs.

De la Calle proposed another mechanism to promote research and encourage innovation: open-source, where research findings are shared on the Internet. This requires the donations and participation of researchers who volunteer their time and whose discoveries are not patented. It also allows awarding drug development contracts to the company that offers the lowest price, resulting in lower prices for the users. "If it were to be successful it would contribute substantially to improving the quality of life of the world's poorest populations," he said.

From a grassroots perspective ...

Ravi Narayan of the People's Health Movement provided a civil society perspective on the huge imbalance between the small percentage of global health research resources and the health problems of the majority of the world's people that they address. He noted that in India today, health care is the second basic cost for people after food and water.

A major challenge for researchers is to decide what evidence for health problems is crucial and significant, Narayan said, adding that social, economic, cultural and political factors are not given the importance that they are due. Researchers are trained to consider biomedical factors: clinical, epidemiological and techno-managerial. He suggested that "people-oriented" perceptions be substituted for these "professional" perceptions in a paradigm shift that he believes is the single most conceptual challenge to address the Millennium Development Goals and the "10/90 gap."

In a "plea on behalf of the people for a sense of balance", Narayan said social determinants like poverty, gender bias, conflict, stigma and social exclusion must be considered in assessing evidence on disease.

"Whose evidence are you taking?" he asked. "The governments', the academics', the industries', the NGOs'? – or also, the community, peoples' organizations, the socially excluded?

"Who decides on the implications of funding? The government? The industry and market forces? International funding agencies? The World Bank and WTO and their alliances? Or also, the people, peoples' organizations and peoples' movements?"

He cited a case study on the use of bednets in the Mandla community, made during a period when 1200 of the 2000 people surveyed were outside the bednets at the peak mosquito biting time. Those who were inside, he said, were either too tired to use the nets or did not understand how to use them. "The people are sharing evidence with the malaria programme bednet researchers about poverty, survival, marginalization and other social determinants," Narayan explained.

"What is our interpretation?" he asked. " Should it be social marketing and health promotion of bednets for malaria to keep them inside – or poverty alleviation in the context of sustainable development and responsive primary health care to make the programme more accessible, relevant and affordable?"

Illustration 13.

The MDGs and the 10/90 gap: a PHM perspective

Approach	Biomedical deterministic research	Participatory social/ community research
Focus	Individual	Community
Dimensions	Physical/pathological	Psycho-social, cultural, economic, political
Technology	Drugs/vaccines	Education and social processess
Type of service	Providing/dependence creating/social marketing	Enabling/empowering autonomy building
Link with people	Patient as passive beneficiary	Community as active participant
Research	Molecular biology Pharmaco-therapeutics Clinical epidemiology	Socio-epidemiology Social determinants Health systems Social policy

Presented by Ravi Narayan in "Health Research: MDGs and the 10/90 Gap"

The shift in health research that Narayan envisions would move the focus from the individual to the community, towards more consideration of the social, economic and political factors and with emphasis on the educational and social processes. "A social vaccine is closer than the AIDS vaccine," Narayan concluded. The People's Health Movement should be a force to "pull along" the funders of health research as well as those who implement health care.

Chapter 3: Maternal and child health

Millennium Development Goal 3: Promote gender equality and empower women; eliminate gender disparity in primary and secondary education, preferably by 2005, and at all levels of education no later than 2015.

Millennium Development Goal 4: Reduce child mortality; reduce by two-thirds, between 1990 and 2015, the under-five mortality rate.

Millennium Development Goal 5: Improve maternal health; reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio.

Disparities between the developed and developing world are starkly demonstrated in global maternal and child mortality statistics; the numbers from sub-Saharan Africa, when available, are the most startling. The rate of women dying in childbirth or pregnancy there is one in 16, compared with one in 3,500 in North America. More than half a million women die in pregnancy or childbirth each year, 99% of them in the developing world. Over 11 million children under the age of five die each year, most from preventable diseases and most in Africa. In sub-Saharan Africa the under-five mortality is estimated at 174 per 1,000 births, more than 20 times the rate in developed countries (UN Millennium Campaign Forum).

The health of mother and child are inextricably linked even though they are considered in separate Millennium Development Goals. Both of these goals are dependent upon improving the health of women who bear and care for the children and thus they are closely linked to the suggested MDG-plus goal of improving sexual and reproductive health.

Adrienne Germain, President of the International Women's Health Coalition, opened the Forum 8 plenary session on maternal and child health by recalling that 179 nations agreed at the UN International Conference on Population and Development in Cairo in 1994 on the foundation of the MDGs, central to which, she believes, is protection of human rights. Reproductive rights are part of human rights, she said. MDG 3, promoting gender equality and empowering women, was clearly designed, she continued, for saving women's lives.

However, except for family planning, Germain said, the database on all other aspects of sexual and reproductive health is "woefully inadequate" to persuade policy-makers to prioritize investment on economic grounds. There is a vital role here for research, Germain emphasized, and it needs to be incorporated into the MDG globalization plan. "You won't get these four MDGs without research," she warned.

Priority setting is where power comes in, she explained, because "children and women are precisely the ones who are not empowered."

Germain sees a constant regression to discussion of mortality, rather than morbidity, in health issues and thinks communicable disease and maternal health will be neglected as a result. Mothers don't just give birth, she insisted, they need to keep their children healthy and they can't do that if they are gravely ill or die.

Germain pointed to another dramatic development: the feminization of the HIV/AIDS epidemic. "It's inexcusable," she said, because it could have been prevented. Recent statistics show that while 90% of AIDS transmissions in Thailand a decade ago occurred between sex workers and their clients, now 50% of the new infections are occurring between spouses. According to **Florence Baingana**, Senior Health Specialist with the World Bank, the highest AIDS risk factor for a woman in Africa now is being married.

The urgently needed solution, especially in developing countries, several speakers said, is gender equality, brought about by a political will that will educate women, assure their rights under the law, and empower them socially and economically.

Francisco Ferreira Songane, Minister of Health of Mozambique, addressed the high maternal mortality in his country, which he said is mostly due to conditions treatable at the level of public health care. He quoted several alarming statistics: in 1997 the overall maternal mortality rate (MMR) was very high in Mozambique, at 975/100,000 compared with a high institutional MMR of 181/100,000 – only 36% to 44% of deliveries were in institutions. A maternal death review by 90 doctors between 1997 and 1998 showed that over 80% of the institutional maternal deaths were due to sepsis, haemorrhage and rupture of the uterus. Deaths were mostly due to conditions treatable at primary health care level, including delays in seeking and obtaining adequate care. Thirty-four percent of the women who died had received inadequate treatment. Only 40% to 60% of the population has access to health services; in rural areas it takes more than an hour for 70% of women to reach a health facility. In 2003, only a third of hospitals (45 facilities) offered acceptable surgical services.

The review focused on the need to upgrade physical structures, purchase a regular supply of essential drugs and equipment, deploy assistant medical specialists trained to perform emergency obstetric operations in rural areas and establish a system of radio communication and transport for patients. By 2003, Songane said, more than 500 people had been trained in the new emergency obstetrical skills and had been deployed; obstetric drugs had been included on a "vital list" to ensure their distribution; and referral systems had been staffed with personnel trained in emergency obstetric surgery, 34 of whom had been deployed at rural hospitals.

However, the percentage of institutional deliveries remained low, about 45%, and institutional MMR remained at the same levels. Caesarean sections still accounted for less than 2% of deliveries, well below the norm of 5% to 15%. In addition, a high percentage of institutional maternal deaths continued to go unreported and more than 47% of births still took place in unknown locations.

Songane said two factors had played important roles in the new strategy: substantial external funding had been earmarked for the initiative and senior ministry of health officials had participated in the local studies, becoming strong advocates of the new approach.

He criticized policies determined at the global and national levels that are unconcerned with local issues and are oriented top-down. While the effort in training and supplying equipment and drugs in recent years has been substantial, he said the results achieved "seem a little behind the resources devoted." Research funding was not directed to operational issues, he added.

Why was the revised strategy not effective? Songane said that most research was self-fulfilling and not linked to policy-making, operational research did not contribute to the decision-making process, and no attempt had been made to analyse the mismanagement of obstetric conditions. No clearly defined research agenda existed to address issues such as performance, resistance to change and cultural patterns, he said. Costing exercises, which are essential to maintaining emergency obstetrical services, are needed along with resource allocation discussions that are driven by evidence.

If the maternal health MDG is to be attained, good sexual and reproductive health services have to be available, the minister emphasized.

"Long-term commitment is crucial," both from national governments and the donor community, he said.

Research on the front lines is the key, the minister concluded, and he suggested that research trust funds be set up to guarantee research activities without interruption.

Presentations from other African countries pointed to high maternal mortality rates but in many cases there was no data to show just how high. **Lola Dare**, Executive Secretary of the African Council for Sustainable Health Development, estimated that Nigeria had a maternal mortality rate of between 2.8% to 6% but figures are unreliable. She described the health system "in fragments" in Nigeria, where 2% of the population is described as rich, 27% as middle class and the rest either poor or absolutely poor.

James Nyikal, Director of Medical Services in Kenya, did have statistics and they were bleak. In Kenya, with a population of 32 million and where 56% of the population live on less than $1 a day, maternal mortality rate is 414/100,000 live births and child mortality is 74/1,000 live births. There is a human resources crisis in the country, he said, which includes a need for 4,000 nurses. He also spoke of the lack of reliable information and the "rural crisis" in much of the country where people cannot afford health care.

In Latin America the risk of dying for a woman giving birth is 1 in 130, compared to Canada where it is 1 in 7,750 (PAHO figures) according to a report by **Helena Hofbauer** and **Daniela Diaz** of FUNDAR, Center for Analysis and Research in Mexico. Maternal mortality is recognized at the international level as an indicator of development mainly because it is avoidable, the report says. The prevention of the death of women due to pregnancy, birth or postpartum complications depends directly on the coverage and quality of health services. In Mexico – and in many other countries – maternal mortality is highest among the populations that lack social security protection (the unemployed) and live in conditions of exclusion and extreme poverty. In 2000, 67% of Mexico's registered maternal deaths occurred in the southern states where poverty and unemployment are the highest. Of 1310 registered deaths that year, 65% were in a public hospital, 12% in a private hospital and 17% at home.

The report recognized factors needed to reduce maternal mortality:

- access to skilled medical care
- timely transfer to health centres with capability to handle obstetric emergency
- availability of blood transfusions and 24-hour attention.

In a later presentation by **Ana Langer**, Regional Director for Latin American and Caribbean Countries of the Population Council, another cause of maternal mortality was added: abortion, which accounts for 25% of maternal mortality in Latin America and the Caribbean, or 12% globally.

Hofbauer reported that though the Mexican government in 1994 had committed to the reduction of maternal mortality by half in the period 1990-2000, that goal had not been achieved. Mexico then signed the Millennium Declaration to reduce by three-quarters the MMR between 1990 and 2015, with the first evaluation of its progress due in 2005. At the national level, the Ministry of Health established a goal of reducing MMR by 35% from 2000 to 2006 in its programme Arranque Parejo en la Vida (APV), which stressed monitoring of women during pregnancy. However, Hofbauer reported that APV had been hampered by its dependence on the private sector to cover basic needs to function and by budgetary problems. Funds are drawn from private and public areas, and federal, state and local levels.

