Chapter 9

Some networks in the priority research areas

Summary

The chapter reviews some of the priority areas recommended in chapter 4, describing the size of the problem and the results of efforts to build networks which focus on these priority areas (including their objectives, partners, governance, strategies and activities).

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

A. Networks focusing on diseases and conditions
- Section 1. Global Alliance for Cancer Control
- Section 2. Global Alliance for TB Drug Development
- Section 3. HIV/AIDS
- Section 4. Initiative for Cardiovascular Health Research in Developing Countries
- Section 5. Medicines for Malaria Venture
- Section 6. Mental and Neurological Health
- Section 7. Multilateral Initiative on Malaria
- Section 8. Reproductive Health
- Section 9. Road Traffic Injuries Research Network
- Section 10. Roll Back Malaria
- Section 11. TDR

B. Networks focusing on determinants (risk factors)
- Section 12. Child Health and Nutrition Research Initiative
- Section 13. Sexual Violence Research Initiative

C. Networks focusing on priority-setting methodologies

D. Networks focusing on policies and cross-cutting issues
- Section 14. Alliance for Health Policy and Systems Research
- Section 15. Council on Health Research for Development
- Section 16. Initiative on Public-Private Partnerships for Health

A. Networks focusing on diseases and conditions

Section 1

Global Alliance for Cancer Control[1]

1. Burden of disease

Cancer is acknowledged to be a major and increasing public health problem throughout the world. It is estimated that over the next 20 years, the number of cancer deaths worldwide will increase from about 6 million to 10 million a year – significantly increasing both the human and economic burden of cancer.

While some countries address the cancer burden effectively, there is great variability among nations in their capacity, resources and commitment to addressing cancer as a public health priority. In an effort to meet this public health need, WHO and the International Union Against Cancer (UICC) have brought together diverse organizations with the aim of working in partnership to address cancer at the global level.

2. Creation of the network

The need for an Alliance for Global Cancer Control was first addressed at the 18th UICC International Cancer Congress in Oslo in 2002. Representatives of major national and international organizations and private sector organizations interested in cancer control agreed that such an Alliance should be comprehensive in its approach, but that specific action was needed at the global level in the following four priority areas:

- advocacy for comprehensive national cancer control plans
- global advocacy for cancer prevention and healthy lifestyles
- addressing the needs of cancer patients
- promoting applied research opportunities.

At the 2003 meeting of the American Society for Clinical Oncology, the following major functions were identified for the Alliance:

- identify and increase the opportunities for global cancer control collaboration;
- provide an authoritative voice for global cancer control awareness and actions;
- promote global tobacco control efforts;
- advocate for national efforts in cancer control;
- serve as a communications resource for Alliance members and others;
- increase synergy and cooperation among

[1] Adapted from a text contributed by the Secretariat of the Global Alliance for Cancer Control.

organizations with an interest in cancer control and already working in countries around the world (e.g. International Atomic Energy Agency radiotherapy programmes in developing countries and those conducting multi-country clinical trials);
- propel cancer-related issues on to the public health agenda. Essential public health functions jointly tested by the WHO Pan American Health Organization (Washington, DC) and the Centers for Disease Control (Atlanta, USA) could serve as a model. The functions include: surveillance, health promotion, workforce development, assessment of the quality of care and access to care, and research and development.

To help narrow the list of proposed actions, those selected were expected to meet the following criteria:
- be meaningful, practical, achievable and fundable
- lead to an early success for the Alliance
- be appropriate for the Alliance
- be proportionate in terms of the effort expended in relation to the expected impact.

3. Strategies for the first year

Based on the above criteria, the following actions were identified as priorities for the coming year:

(a) Increase the importance of cancer control on the global health and economic agendas

Cancer is not currently considered a major global issue in the same way as AIDS, for example. It is critical to establish a climate in which cancer is seen, discussed and acted upon as a major global issue by international organizations. For example, the agendas for the G8 meetings have never addressed cancer as an issue of global importance. Advocacy with such leadership groups is important for gaining international and national attention and taking action to address the cancer burden. Equally important is the need to build awareness of cancer-related issues within the general population in order to stimulate public pressure on these leadership groups to act.