The report states: "If there is no budget allocated to a concrete policy that can avoid maternal death, the government is failing to implement the actions needed to realize its commitments."

While APV has resources for follow-ups during pregnancy, particularly of women at high risk, the report says there is no emergency obstetric care included in APV.

The report shows the inconsistency of allocation of resources for the APV programme: its funds came from within the Federal Ministry of Health budget in 2002, were distributed from decentralized funds the following year; in 2004, they were incorporated into the Social Protection System, which offers medical insurance to the unemployed, in a way that made them unidentifiable separately.

Hofbauer concluded that Mexico's APV programme cannot resolve the problem of maternal mortality because of the weaknesses of its design, its lack of resources and because it does not include hiring additional health service workers. It also does not give attention to emergency situations or transportation of patients to medical institutions.

Her report offers a final perspective: "The lack of transparency regarding budget and programmatic information easily translates into lack of accountability. It is the role of independent researchers and civil society to monitor governments and demand that the reduction of maternal mortality has a thorough expression in the resources our governments spend."

Maternal morbidity: its interface with other diseases

"Addressing maternal morbidity relates not only to the MDG on maternal health but to most of the other goals," observed **Kirti Iyengar**, Coordinator for Reproductive Health of the Indian NGO Action Research and Training for Health. She estimated that the 30 million women who suffer pregnancy and childbirth-related ill health or death represent 14.5% of the global burden of disease (BOD).

Illustration 14.

MDGs and maternal morbidity

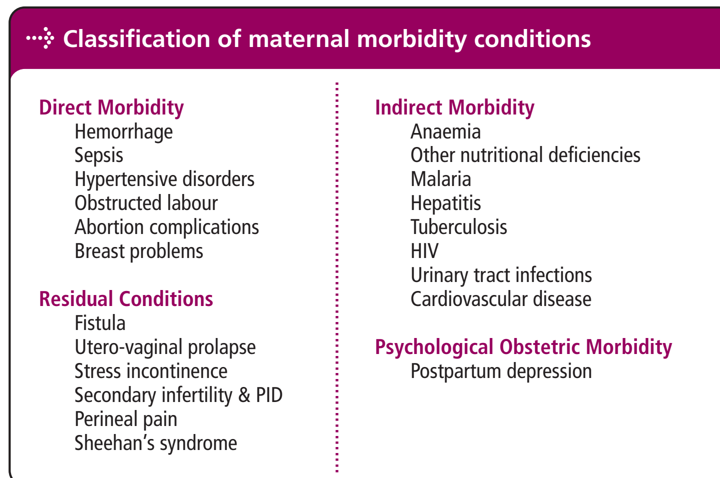
- Thirty million women suffer pregnancy and childbirth related ill health or death or 14.5% of global burden of disease
- Addressing maternal morbidity relates not only to the MDG on maternal health, but also to most other goals:
  - Reducing maternal morbidity would reduce perinatal and neonatal mortality
  - Increased access to primary education and gender equality would improve women's health status and health-seeking behaviour
  - Chronic and residual morbidities impede women's economic productivity and exacerbate poverty
  - Reducing the burden of HIV/AIDS, malaria and other communicable diseases would reduce indirect maternal morbidity

Presented by Kirti Iyengar in "Research Needs in Maternal Morbidity"

She charged that the lack of rigorous research on maternal morbidity, and studies that are not reliable for estimating prevalence of maternal morbidity in the population, result in a skewed perception of incidence of morbidity. There have also been huge gaps in understanding maternal morbidity, she said, so indirect causes (such as anaemia, other nutritional deficiencies, malaria, hepatitis, tuberculosis, HIV) may be far higher than the estimated 20%. "Fifteen million women annually develop long-term pregnancy-related disabilities, yet little is known about them," she explained. In addition, psychological, social and economic consequences have not received much attention.

Requirements for setting up a framework for identifying research needs on maternal morbidity include knowing the burden of the problem, its determinants and the effective options for intervention, Iyengar stated. The classification of maternal morbidity conditions should include direct and indirect causes as well as residual conditions.

Illustration 15.



Presented by Kirti Iyengar in "Research Needs in Maternal Morbidity"

Tuberculosis is the leading cause of death among reproductive-age women, she pointed out, but 20% to 67% of pregnant women with TB don't have the typical symptoms of the disease. There is little data on the incidence of TB among pregnant women and its contribution to maternal morbidity. There is also little information about the effect of two major drugs used to treat TB and their safety during pregnancy. Drug-resistant TB has become more common because of HIV, but most second-line drugs are contra-indicated during pregnancy.

In some areas of the world, malaria counts for 18% to 23% of maternal deaths. Pregnant women are more susceptible to *P. falciparum* infection, the severe type of malaria that is also likely to infect younger women and those who are HIV positive. While WHO recommends intermittent preventive treatment with specific medication during pregnancy for two other types of malaria, the feasibility of this type of treatment and the safety of newer drugs for pregnant women still need to be tested. Even the safety in pregnancy of artemisinin, recommended for severe and resistant cases of malaria, has not been established.

Viral hepatitis, common in developing countries, accounts for about 20% of fatalities of women during pregnancy but no simple screening tests for it are available at primary care levels. Even screening tests for anaemia, a major contributor to maternal deaths, are not widely available and, if anaemia is suspected, there is little opportunity for safe blood donation.

HIV is among the most likely diseases to contribute to both direct and indirect causes of maternal mortality and morbidity by increasing susceptibility to infection. Here, also, there is a great lack of knowledge: its prevalence is difficult to quantify because the HIV status of the pregnant woman is not always known. It is also not known whether testing is beneficial or even appropriate.

Iyengar outlined a long list of research needs on maternal morbidity and an equally long list of health concerns for women who have just given birth. There is little data on many of them and while some, like postnatal depression, have been studied in the developed world, they are not well known in developing countries.

Most information on maternal morbidity has emerged from mortality studies; residual chronic morbidity and less serious conditions, especially in developing countries, have not been targets of research and interventions. There is a great need, Iyengar said, for research to focus on elements of the developing world – early and frequent childbearing, high fertility, nutrition deficiencies – that are extremely common in order to see how they influence maternal morbidity.

Rounaq Jahan, Senior Research Scholar at the School of International and Public Affairs, Columbia University, USA, in the discussion following presentations on maternal and child health, called attention to the obstacles to implementation of the known interventions. She cited lack of funds, weak health systems, the lack of a voice for women and children, but most of all, a lack of political will. There has been success in some fields, mainly due to pressure from women's organizations, Jahan said, but not in others.

She referred to Bangladesh, where civil society has played an active role, and said more public-private NGO partnerships are needed elsewhere, although she noted that many governments are reluctant to partner with NGOs. She suggested that the delivery capacities of each sector must be assessed, and funding must be evaluated to determine whether more – or different – funding is needed.

Child deaths

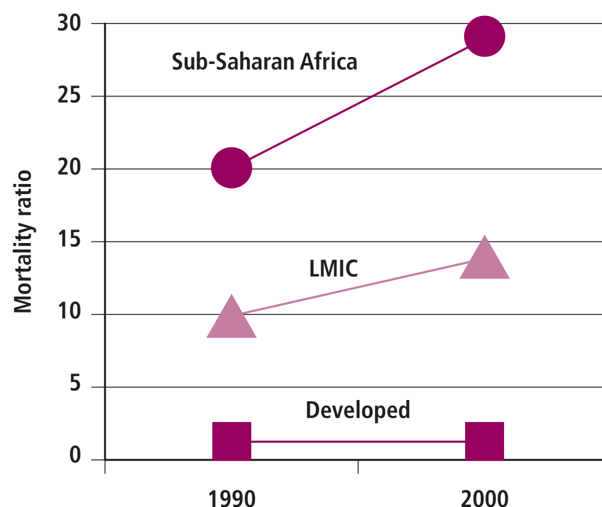
Over 11 million children under the age of five die each year; health experts generally agree that more than 60% of these deaths are preventable. **Professor Cesar Victora** of the Universidade Federal de Pelotas in Brazil suggested that research efforts must be re-prioritized, with urgent delivery of existing, cost-effective child survival interventions ranked in first place.

"We have argued that child survival should be placed high in the international health and development agenda, from where it has been displaced by disease-specific, vertical strategies," he said.

He summarized *The Lancet'*s Child Survival Series of articles that call attention to the relative neglect of issues related to child health. The series reports that 90% of global child deaths occur in only 42 of the world's nearly 200 countries; 40% of child deaths occur in sub-Saharan Africa and 35% in South Asia. AIDS leads the list of causes of death, followed by TB and malaria. However, two causes of death that are often cited as being under control, pneumonia or diarrhoea, still account each for about one-fifth of global deaths. A small number of low-cost measures, from breastfeeding and complementary feeding to oral rehydration therapy and drugs for treating infections, could prevent death but are "appallingly low" in use. *The Lancet* series called for changes in the way health interventions were delivered and for each country to develop its own strategies.

Six million lives could be saved annually if low-cost interventions could be delivered, Victora said, but scaling up is difficult. Weak health services, hard to reach patients and inappropriate delivery channels are all problems. Research has concentrated on developing "magic bullets" against disease, he said, but has neglected providing the "magic guns" to deliver them.

Illustration 16. **Gaps between rich and poor countries are increasing**



Presented by Cesar Victora in "International Child Health Research: Are we asking the right questions?"

The gap in mortality levels between rich and poor countries has increased during the last decade – the under-five deaths in sub-Saharan Africa are greater now than they were in 1990. Victora quoted from *The Lancet* series: "Socio-economic inequities in child survival exist at every step along the path from exposure and resistance to infectious disease, through care seeking to the probability that the child will receive prompt treatment with effective therapeutic agents." Unless the special needs of the poorest are taken into account, he added, child survival strategies will have limited success.

Addressing the "10/90 gap," Victora said that even the meagre 10% of health research investments that are allocated to the diseases affecting 90% of the world's population are unfairly distributed. Less than 3% of this 10% goes for research on improving delivery of current health technologies, he added.

While efficacy studies and randomized trials to test new interventions are necessary, Victora said there is an even greater need for effectiveness evaluations and observational studies to ensure that the interventions achieve the expected impact.

Daniel Hoffman, Assistant Professor in the Department of Nutritional Science at Rutgers University, USA, reported that more than 100 million children in the world are undernourished and will have an increased risk for chronic disease when they become adults. Growth retardation *in utero* or childhood has two important consequences, he said: they increase the burden on poorly developed health systems and also have the potential for impeding economic development in poor countries. He called for a shift in priorities to study how development can proceed in the face of the double burden of acute and chronic diseases.

Hoffman said studies of children who have suffered from mild, chronic under-nutrition and who are permanently stunted show they have increased risk of metabolic diseases, including obesity. The vast majority of these children, as well as those who are underweight and suffer from wasting, are in South Asia and sub-Saharan Africa. Referring to the "foetal origins hypothesis," Hoffman said that countries that may appear to have healthy populations simply because they do not have a high prevalence of underweight or wasted children, "may actually be poised to host an unhealthy population in the very near future." He added that the situation may be worsened when a country with a large percentage of growth-retarded people experiences the "nutrition transition" that occurs when nations move from the less developed to developing status, and alter traditional diets to increase amounts of fats, sugar and salt. The result, he predicted, would be an explosion of chronic diseases.

IMCI: a test of implementation

The World Health Organization and UNICEF launched a broad, multifaceted horizontal approach to major childhood illness – Integrated Management of Childhood Illness (IMCI) strategy – in the mid-1990s in Tanzania and Uganda. By 2003, it had been adopted by over 100 countries. IMCI's concepts and implementation were discussed in both plenary and parallel sessions.

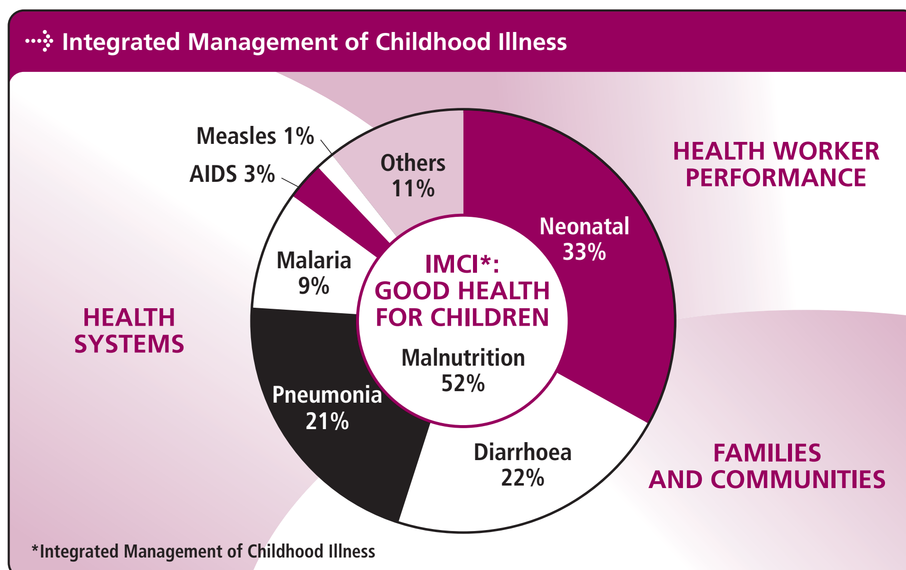
The programme, which replaces a vertical approach in individual diseases, covers the five major causes of childhood illness that are responsible for 70% of deaths: diarrhoea, pneumonia, malaria, measles and malnutrition. Unfortunately, as Victora observed, IMCI is least likely to be implemented where it is needed the most, in countries with very high child mortality, e.g. Niger and Cambodia, where the need for child survival interventions is the greatest and alternative delivery channels are urgently required.

The programme has three components:

- to improve the skills of first-level health workers through training and guidelines for prevention and management of common causes of child mortality
- to strengthen health system support
- to encourage improved practices and behaviour at household and community levels

A multi-country evaluation of IMCI effectiveness, cost and impact was begun in 1998. In Tanzania, two districts that chose to implement IMCI were compared with two districts without IMCI. Marked improvements were shown in the quality of case-management in the health facilities of those districts with IMCI, and a 13% improvement in mortality rates after two years. There was also significant improvement in stunting rates. Results in other countries are not yet available but early indications are that implementation of IMCI, when done with sufficient strength, is likely to improve the quality of case-management in health facilities. The main barriers to IMCI implementation include low utilization of health services, poor supervision, inadequate training and high staff turnover.

Illustration 17.



Presented by Cesar Victora in "International Child Health Research: Are we asking the right questions?"

Chapter 4: HIV/AIDS, malaria, TB

Millennium Development Goal 6: Combat HIV/AIDS, malaria and other diseases; have halted by 2015 and begun to reverse the spread of HIV/AIDS; have halted by 2015 and begun to reverse the incidence of malaria and other major diseases.

HIV/AIDS, malaria and tuberculosis continue to have devastating impacts on much of the world. They are considered together in Millennium Development Goal 6 – along with "other major diseases." Together and singly they have also had impacts on the other MDGs, especially MDG 1 because it is the poor who are overwhelming affected by all disease.

AIDS profoundly affects women, who now represent nearly half of the 39.4 million adults living with AIDS worldwide. In sub-Saharan Africa, women 15 to 24 years old are three times as likely to be infected as men of the same age. The "feminization of AIDS," predicted by many who have watched the spread of the pandemic, has become a reality.

HIV/AIDS killed more than 3.1 million in 2004, nearly 8,500 people a day. A total of more than 20 million people have died of AIDS since 1981. The pandemic has turned millions of children into orphans and has altered the economies of entire countries. In 2004, 4.9 million people were newly infected with the HIV virus – more than in any previous year. More than 98% of people with AIDS are in developing countries, 66% in sub-Saharan Africa. The UN reports that the pandemic is unabated in the majority of countries in sub-Saharan Africa, is reaching epidemic proportions in Eastern Europe and spreading through the general population now in southern Asia.

Professor Diane DeBell, Director of the Centre for Research in Health and Social Care at the Anglia Institute for Health and Social Care, United Kingdom, reported that across the area of Russia, Ukraine, Belarus, Moldova, Estonia, Latvia and well as central Asian countries, the spread of HIV infection has emerged so rapidly in the past four years that UNAIDS considers it a serious threat to the region's social and economic stability. The speed of infection and the virtual absence of either prevention or treatment programmes have produced a health threat of epidemic proportions, she said. In a study of HIV and government health and social care policy in Ukraine, she explained that the development of effective health and social care systems and services requires national ownership of the health agenda by the civil state.

Her report was written against an extremely difficult political background because the US$60 million Global Fund loan provided to Ukraine by the World Bank in December 2003 was quickly suspended due to "poor management." This, she said, was a reference to perceived corruption and the expectation that the funds would be used for the private benefit of those in power. She added that Ukraine is rated by Transparency International as one of the 20 most corrupt countries worldwide.

Public sector corruption directly affects those in greatest need of health care, and it also jeopardizes MDG 1, to halve the number of people living in extreme poverty by 2015. In the Ukraine the most urgent need is creation of a coherent national health and social care system. There currently is no central government health-care policy to provide services nor is there adequate investment in health systems from the state. DeBell said that Ukraine did have the medical, scientific and academic expertise the country needed but the sectors are not working together effectively.

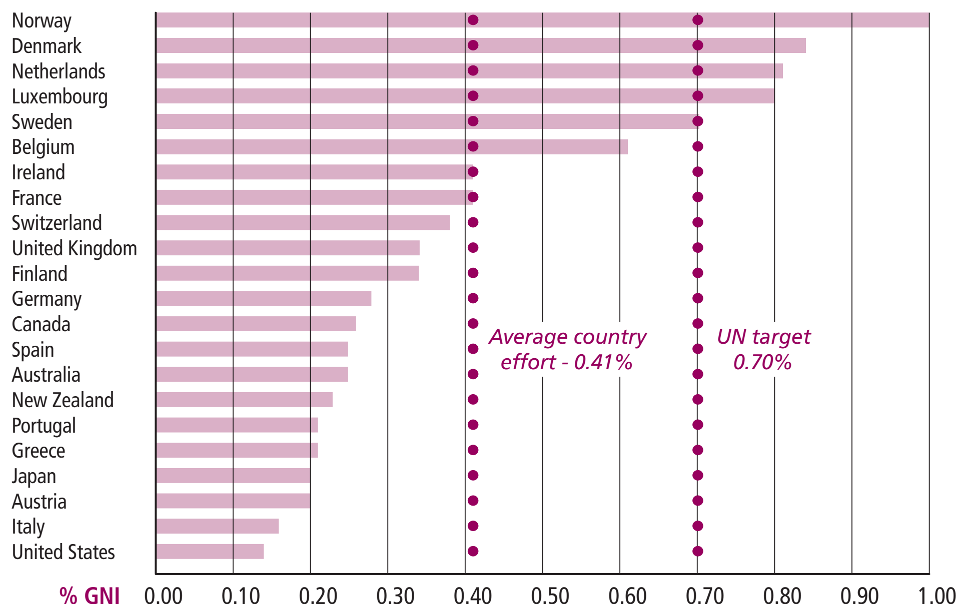
Her analysis of the epidemiological profile and public health in Ukraine showed that the country's population is falling annually, as is its life expectancy rate. The HIV-infected population is predominantly young people and newborn babies; the transmission routes are overwhelmingly intravenous drug use and/or unprotected sex.

Ukraine has no education or prevention strategy, almost no treatment facilities and no harm-reduction programmes for HIV/AIDS. The major research challenge for epidemiologists, DeBell believes, is the need to track the development of disease and the behaviour causing the rapid infection spread, then to identify the populations with the greatest need for prevention, care and treatment.

She called attention to the need for epidemiological data designed to meet public health requirements and to the need for policy analysis since "there is little research at present that is focused on the relationship between poverty and health." DeBell outlined a research agenda that should include social research on determinants of HIV/AIDS transmission, cost-benefit analysis of the epidemic, health-care investment priorities that match the population's needs and health systems research to establish a national health-care system that would meet development needs of Ukraine.

Jose Antonio Izazola-Licea, Executive Coordinator of SIDALAC at the Mexican Health Foundation, described the AIDS treatments focused on at the XV International AIDS Conference in Bangkok in July 2004. By the end of 2003, he said, 400,000 people were on antiretroviral therapy, equivalent to about 7% coverage. The highest rate of coverage, about 50%, was in Latin America and the Caribbean, and the lowest in Africa, where fewer than 3% receive antiretroviral treatment. He showed an illustration of institutional spending for HIV/AIDS from 1996 to 2002, with the cost increasing from about $250 million to nearly $3 billion. He predicted that AIDS spending from all sources would increase from $4.7 billion in 2003 to $10 billion in 2007, when annual needs would actually be $15 billion. He highlighted the countries with the greatest problem and the greatest needs in sub-Saharan Africa, and then displayed the levels of net Official Development Assistance (ODA) from countries as a percentage of their gross national income for 2003: Norway led the way in assistance with more than 0.90% and the United States was last on the chart with about 0.13%. The average country effort among the 22 nations listed was 0.41%. The UN's target is 0.70% and only Norway, Denmark, Netherlands, Luxembourg and Sweden currently meet or surpass that goal.