Thus it was decided to develop a two-pronged strategy for increasing the importance of cancer on the global health agenda:
(i) Develop a strong case statement including the following:
- Compelling facts on the extent of the cancer burden in human, social and economic terms.
- A strong sense of urgency that action is required now in order to save millions of lives in future years; cancer as a problem cannot be put off for action by future generations.
- The time to act is now and 'you' must be the ones to act.
- Clear and compelling arguments for why international and national leaders should care about the cancer problem and why they should consider doing things differently than at present.
- A concise definition for cancer control that both explains its comprehensive scope and, where possible, links it to other national and international priorities (e.g. the cost of health care).
- A proposed agenda for action that the Alliance would like to see adopted and which might include such things as: publicly endorsing global and national cancer control efforts; provision of resources for global and national cancer control efforts; taking a major, ongoing leadership role in tracking global cancer control efforts; and holding constituents and peers accountable for their action (or inaction) in cancer control efforts.
- A strong clear statement of what will happen if we fail to take action to reduce the global cancer burden, i.e. what are the consequences of failing to act.

(ii) Put cancer as an item on the global leadership agenda. For example:

- The G8
- World Economic Forum's Global Health Initiative
- International development agencies
- Regional organizations such as the Organization of American States and the WHO Pan American Health Organization
- United Nations bodies
- International media.

(b) Continue the development of the Alliance

- The concept of the Alliance has merit and should continue to be developed.
- It was agreed that, for the time being, the Alliance will remain an informal confederation of cancer-concerned organizations and that the structure should be as open as possible.
- UICC has agreed to serve as the Secretariat.
- A small group of WHO/UICC staff will continue to coordinate the process of building up the Alliance. This will include: a communication structure to keep Alliance members informed of progress; engaging Alliance members in its advocacy work; and recruiting additional Alliance participants.

(c) Tobacco statement

At the World Conference on Tobacco or Health in Helsinki in August 2003, the members of the Alliance for Cancer Control issued its first public statement in which it supports and accepts shared responsibility for world wide implementation of the WHO Framework Convention on Tobacco Control (FCTC). The FCTC adopted by the World Health Assembly in 2003 sets norms and standards for national legislative action and multilateral cooperation for tobacco control.

Section 2

Global Alliance for TB Drug Development[2]

1. Central problem

One of the most contagious infectious diseases, TB is today at its highest level ever, with one third of the world's population infected. The disease is also responsible for more AIDS-related deaths than any other opportunistic infection. Every year, more than 8 million of those infected with the TB bacillus develop new cases of active TB and 2 million people die from the disease.

Successful treatment of the disease involves a cumbersome, six-month, combination-drug regimen delivered through the DOTS (directly observed treatment, short-course) strategy. However, this treatment is currently reaching only 30% of TB patients worldwide. Moreover, the rise of drug resistance and the convergence of the TB and HIV epidemics have intensified the need for better, faster-acting therapeutics for tuberculosis.

[2] Adapted from a text contributed by the Secretariat of the Global Alliance for TB Drug Development.

The long and complex regimen imposed by the current class of TB drugs – the most recent of which was introduced in the 1960s – is one of the greatest obstacles to controlling the disease. Because of the length of treatment and side-effects, patient compliance is often poor, resulting in drug resistance. It also involves a considerable health system cost in terms of direct patient observation: at least US$ 4 billion a year worldwide. This, in turn, further handicaps TB control programmes, fuels drug resistance, and prevents the systematic treatment of latent TB infection, the reservoir for the epidemic.

Recognizing these alarming trends, the Amsterdam Ministerial Conference on Tuberculosis and Sustainable Development, held in March 2000, established new DOTS targets and called upon the international development community to dramatically increase support for TB control efforts. In addition, the Conference called for accelerated research for the development and delivery of new tools in a manner consistent with affordability and accessibility.