Illustration 18. **Net Official Development Assistance (ODA) as percentage of gross national income (GNI), 2003**



Presented by José A. Izazola in "Setting the scene after the XV International AIDS Conference in Bangkok"
Source: 2004 Report on the Global AIDS Epidemic, Organisation for Economic Co-operation and Development (OECD), 2004, figure 40

There is an "extremely urgent" need to make wise use of available resources to confront AIDS and sustain the support from international donors and national governments, Izazola said. There is also a need for longer term investments in developing countries. To translate funding into action, one of the most urgent issues is to determine whether interventions are preventing new infections; another concern is whether the money is paying for services for the most affected and vulnerable populations. He agreed with others at Forum 8 who said that a vital challenge was the need for country ownership of the battle against HIV/AIDS.

There must be a focus on prevention, Izazola said, and not just an ABC programme like the one that has been successful in Uganda (**A**bstinence, **B**e faithful or use a **C**ondom). There also has to be a decrease in the stigma and discrimination surrounding AIDS if the fight against it is to succeed. He quoted a remark made by UNAIDS Director Peter Piot at the closing ceremony of the Bangkok conference: "Our main challenge continues to be how to raise action based on science and activism to the level needed to achieve full success."

Zamukama Mwetex Grace, Project coordinator of Africa Dialog on AIDS Care (ADAC) at the Joint Clinical Research Center in Kampala, Uganda, observed that while sub-Saharan Africa has only 10% of the world's population, it bears over 70% of the world's HIV/AIDS burden. Large numbers of trained scientists are not working in their countries of origin, he said, and many African scientists and institutions are hindered by infrastructure capacity constraints to compete successfully for international research funds. Grace described a small grants programme, Africa Dialog on AIDS Care (ADAC) consisting of African-led AIDS experts, that had been formed to address the equity imbalance and foster dialogue on AIDS care in sub-Saharan Africa. Its main objectives are to improve research relevant to the management of HIV infection in Africa and help build research capacity in African institutions through supporting young researchers. "Our vision is that such initiatives help to correct the "10/90 gap" and to achieve the Millennium Development Goals by 2015," Grace says. ADAC's funding comes from the Rockefeller Foundation and the Doris Duke Charitable Foundation to accelerate research in AIDS care for sub-Saharan Africa through the Joint Clinical Research Center. The grant provides funding up to $80,000 for two years in a five-year programme of awards to applicants in an international review process. The applicants must be citizens of African countries who hold an advanced degree and are full-time employees of an African University or a not-for-profit research institution.

Illustration 19. **Leading Causes of Death 2002**

Infectious and parasitic diseases	10,904 (thousands)
HIV / AIDS	2,777
Diarrhoeal diseases	1,798
Tuberculosis	1,566
Malaria	1,272
Childhood diseases	1,124
STI (excluding HIV)	180
Meningitis	173
(Other) Tropical diseases	129
Hepatitis B	103
Hepatitis C	54
Dengue	19
Japanese encephalitis	14
Intestinal nematode	12
Leprosy	6

Presented by Rob Ridley in "Unfinished (Continuing) Research Agenda to Reduce the Burden of Infectious Diseases"
Source: Estimates for 2002 from World Health Report, World Health Organization, 2004

Malaria's toll: a child every 30 seconds

Malaria, too, appears undiminished in its spread throughout sub-Saharan Africa, where it kills one child every 30 seconds. Successful control of the disease would significantly contribute to both reducing child mortality and improving maternal health. The mosquito-borne disease kills more than a million people a year; another 300 to 500 million suffer from less severe forms of the disease. In 2004 WHO ranked malaria as the fourth leading cause of death among infectious and parasitic diseases, after HIV/AIDS, diarrhoeal diseases and tuberculosis.

There are a number of constraints on interventions, including underdeveloped health systems, shortage of trained staff, lack of research capacity, drug and insecticide resistance, and limited access to drugs. There is also a great need for new methodologies, from simple ones such as better insecticides and insecticide-treated bednets, to vaccines and new drug strategies.

Considerable progress in dealing with malaria has been made in Asia, where the compound artemisinin and its derivates have been extensively used and strikingly effective. However, the disease still ravages Africa where resistance to the classical medications (chloroquine and sulfadoxine-pryrimethamine) has reached as high as 60%, according to WHO. Due to rising demand for artemisinin, the drugs made from it are now in short supply and the prices for it have quadrupled. Supply crises are threatening 40 tropical countries that have made artemisinin the centrepiece of antimalarial efforts.

Efforts are underway to cultivate artemisinin in Africa and produce the pharmaceutical form of the anti-malaria drug there. The African Malaria Network Trust (AMANET) aims to develop a network of African-owned malaria research institutions to develop new malaria control tools. It also works in a North/South collaboration with the European Malaria Vaccine Initiative, which has transferred two new malaria vaccine candidates to it for testing.

In Tanzania, and other countries where malaria is a leading cause of morbidity and mortality, efforts have focused on a national scaling-up of insecticide-treated nets to control malaria. Their regular use by all children would avert 31,000 deaths per year, according to **Kaspar Wyss** of the Swiss Tropical Institute. The effort behind insecticide-treated nets has been joined by all the major stakeholders: the Ministry of Health, major donors, NGOs, the research community and the commercial sector, which has developed a strong industry for the mosquito nets. A nationwide marketing programme for the nets is one strategy in the up-scaling, the other is a voucher scheme, supported by the Global Fund to Fight AIDS, TB and Malaria, which gives a substantial discount to pregnant women and mothers of children under five for nets bought at commercial shops. Currently over 1.5 million new insecticide-treated nets reach Tanzanian households each year.

Tuberculosis, the "comeback disease"

Tuberculosis infection rates are increasing in sub-Saharan Africa and have only been reduced by a small margin in most other regions. Two million people die from TB each year.

Zeda Rosenberg of the International Partnership for Microbicides traced the re-emergence of tuberculosis – "the comeback disease" – and the need for new tools to combat it. Due to the lack of new technologies, many people are in danger of not receiving treatment for TB, she said, adding that current tools are simply not sufficient to keep up with the global situation worsened due to HIV/AIDS. HIV and TB are co-infections, fuelling each other as they expand through the world. There has been no new class of TB drugs developed for 40 years; the current vaccine against TB (the BCG strain) combats only about 5% of the disease burden, not providing protection against disease in adults. The market has been unattractive for the private sector, Rosenberg said, and there has been no capitalization of public sector research on TB.

The HIV/AIDS pandemic drew global attention to the health needs of resource-poor countries, Rosenberg said, with the result that public organizations became active in product development. She described how the International AIDS Vaccine Initiative (IAVI) was established in 1996 with the mission of accelerating efforts for an AIDS vaccine. It was the first programme for development of a vaccine through a public-private partnership and has produced five vaccine candidates in five years. Another PPP is the Medicines for Malaria Venture, one of the most successful public-private partnership efforts against a neglected disease.

Existing global PPPs have resulted in new vaccines, therapeutics, diagnostics and microbicides; a research and development global network has resulted. Major ventures often attempt to develop a number of candidates in order to guard against the risk of individual project failures.

The goals of PPPs have been the acceleration of product development and the engagement of industry and civil society, in addition to access for developing countries to new technology and drugs. The private sector, spurred by a humanitarian desire to do the right thing and create a good public image, she said, has been a source of technical expertise and physical resources. The disadvantages of these partnerships, however, are the opportunity costs and the possible risk to reputation.

Rosenberg emphasized that existing interventions are not enough to achieve the Millennium Development Goals; new investment is critical to the development of new drugs and vaccines. She believes this is where PPPs can make an important contribution.

"And other diseases"

As a few infectious diseases, such as poliomyelitis and leprosy, appear to be on the verge of elimination, new concerns arise: emerging infectious diseases. These include infections that appear in new geographical areas or increase abruptly, and most emanate from human contact with animals. They include Severe Acute Respiratory Syndrome (SARS), which struck in Asia in 2003 and caused grave health and economic impact across a broad area of the world. Avian flu, which broke out in January 2004, spread quickly through eight Asian countries. Other emerging threats include dengue and haemorrhagic fever, ebola and rift valley infection. The emergence of these diseases highlights how essential it is to prepare health systems to deal with the unknown as well as the known health threats. Most health experts agree that as people travel quickly and easily between countries and continents, the spread of infectious diseases will increase, with a catastrophic potential, especially in areas of large population and/or high population density.

Chapter 5: The changing patterns of the burden of disease

Poor countries are in a double bind, with the fewest resources and the greatest burden of disease, increasingly shouldering not only infectious diseases such as HIV/AIDS, TB and malaria, but also chronic diseases such as cardiovascular and diabetes. Noncommunicable diseases are becoming major causes of death and disability in all developing regions of the world. Add to these the neglected problems of mental health and disability, layer over it the changing demographic patterns in developing countries that will contribute a greater percentage of older people to their expanding populations – and the picture has the potential of becoming overwhelmingly bleak.

The year 2020 is projected to be the year in which the number of deaths from chronic diseases will equal the number of deaths from infectious diseases in developing regions of the world. Research and technology may hold the hope for these countries but, as the title of a report on the challenge of cardiovascular disease in developing economies says, it is "*A Race Against Time*" (Columbia University Press 2004).

Mental health has been largely ignored, despite its inclusion within the definition of health as described by WHO in 1948: "complete physical, mental and social wellbeing, not only the absence of disease." Mental health expert **Florence Baingana**, Senior Health Specialist at the World Bank, reported that in 2002 neuropsychiatric disorders ranked number one in burden of disease for both high-income countries and low- and middle-income countries. Mental health has well documented linkages with many targets of the MDGs, especially HIV/AIDS, maternal and child health.

Mental and neurological disorders account for about 13% of the disability burden of disease and are linked, like other illnesses, to poverty. Some researchers estimate that the proportion of mental health problems is about 25% of the burden of disease. Baingana questioned why mental and neurological disorders were not considered under the first Millennium Development Goal, to halve the proportion of people living in extreme poverty. They are clearly determinants of poverty, she said, and poverty can, in turn, cause mental and neurological disorders. Poverty is also linked to conflicts, which can trigger mental and psychosocial disorders, and conflicts lead to refugees and internally displaced persons, who suffer greatly from post-traumatic stress disorder, depression and anxiety.

Mental health is linked to education, gender and gender-based violence, she said, as well as to child and maternal health and to HIV/AIDS. She stressed the need for strategies to achieve the MDGs to take into account the role of mental health.

Up to 10% of children have disabilities; the majority of children who drop out of school or repeat classes have emotional or learning disabilities. According to WHO, one result of the HIV/AIDS epidemic and the conflicts around the world is that over 15 million children under the age of 15 have lost one or both parents. Studies have found that orphans are likely to drop out of school, show signs of distress and may be required to take on additional tasks at home that make it impossible for them to study.

Nearly half the world's internally displaced people are in Africa (49%), 20% are in Europe. Forty-three per cent of the world's refugees and asylum seekers are from the Middle East, 22% are from Africa. These are all people who are poor, displaced, often unemployed and without social services, including health services. They are all at risk for mental health problems.

Violence against girls and women not only produces physical injuries and psychological trauma, but also results in putting children at higher risk for emotional and behavioural problems. "The mental wellbeing of women is inherent to the health, educational and nutritional outcomes of their children," Baingana noted. Women with mental disorders attend fewer well-baby clinics and are less likely to immunize their children. In high-income countries, depression is the commonest disorder for women, she added, and the rate of depression among women is four times that of men.

What is the role of research? she asked. She suggested certain questions be addressed in order to get mental health disorders onto the world agenda:

- How important is stigma in evaluating and influencing health research and policy? Is it stigma that prevents the prioritization of mental and neurological disorders?
- What happens when a disorder that is stigmatized accompanies another stigmatized disorder, such as HIV/AIDS and mental disorders?
- What is the impact of research on policy and how is it measured?

Cardiovascular diseases

Against a background of changing demography and age structure, **Stephen MacMahon**, Director of the George Institute for International Health in Australia, discussed how cardiovascular diseases (CVD) have become leading causes of death and disability in most middle-income countries and an increasing number of low-income countries. He predicted that the burden of cardiovascular disease faced by these countries would double in the next few decades. In 2002, cardiovascular disease was ranked the leading cause of death in both high-income countries (38.1%) and low- and middle-income countries (27.9%). It ranked second, behind neuropsychiatric disorders, for all income levels as a leading disease burden. There already is an enormous double burden of noncommunicable diseases and infectious diseases shouldered by developing countries and demographics will compound the situation further, MacMahon said. By 2050 there will be a several-fold increase in the population reaching 40, when heart disease is most likely to occur. This will have a major impact on the entire population since cardiovascular disease strikes the middle-aged in the prime of their working lives, depriving families of income earners, workplaces of employees and communities of their leaders. The economic impact is profound.

The report *A Race Against Time* warns that no sector of the community will be spared from the cardiovascular disease epidemic, but the poor will suffer most as a consequence of both higher disease risks and limited access to health care. During the next twenty years, while birth rates are falling and the number of people aged 60+ has not yet passed the one billion mark, MacMahon said there is a window of opportunity for much of the developing world to respond boldly and effectively to manage chronic disease in general and CVD in particular.

"This epidemic poses a serious threat to development and the alleviation of poverty, yet it remains largely neglected by governments, bilateral donors and multilateral organizations," said MacMahon.

Citing statistics for Mexico, in 2001, he showed heart diseases as already the leading cause of death (15.9%), followed by malignant tumours and, in third place, diabetes causing 11.3% of deaths.

We know a great deal about risk factors for cardiovascular diseases, MacMahon said, listing high blood pressure, tobacco use and high cholesterol as major contributors. Since the mid 1960s, CVD has declined by more than 50% in many industrialized countries, including the US, Finland and Australia. Quitting smoking, improving diet and getting more exercise help, as does aspirin, which can cut risk by up to 30% among high-risk patients. Combination generic drug treatment, including diuretics, ACE inhibitors, statins and aspirin, is highly cost effective, estimated at about five cents/day and producing 60% to 70% reduction in the risk of major cardiovascular events.

He added that the effect of falling CVD mortality rates in the US and similar countries has been to move the burden of the disease up the age ladder so that heart disease has become the major cause of death after 75, removing the threat from younger adults in their economically productive years.

But in the heavily populated countries of China and India, which account for more than a third of the world's population, CVD continues to be the major cause of death among younger adults.

MacMahon said that cardiovascular disease has not been given priority by many of the world's governments, donors or multinational organizations, nor does it appear in the MDGs related to health. Without prioritization millions will die, he warned, and it is the poor who will be most adversely affected. In addition, there is little or no reliable information about how to address whole populations through promotion strategies in resource-poor settings or how to deliver cheap and effective treatment programmes to high-risk individuals through primary care.

Diabetes

Some 194 million people worldwide, or 5.1% of the adult population, have diabetes; the disease ranks among one of the world's costliest health problems. The number of people affected is expected to exceed 333 million (or 6.3% of the adult population) by 2025 if nothing is done to slow the epidemic. Forecasts predict that, during the next 20-30 years, the prevalence of diabetes will double in the Americas, almost triple in Africa and quadruple in the Middle East.

While type 1 diabetes continues to grow at a moderate rate, the incidence of type 2 is exploding; it is estimated that more than half the people with type 2 diabetes do not even know they have the disease. The health impact of diabetes manifests itself in blindness, kidney disease, nerve damage and amputations. People with type 2 diabetes have a risk of heart disease and stroke two to four times that of people without diabetes.

MacMahon said that the "epidemic of diabetes" in Mexico, added to the high incidence of heart disease, would result in a huge cost in lost productivity and hospital expenses. Not only is morbidity high as a result of diabetes but also disability caused by the disease takes a high toll, he said.

Illustration 20. Hospital Cost Associated with Cardiovascular Diseases and Diabetes: Mexico 2001

	US$
Diabetes	**36,369,775**
Cerebrovascular disease	**27,661,945**
Heart disease	**20,253,127**

Presented by Stephen MacMahon in "Cardiovascular Disease: A neglected yet avoidable threat to development and the alleviation of poverty"
Source: Anuario Estadistico 2001, Vol.II Daños a la salud/SSA

A National Health Survey of poor Mexicans in rural areas of the country in 2001 showed 60 to 70% were overweight or obese. MacMahon predicted the increase in obesity, the major cause of type 2 diabetes, may be “staggering” within the next decades. In fact, he says no region of the world will be spared increases in cardiovascular diseases and diabetes in the coming decades. In Asia, diabetes already affects more than 20% of the population and it doubles the risk of dying from heart disease.

Stephan Bjork, Senior Advisor, Stakeholder Relations, Novo Nordisk, Denmark, cited International Diabetes Federation (IDF) statistics showing that the direct annual cost of treatment of diabetes is at least $153 billion and may even exceed $286 billion a year. To put this into context, he compared the cost to nine times that of asthma spending and almost two-thirds that for cancer.

WHO estimates that by 2030 the number of people with diabetes will have reached 370 million and the cost of treating them will be between 213 and 396 billion international dollars per year by 2025, consuming as much as 40% of some countries’ health budgets.

The overall cost of health care for someone with diabetes is about 2.5 times that for a person without the condition; in some countries it is considerably more – in the US on average people with diabetes incur nearly four times as much in annual medical expenditures as people without diabetes.

The huge health costs of diabetes itself are only part of its total cost to society. The American Heart Association considers diabetes mellitus and its precursor condition to be major risk factors for cardiac, vascular and kidney disease. Their increasing prevalence among children and adults are a great concern and have made diabetes prevention part of CVD prevention.

Neglected diseases

Bernard Pécoul, Executive Director of the Drugs for Neglected Diseases Initiative (DNDi), focused attention on the disparity between North America, Europe and Japan – with 19% of the world’s population and 80% of the world’s pharmaceutical market ($406 billion) – and Africa, Asia and the Middle East – with 72% of the world’s population and a mere 13% of the pharmaceutical market.

“Infectious tropical diseases endemic in poor countries are getting a raw deal,” he said. “Between 1975 and 1999 of the 1,393 new drugs that reached the market only 16 were for infectious tropical diseases and tuberculosis – just over one percent of the total.” This group of neglected diseases, including very widespread ones like leishmaniasis and trypanosomiasis, lie outside the world pharmaceuticals market, he said. They are of little interest to the world’s drug researchers because those suffering from the diseases have no strategic value to the developing world and are too poor to pay for drugs that need massive investment of resources to produce. The countries where these diseases are endemic, he explained, have to use their limited resources to cope with the onslaught of these diseases but have only limited treatments available. “The need for new drugs and field-adapted therapies for these neglected patients cannot be overstated.”

Pécoul commented that, surprisingly, the parasites that cause the neglected diseases are of immense interest to scientific researchers and a great deal of basic research has been conducted on the diseases in the past 20 years. Yet, he noted “this has not been translated into treatments for needy patients, leading to a crisis in the lack of drugs for neglected diseases.”

He categorized the strategy for drug research and development on neglected diseases into three gaps, which DNDi hopes to bridge:

- between discovery and pre-clinical research, where new knowledge on drug targets and compounds is published but preclinical research does not begin
- between the pre-development stage and development of the drug, when validated candidate drugs are left by the wayside due to strategic company choices
- at the stage where new or existing drugs should reach the patient but do not due to registration problems, lack of production, high prices, etc.

Pécoul recalled that one of the first organized responses to the neglected disease crisis came from the Special Programme for Research and Training in Tropical Diseases (TDR) established and funded by WHO, the World Bank and UNDP in 1977. He credited TDR with several successes in the fight against neglected diseases such as malaria, onchocerciasis and leishmaniasis. In the past few years, other initiatives had joined the search for new drugs for malaria and tuberculosis: the Medicine for Malaria Venture (MMV) and the Global Alliance for TB Drug Development (GATB).

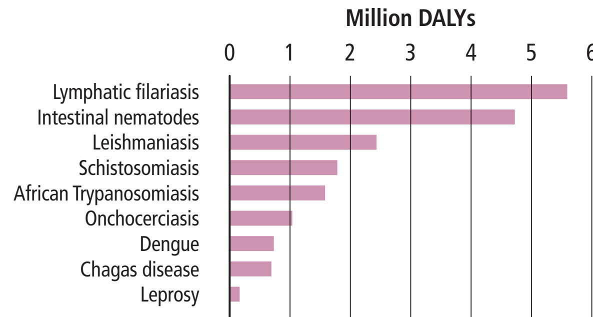
"Patients suffering from neglected diseases are forgotten people," Pécoul believes. "No reliable indicator of their numbers exists as most cases of neglected diseases go unreported … Thus, gathering information on the needs of patients is critical to DNDi's R&D strategy."

Among the neglected diseases he listed human African trypanosomiasis, which kills thousands of people in sub-Saharan Africa each year; 60 million are exposed to the disease. The disease was adequately controlled in the 1960s but has returned in epidemic proportions over the past 30 years due to war, civil unrest and economic decline. Leishmaniases is endemic in 88 countries where an estimated 350 million people are at risk. The most widely prescribed drug to treat leishmaniasis, pentavalent antimony, was discovered a century ago, has serious side effects, requires a prolonged course of treatment and is losing its efficacy in some regions due to increasing parasite resistance.

Other neglected diseases of concern, says Pécoul, are sleeping sickness, Chagas disease, dengue, lymphatic filariasis, and Buruli ulcer. He believes the only way DNDi can bridge the gaps in the drug R&D pipeline, so that new life-saving medicines can be made available to the people suffering most from neglected diseases, is for it to join forces: with governments, international organizations, private foundations, public and private sector research institutions and the scientific community.

TDR's Director, **Robert Ridley**, provided another insight into neglected diseases. Infectious diseases represent 30% to 40% of the global burden of disease, Ridley said, but in many areas they are fought with dangerous drugs that could, in themselves, cause death. Listing the leading causes of death in 2002, Ridley said communicable diseases, maternal and perinatal conditions and nutritional deficiencies took a toll of more than 18 million people (32.1% of total deaths). The list of parasitic and infectious diseases is long, led by HIV/AIDS, diarrhoeal diseases, TB and malaria, but tropical diseases such as lymphatic filariasis account for a huge burden of disease – about 5.5 million disability adjusted life years (DALYs) in 2001.

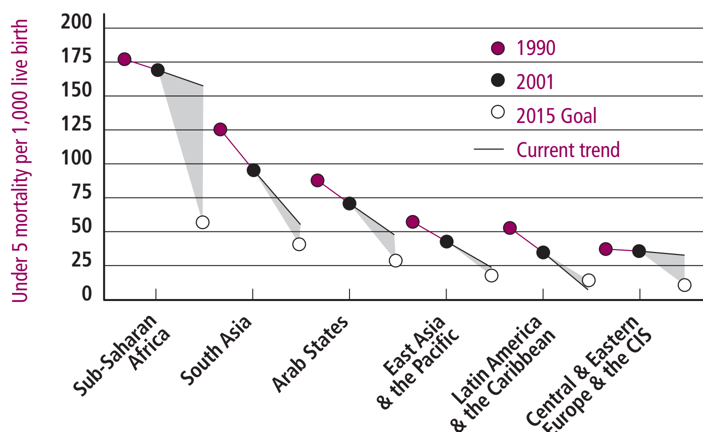
Illustration 21. **The burden of selected tropical diseases other than HIV/TB/malaria (2001)**



Presented by Rob Ridley in "Unfinished (Continuing) Research Agenda to Reduce the Burden of Infectious Diseases"

During the past 30 years over 30 new infectious diseases have been identified, including HIV/AIDS, hepatitis C, West Nile fever, SARS and Avian flu. Other diseases have been introduced intentionally as tools of bioterrorism (anthrax) and still others have re-emerged in populations once thought to have them under control (polio, TB). The "research agenda" is unlikely to end, Ridley said, because disease and poverty feed off each other and both are plentiful. He noted that the success in eradicating smallpox, achieved in 1980, would be difficult to replicate. Polio, for instance, re-emerged in parts of Asia and Africa after 2000 due to armed conflicts in some places, complacency in others and also due to rumours that the polio vaccine caused impotency. Ridley was sceptical that the use of research alone will enable the attainment of the MDGs. Challenges, he concluded, would remain well beyond the MDG target date of 2015 and a decrease in child mortality is especially unlikely to be achieved in sub-Saharan Africa.

Illustration 22. **Challenges will remain beyond 2015**



Presented by Rob Ridley in "Unfinished (Continuing) Research Agenda to Reduce the Burden of Infectious Diseases"
Graph used by permission of Oxford University Press

How we look at research for reducing the infectious disease burden requires a paradigm shift, he said, moving from the academic mode to recognizing the managerial and governance challenges. He stressed that it is necessary to look beyond single issues to cross-cutting activities that have an impact on health. Using malaria as an example, he showed how different types of research and integrated approaches could offer the best results in combating a disease found in different matrixes. This requires not simply supplying a drug or applying insecticide but the combination of interventions with an efficient delivery system.

Upstream interventions are still needed to develop drugs in medium-risk situations or vaccines and transgenic mosquitoes in high-risk areas, he added. Tailoring different R&D strategies to different categories of diseases is crucial, Ridley explained, as is implementation of research that now must recognize the importance of the interface of all diseases in Africa with HIV/AIDS.

Organizations involved may be broad based, multilateral, intergovernmental (TDR) or single issue, not-for-profit-foundations (IAVI, MMV, Global Alliance for TB Drug Development), research-specific consortia (sponsored by Gates, EC, NIH), strategic innovation funding (Gates, Grand Challenges) or national agencies. But all need enhanced coherence and coordination of approaches, Ridley said. Echoing comments by Pascoal Mocumbi earlier in a plenary, he predicted that sustainability will only be assured if there is greater developing-country ownership of research and its implementation.

Deaths on the road

A man-made epidemic, fuelled by today's frequent road travel and loaded onto poor roads and unsafe vehicles, has resulted in an increasing health burden and a different kind of challenge for global public health systems. There are 1.2 million road fatalities and 50 million additional injuries annually, according to **Rochelle Sobel**, President of the Association for Safe International Road Travel (ASIRT), USA. She described who is most likely to become a statistic in the mortality rates from road crashes that claim 19 people out of every 100,000 worldwide:

- over half are males between 15 and 45 years old
- 85% to 90% of the deaths and injuries occur in middle- to low-income countries
- pedestrians, passengers on public vehicles and cyclists are the most affected

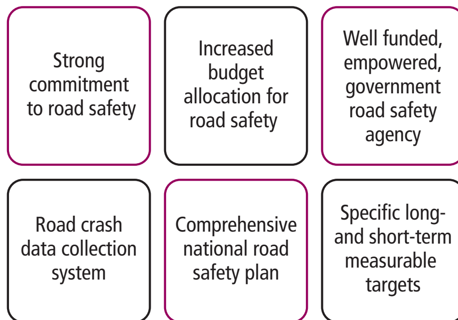
On an ordinary day, Sobel said, 3,242 people die in road crashes that are a result of a convergence of unexpected events. Traffic fatalities have become the ninth leading cause of death of all ages and the third leading health burden. Currently, nearly 90% of the fatalities are in low-and middle-income countries; deaths of children under 14 are seven times greater in developing countries than in developed countries. According to the US State Department, road crashes are the single greatest cause of death of healthy Americans travelling abroad.

She anticipates that, unless preventive measures are implemented, road traffic fatalities will increase by 65% in middle-and low-income countries over the next 20 years. Sobel estimates the cost of the deaths at $518 billion/year, a toll that presents a huge economic drain, especially because the family breadwinner is the one most frequently killed.

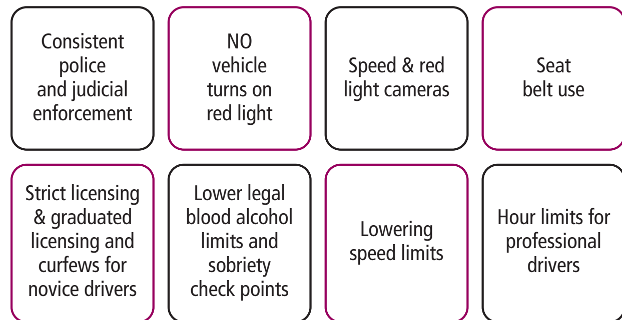
"Road crashes are predictable and preventable," she observed and listed a number of hazards involved: use of alcohol, lack of seat belts, driver fatigue and poor road and vehicle conditions. But most important is the political will to improve roads, she said, as well as emergency medical services and training and enforcement of regulations for drivers and vehicles. In the 1960s and 1970s, rates of road deaths and injuries in high-income countries began to decrease as a result of specific interventions. The same type of successful programmes should be used in developing countries, she added, and urged the research community to provide the data to educate and motivate governments to invest in road safety initiatives.

Illustration 23. **Saving Lives: What Works**

Involving Governments



Good Laws and Enforcement, Enforcement, Enforcement



Presented by Rochelle Sobel in "An Ordinary Day: Today's toll… tomorrow's vision"

Chapter 6: One goal to reach the others

Millennium Development Goal 8: Develop a global partnership for development

There were many suggestions in Mexico City about how to enhance the possibilities of reaching the Millennium Development Goals: more information to assess and develop strategies, more and better technology, medicines and vaccines, improvement of health systems to implement the knowledge and tools we already have, equity for the most vulnerable segments of the population, the formation of a global alliance or treaty for support of health-care research and development. One-third of the way to the 2015 target date, health-care leaders throughout the world are scrambling to find the "magic guns" to fire the bullets in stock and the ammunition currently being developed.

One of the greatest hopes for improved and extended health research that has been strongly endorsed by both poor and rich countries lies in partnerships and networks. The variety of possibilities here is extensive and promising. While MDG 8 is not one of the four MDGs that is sometimes highlighted for health, it has the potential to impact all the goals. Combining the skills and resources from government, academic, for-profit and civil society sectors may provide solutions to health problems that no one sector could manage.

Elias Zerhouni, Director, National Institutes of Health (NIH), asked on the first day of the Mexico meetings whether the Millennium Development Goals might not be met because they were too bold – or because not enough is being done to achieve them. "The MDGs will require an enormous dose of partnership," he advised, and suggested that new kinds of alliances and partnerships be encouraged. Every research activity is a local one, he explained, and described how the NIH, with activities in 85 countries, has focused on partnerships.

"NIH has come to understand that we know very little about the biological system," he said, "We need to redouble efforts across the world." He cited diabetes as an example where there is yet no "pathway from fundamental research to treatment." The goal of NIH, he said, is to invest heavily in infrastructure so that researchers in the developing world will have access to it and will be able to construct a database. Part of the reason the "10/90 gap" is there, he said, is because researchers who focus on the 90 do not have access to the knowledge they need.

There needs to be a focus on teams working together to create partnerships across entire fields of science. At the same time, he said, "we need to respect the ethical concerns of the world – we cannot do research without gaining the trust of the world."

Zerhouni stressed the need for clinical trials and the need for collaboration but added that NIH has been hampered by lack of public access. He announced that it is the intention of NIH to make available for free the "fruits of its research," all the articles to which it has contributed funding.

Julio Frenk, chairing the first day's session, put it simply. Partnerships are needed, he said, because "we can't go it alone," and we need to cut across the rich and poor divide, across sectors and governments.

Public-private partnerships

Roy Widdus, head of the Global Forum's Initiative on Public-Private Partnerships for Health, described some of the types of partnerships: North/North, South/South, North/South and, of course, public-private. Partnerships support product development and improve access to resources by those who need them. Networks, he added, provide linkages for information exchange and are used for advocacy or other purposes, such as emergencies.

Just as **Zeda Rosenburg** of the International Partnerships for Microbicides, described the need for PPPs and new tools, especially in combating the resurgence of TB, others made similar endorsements.

"Partnerships are needed, there is no other way to reach the goals ... tremendous momentum has been gained," declared **Jacob Kumaresan**, President of the International Trachoma Initiative, in the last plenary session of Forum 8. He listed several partnerships that have had an important impact on improving access to drugs in Africa and described how six major diseases, from trypanosomiasis to tuberculosis, are being fought with the aid of partnerships with pharmaceutical companies. Many more drugs are in the pipeline, he added, among them those against malaria are the most numerous.

The burden of diseases is so great, he said, that the governments cannot be left to handle them alone. Of the major accomplishments that have been aided by pharmaceutical companies in areas of tropical diseases, Kumaresan said, the treatment of leprosy is one of the most noteworthy. Over 13 million people have been treated for leprosy, 2.5 million by Novartis donations and, since 1985, the prevalence rate has dropped by over 90%.

The Global Alliance for Vaccines and Immunizations (GAVI) includes the International Federation of Pharmaceutical Manufacturers Associations (IFPMA) and seven pharmaceutical firms. One public-private partnership that has been aided by GAVI and the Vaccine Fund is the Rotavirus Vaccine Program, founded in 2003 at PATH, a non-profit global health organization. The programme was designed to reduce child morbidity due to rotavirus, which takes a toll of 500,000 children each year and hospitalizes another 2 million. Vaccines are the best option for reducing mortality and morbidity due to rotavirus in the developing world, where it primarily occurs.

Public and private sectors must develop and implement a shared agenda to ensure that decision-makers receive the information and data they need to make an appropriate decision about rotavirus vaccine use, explained **Evan Simpson**, Senior Communications Officer of the Rotavirus Vaccine Program. Partnerships must be formed also with governments, global health organizations and donor agencies with the single purpose of reaching children in developing countries with rotavirus vaccines as quickly as possible, he said. The mission of the vaccine programme depends upon the success of the partnership models that inform decision-makers about the importance, viability and sustainability of the vaccine programme.

Another public-private partnership is found within the Global Polio Eradication Initiative, a plan to immunize 250 million children, and is supported by at least four large pharmaceutical companies.

The International Trachoma Initiative, founded in 1988, has the goal of treating 84 million people with active trachoma, an infection that can lead to blindness. The majority are children and most of the afflicted are in poor countries. The treatment focuses on surgery, antibiotics, face washing and environmental factors (SAFE programme). Kumaresan described how Pfizer increased donation of the medication, Zithromax, over five years in Morocco. Used in conjunction with the SAFE programme, the antibiotic contributed to a decline of trachoma by 90% in children in five of Morocco's provinces. Up to the end of September 2004, the trachoma control programme had treated 17 million people worldwide with surgery and antibiotics. Kumaresan credited creative partnerships between health, education, water and sanitation partners in the countries affected.

The impact of public-private partnerships to improve access to drugs especially benefits the world's poor countries and has contributed to the elimination of disease in many areas. Kumaresan called for a renewal of political will to meet the challenges that remain:

- the need for more research and medicines to outpace disease resistance and to turn the tide towards eradication
- to make medicines safer, more efficacious and easier to use
- to develop vaccines
- for collaboration between all sectors
- to integrate and improve approaches to community-based interventions
- to continue to assess and estimate disease burden and cost-benefits/effectiveness.

A report from the Initiative on Public-Private Partnerships for Health (IPPPH) highlighted accomplishments in the control of diseases associated with poverty. The Aventis/WHO partnership targeted human African trypanosomiasis (sleeping sickness) in about 25 countries in sub-Saharan Africa, where the disease is endemic and 60 million people are at risk. Between 300,000 and 500,000 suffer from the disease, which is fatal if not cured. As a result of the programme, resources of the French Government, Bayer Pharmaceuticals and the Gates consortium for new drugs were mobilized and more than 100 health personnel were trained.

GlaxoSmithKline's Global Community Partnerships on Lymphatic Filariasis has also had far-reaching impact. The company's donation of medication (Albendazole) to WHO for the elimination of lymphatic filariasis has reached more than 80 million people, including 30 million children, since 1998. A Global Alliance of partners has included international organizations (WHO, the World Bank), the private sector (GlaxoSmithKline, Merck, Binax), international development agencies in three countries (Japan, UK, USA), non-governmental organizations (Handicap International, Carter Center, Health and Development International, Mectizan Donation Program), academic institutions in five countries (Denmark, Egypt, Malaysia, UK, USA) and foundations (Bill and Melinda Gates Foundation). Of the 80 countries where the disease is endemic, 39 have commenced the programme using the GSK-donated medication. In addition to the donated medicines from GSK and Merck, the Global Programme for the Elimination of Lymphatic Filariasis has received grants from the Gates Foundation, the UK Department for International Development, Japan International Cooperation Agency, USAID and the Arab Fund. Significant contributions to the programme's implementation have been provided by the national governments of the countries afflicted by the disease.

Other projects described in IPPPH's report include the Merck Mectizan Donation Program, the African Comprehensive HIV/AIDS Partnerships (Botswana/Gates/Merck), Accelerating Access Initiative, the WHO/Novartis Leprosy and Malaria Collaboration programmes and Pfizer Pharmaceutical's programme against fungal opportunistic infections in HIV/AIDS patients.

Eva Harris, President of the Sustainable Sciences Institute (SSI) USA, discussed the transfer of biomedical technologies to developing countries, how to make them available to local scientists and how to support investigation of local public health problems. While high-income countries have a large number of scientists and large infrastructure for evidence-based decision-making, low-income countries do not, she said. "Strengthening research capacity in low-income countries is one of the most effective and sustainable ways for advancing health and development in these countries and of helping correct the '10/90 gap' in health research."

SSI focuses on the human component, local priorities and ownership. Its goal is to enhance South/South partnerships. Harris described how training regional instructors could increase local participation and improve regional networks. She listed collaborators in the US, Ecuador, Guatemala, Paraguay, Panama and Nicaragua, and support from several foundations, individual donors and international initiatives. SSI has trained more than 600 scientists from 20 developing countries in on-site workshops and peer-training sessions. She gave examples of how projects in neighbouring countries in South America can exchange information and techniques to quickly diagnose and treat health problems such as dengue, TB and leishmaniasis. Manuscript-writing workshops, developed in response to local needs, can enhance chances of competing successfully for grants, she said, but they also help local scientists gain ownership of their projects and can influence local and national health policy.

Illustration 24.

How to achieve the MDGs

- Prioritize public health problems
- Identify priority cost-effective interventions
- Develop cost-effective interventions where none exist
- Strengthen effectiveness, efficiency and sustainability of national health systems to deliver priority interventions
- Ensure poor have access to priority interventions
- Monitor and evaluate the degree of achievement of MDGs.

Presented by Gill Samuels in "The Millennium Development Goals for Health: Rising to the Challenge"

Gill Samuels, Executive Director of Science Policy & Scientific Affairs (Europe) for Pfizer, outlined her company's approach in a number of partnership programmes, including those dealing with HIV/AIDS and fungal disease. Pfizer also supports the Infectious Disease Institute at Makerere University in Uganda and Global Health Fellows working for NGOs on HIV/AIDS programmes in developing countries. The Pfizer Foundation awards HIV/AIDS grants for health-care providers in countries hardest hit by that disease. The first step, she said, is to collaborate with researchers, advocacy groups, governments and third-party organizations to advance understanding of the disease. It is important to partner with these stakeholders and people living with HIV/AIDS to facilitate development of programmes, policies and medicines that improve their lives. The key factors, she said, are political resolve and shared commitment. Pfizer's programme, she said, includes both discovering the medications to improve the lives of those who have the disease, and increasing access to HIV/AIDS medicines for those who need them. Pfizer has 12 compounds in five different classes in the pipeline but the challenge of meeting the MDG goal by 2015 relies on development of partnerships and the following goals:

- a clear strategy in poverty reduction organized by governments
- coordination of donors
- rewarding the success of aid funds and penalizing mismanagement of them
- cross-learning between pharmaceutical companies.

Research networks

Bernard Pécoul of DNDi stressed the importance of research networks to develop a needs-driven R&D agenda. He highlighted the need to review the wisdom of using existing research networks for the drug development process and the importance of assessing the needs of patients. He believes that if existing research facilities and the expertise of highly qualified research scientists joined forces, new drugs for neglected diseases could be developed sooner and more efficiently. Knowledge transfer could also strengthen existing capacity in developing countries.

Research collaboration also has the ability to address disparities in knowledge generation, explained **Gerald Keusch**, Associate Dean for Global Health at Boston University, USA. He gave examples of linking existing organizations that already have money with research agencies that do not. There is no current network of research agencies, he said, and if this collaboration is successful, both the gap in knowledge and that in funding can be addressed.

Richard Horton, Editor-in-Chief of *The Lancet*, reminded participants to listen harder to the voices from within countries. There have been extraordinary efforts and successes, such as the IMCI/MCE programme that has set a standard for evaluating strategy, he said, but the larger success depends directly on how research is translated into policy measures. There has been a lack of commitment to improve the situation on widespread but neglected diseases such as malaria, Horton said. But the lack of solutions, for example an experimental malaria vaccine, also shows a need for sustained commitment from others, including scientists and academics. "It's no good making demands on policy-makers if *we* fail," he said.

He urged participants to respond to the refusal by some countries to join the international community responsible for global health. Not to respond to global health needs and to leave such critical measures to NGOs to fill the gap is "spineless," he said.

Jong-Wook Lee, Director-General of the World Health Organization, emphasized to the combined audiences of the Ministerial Summit and Forum 8 that accountability is "fundamental to ensure research." Referring to the Global Forum's newly published total of US$106 billion annual expenditure in health research spending, he noted that while it is impressive, it still is not enough to bridge the "10/90 gap." He raised the question of whether the right health research is being done and asked how much implementation is constrained by weak health systems. The Director-General suggested that a better health research balance might be found and research improved in equity and fairness, but emphasized that to make a real difference "we must engage policy-makers and researchers." Mechanisms for partnerships are vitally important and reviews to develop guidelines are necessary, Lee concluded, but it is also critical that "we not lose sight of the imperative of *local* knowledge and insight."

The statements issued on the closing day by the Ministerial Summit and the Global Forum for Health Research took up the question of commitment to action.

Illustration 25.

Whose responsibility?

Everyone's responsibility:

- Public and private sectors
- Governments of developed and developing countries
- Research institutions
- Multilateral agencies
- NGOs, civil society

Presented by Stephen Matlin in "The health research necessary to achieve the Millennium Development Goals"

The exercise of political commitment and power was seen as the necessary pre-requisite to ensure the implementation of the health research agenda required to support the achievement of the MDGs. To provide the resources necessary for research within developing countries, the Global Forum urged governments of those countries to spend at least 2% of their national health budgets on health research. These funds should be used locally for health research and research capacity strengthening. Donors were urged to allocate 5% of their funding for the health sector to health research and research capacity strengthening in developing countries.

Civil society, NGOs and communities must be involved in the governance, definition, generation and conduct of health research; in the application of the knowledge and technologies it provides; in monitoring progress and in maintaining the public debate about resources and priorities.

Innovative research should be supported by the public and private sectors, and by academic institutions. Priority should be given to R&D to create technologies and products directed to meeting developing country needs. The private sector and governments should more intensively explore avenues to ensure access to products. The not-for-profit private sector should continue its commendable contributions to health and health research.

In its Forum 9 statement (see the full text on following pages), the Global Forum for Health Research commits itself to work with the World Health Organization, Council on Health Research for Development and other agencies to close the gaps in health research for the needs of developing countries. It will promote increased attention to strengthening evidence-based approaches to health, through the application of both existing and new knowledge and through the active diffusion of knowledge to civil society with the participation of civil society organizations.

The Global Forum will also work in partnership with research councils, national institutes of health, researchers, NGOs and community-based organizations, fostering systematic collaborations to improve global health and support the attainment of the MDGs. It will conduct and promote research to identify and document what works, to help build the evidence base for health research that supports effective health interventions. It will encourage better use of priority-setting tools and processes to help focus research on vital, neglected areas and to strengthen research capacities. The Global Forum will continue and intensify its tracking of resource flows for health research to better understand and call attention to the gaps in resources.

In 2005, it will again convene a discussion Forum, bringing together those who can influence the global health research agenda and providing a platform to assess progress towards the MDGs.

Forum 9

12-16 September 2005

mumbai, india

Afterword and Annex

This report is a subjective account of some of the main discussion points at Forum 8. It does not pretend to be exhaustive: the very breadth of the meeting's theme would preclude any such attempt. Very many useful and enlightening discussions and contacts took place outside the formal plenary hall setting, in parallel sessions and discussions, in poster presentations, question-and-answer sessions and in the Marketplace.

The report is accompanied by a CD-ROM containing the final Forum 8 programme and list of participants, together with the full texts of presentations made available by their authors. The same material is available on the website www.globalforumhealth.org

Annex: Statement by the Global Forum for Health Research

at the conclusion of Forum 8, Mexico City, 16-20 November 2004.

Health research for equity in global health

1. The eighth annual meeting of the Global Forum for Health Research,[1] held in Mexico City, 16-20 November 2004 in conjunction with the Ministerial Summit on Health Research, brought together over 700 participants from government, intergovernmental organizations, nongovernmental organizations (NGOs), the private sector, researchers and research councils, leaders and users of health research, and representatives from civil society to consider 'Health research to achieve the Millennium Development Goals (MDGs)'. At the end of this meeting, the Global Forum for Health Research makes the following statement, which will also serve as a contribution to the review of progress towards the MDGs in September 2005:

Health research and the MDGs

2. The vicious circle of poverty and ill health[2] at which the MDGs are targeted will not be broken without intensified effort to close the continuing '10/90 gap'.[3] In many developing countries, efforts for poverty eradication have been undermined by deterioration in the population's health. The attainment of the MDG poverty target will depend on increased research directed to the health needs of those living in absolute poverty, and to improving access to affordable products and services in a variety of settings. Health policy and systems research and social sciences, behavioural and operational research are vital to improve the functioning, reach and targeting of health services; to address aspects such as social determinants of health; and to provide a stronger evidence base to underpin health promotion strategies.

3. Achieving all the MDGs will require addressing health and its determinants in a comprehensive way and will necessitate further health research, of high quality, focused on the needs of developing countries and vulnerable populations. This research must encompass the spectrum from the biomedical sciences (such as affordable and accessible drugs, vaccines and diagnostics) to health policy and systems research, social sciences, political sciences, health economics and behavioural and operational research, and research into the relationship between health and the cultural, physical, political and social environments. It must be trans-disciplinary and inter-sectoral. It must give systematic attention to cross-cutting issues of poverty and equity, taking account of inequities based on gender, ability, ethnicity and social class/caste, among others; the needs of both the aged and the largest generation ever of young people 0-19 years; and the needs of other specifically disadvantaged groups such as migrants, refugees and those exposed to violent conflict.

4. More research is also required into the determinants of child health; into new tools to avert the childhood mortality that results from a handful of diseases; and into scaling up improved delivery and utilization of existing methods which could already avert two thirds of child deaths. Research is also needed on nutrition, pregnancy care and skilled care during and after delivery, to improve maternal and neonatal health and decrease maternal and neonatal mortality and morbidity; and to develop female controlled methods of protection, including microbicides and vaccines, for the prevention of HIV infection. Given the interrelationships between sexual and reproductive health and rights and the conditions that are addressed by the MDGs, it is apparent that the MDGs will not be achieved without much greater attention to sexual and reproductive health, including research in the biomedical, health systems, and social sciences domains and the translation of that research into policies and programmes.

5. Increases are being seen in developing countries in morbidity and mortality, due not only to HIV/AIDS, malaria and tuberculosis but also emerging and re-emerging infectious diseases. There are rapidly growing levels of injuries and noncommunicable diseases, including cardiovascular disease and diabetes, as well as increasing challenges in mental and neurological health. Thus, narrow targeting of a few specific preventive and curative interventions is unlikely to deliver all the desired outcomes. An approach is needed that encompasses all these areas, not just the specific MDG targets.

(5) Targeted programmes and efforts to make general improvements in health systems should be mutually supportive and synergistic. This requires research into areas such as scaling up, providing access to and increased utilization of health systems and services, and addressing inequities. Methods of measurement need to be developed to adequately capture the impacts of ill health on individuals, families, communities and societies.

Necessary actions

6. The exercise of political commitment and power is the necessary pre-requisite to ensure the implementation of the health research agenda required to support the achievement of the MDGs. The public and private sectors, governments of developed and developing countries, research institutions, multilateral agencies, NGOs and civil society must commit themselves to the shared responsibility of advancing the volume and pace of health research that is focused on improving the lifespan and health of people everywhere. Research is needed to better understand the uneven distribution of power in the global health system and the changing role of different actors, to ensure increased equity and accountability in global health.

7. To provide the resources necessary for essential research within developing countries, we urge governments of these countries to spend at least 2% of their national health budgets on health research, as recommended by the 1990 Commission on Health Research for Development. These funds should be used locally for health research and research capacity strengthening. Also in line with the Commission recommendation, donors are urged to allocate 5% of their funding for the health sector to health research and research capacity strengthening in developing countries. Monitoring the use of funds for capacity development is a vital complementary activity.

8. Civil society, NGOs and communities must be involved in the governance, definition, generation and conduct of health research; in the application of the knowledge and technologies it provides; in monitoring progress and in maintaining the public debate about resources and priorities. Ethical and technical reviews of research must assess the likely contribution of the research to policy making and to equitable health outcomes, in particular to redress major inequalities such as sex and gender differentials.

9. Innovative research should be supported by the public and private sectors and by academic institutions. Priority should be given to research and development to create technologies and products directed to meeting developing country needs and to ensuring their delivery. The private sector and governments should more intensively explore avenues to ensure sustainable and equitable access to products, services and treatment. The not-for-profit private sector should continue its commendable contributions to health and health research. Research is needed into the roles of both intellectual property systems and public-private partnerships in creating health products and widening equitable access to them.

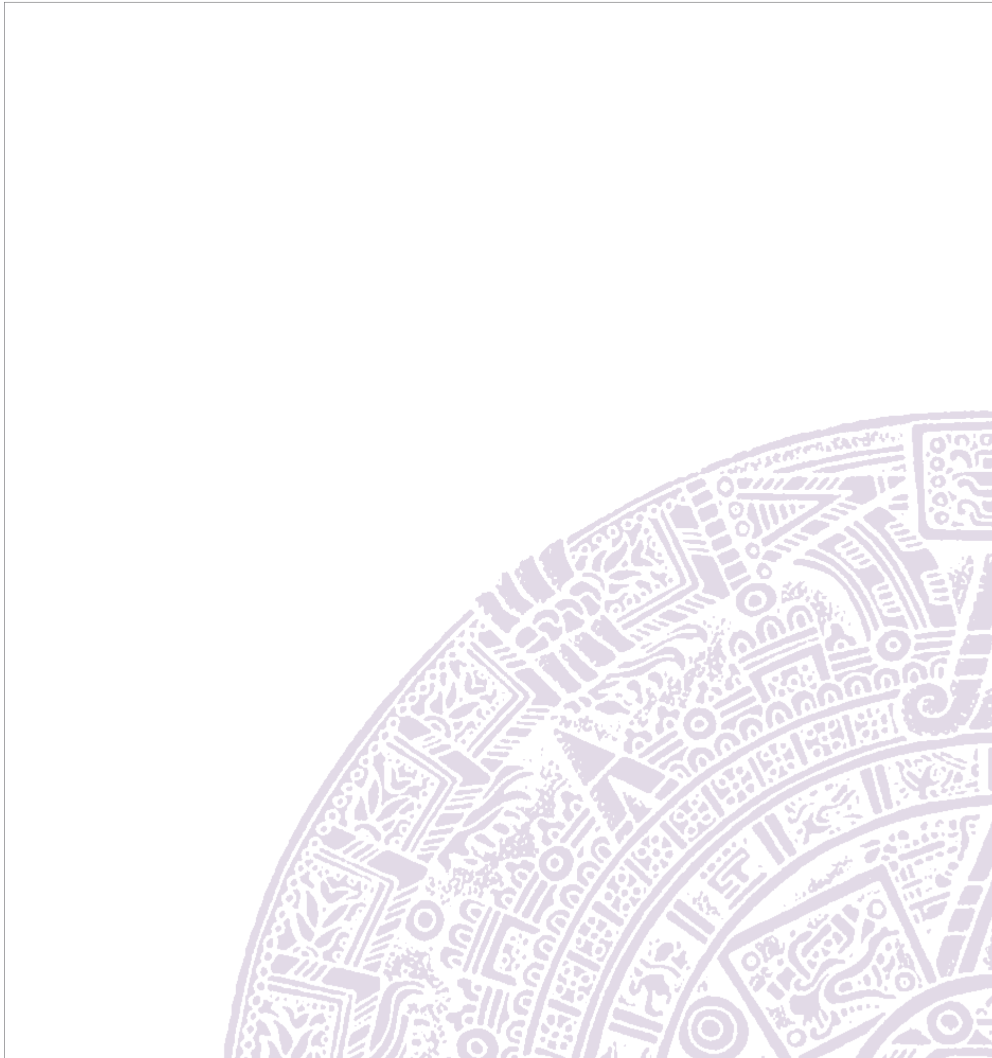
The Global Forum for Health Research

10. The Global Forum for Health Research commits itself to work with the World Health Organization, Council on Health Research for Development and other agencies to close the gaps in health research for the needs of developing countries. It will promote increased attention to strengthening evidence-based approaches to health, through the application of both existing and new knowledge and through the active diffusion of knowledge to civil society with the participation of civil society organizations. The Global Forum will also work in partnership with research councils, national institutes of health, researchers, NGOs and community-based organizations, fostering systematic collaborations to improve global health and support the attainment of the MDGs. It will conduct and promote research to identify and document what works, to help build the evidence base for health research that supports effective health interventions. It will encourage better use of priority-setting tools and processes to help focus research on vital, neglected areas, and to strengthen research capacities. The Global Forum will continue and intensify its tracking of resource flows for health research, to better understand and call attention to the gaps in resources.

11. The Global Forum for Health Research welcomes the statement issued by health ministers at the conclusion of their Mexico Summit, and looks forward to further, periodic conferences to maintain the discourse at a high political level.

12. The Global Forum for Health Research will intensify its own efforts to work, in collaboration with international and national partners, to help achieve the MDG targets of better health for all.

1. The Global Forum for Health Research is an independent international foundation based in Switzerland.
2. Health is defined as a state of complete physical, mental, social and spiritual well-being and not merely the absence of disease or infirmity.
3. The expression '10/90 gap' was coined to describe the imbalance in how resources for research were being allocated, following the estimate made in 1990 that less than 10% of global health research resources were then being applied to the health problems of developing countries, which accounted for over 90% of the world's health problems. The expression continues to serve as a symbol of imbalance in the allocation of global health research resources.



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Global Forum for Health Research

HELPING CORRECT THE 10|90 GAP

Mexico

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