New and faster-acting drugs will radically transform the fight against TB in three important ways and the new regimen will become the cornerstone of effective TB control. The target drugs will:

- **Accelerate DOTS:** By shortening to two months or less – or otherwise simplifying the course of treatment – the new regimen will lower the incidence of toxic side effects, improve patient compliance, and increase cure rates. A shorter treatment period will also reduce the costs of TB treatment both for patients and health systems.
- **Treat multi-drug resistant TB (MDR-TB):** By effectively treating resistant strains, a new drug would have a profound impact on the treatment and control of MDR-TB.
- **Improve the treatment of latent infection:** By shortening and improving treatment of latent infection, a new drug will lower TB transmission rates. Effective treatment of latent TB is particularly important for patients co-infected with HIV.

By reducing the time of therapy, combating drug-resistant strains and improving the treatment of latent TB infection, affordable, faster-acting TB drugs will treat thousands more patients effectively – thereby helping reach the TB control targets of the Millennium Development Goals.

2. History of the partnership

(a) Creation

In February 2000, 120 representatives from academia, industry, major agencies, NGOs and donors from around the world adopted the "Declaration of Cape Town" which provided a road map for action towards TB drug development and the impetus for the creation of the Global Alliance for TB Drug Development ("TB Alliance") in October 2000.

(b) Central objective

Using a public-private partnership approach, the TB Alliance's primary goal is to develop within a decade new anti-TB drugs that shorten and/or simplify treatment, are effective against multi-drug resistant TB, and address both active and latent forms of the disease. At the centre of this mission is the commitment requirement that the resulting medicines be accessible and affordable to all in need.

In working toward this goal, the TB Alliance has established itself as the primary catalyst for TB drug development efforts worldwide. As part of this catalytic role, the TB Alliance invests in platform technologies designed to enhance the probability of success for compounds that enter the drug development pipeline worldwide.

(c) Main strategies

To deliver a new anti-TB drug within a decade,

the TB Alliance is building, developing and managing a portfolio of promising compounds. The TB Alliance also stimulates TB drug development by providing a framework to support and coordinate various initiatives at every stage of the drug development process. On both fronts, the TB Alliance engages in partnerships with a range of organizations worldwide, including academic institutions, government research laboratories and public health institutions, NGOs, the pharmaceutical industry and contract research organizations.

The TB Alliance was designed to maximize the commitment of both public and private partners to ensure that new drugs for TB are affordable and accessible in poor countries. The public-private partnership model under which it operates is an ideal mechanism to overcome the lack of market incentives that brought TB R&D to a virtual standstill after the 1960s.

The mechanism is designed to ensure that promising anti-TB drug candidates move quickly through all stages of development, receive regulatory approval, are priced affordably and are transferred into effective and accessible clinical use.

Procurement and distribution of resulting medicines will be designed in close collaboration with the Stop TB Partnership's Global Drug Facility and the Global Fund to Fight AIDS, TB and Malaria to ensure equitable access and affordability in endemic countries.[3]

(d) Partners

Win-win agreements with industry and public sector. The TB Alliance forms partnerships where both risks and incentives are shared. In designing partnerships and agreements, the TB Alliance places a high priority on drug affordability, adoption and accessibility in endemic countries (the "AAA" strategy). An emphasis on win-win agreements allows the TB Alliance to balance affordability and health equity with incentives for collaboration. The organization pursues intellectual property rights in order to ensure the availability of novel technologies for public benefit.

In addition to a landmark licensing agreement for the promising anti-TB compound PA-824 with Chiron Corporation in 2002, the TB Alliance has implemented ways to partner with pharmaceutical and biotechnology companies with drug development know-how and capacity. In 2003 Novartis's newly launched TB research facility in Singapore, the Novartis Institute for Tropical Diseases, pledged to team with the TB Alliance to manage the later-stage development of novel compounds it identifies. Novartis has also committed to make these technologies available without royalties in endemic countries.

Endemic countries. As the TB Alliance surveyed R&D capacity globally, it identified promising compounds in countries such as India and Korea, and qualified preclinical development facilities in countries such as South Africa and Brazil. On the drug development front, these countries could have compounds to expand the portfolio, and could offer their laboratories' preclinical capacity to develop the portfolio. At the clinical development stage, patient enrolment is critical. The TB Alliance works in partnership with government agencies in leading endemic countries, as well as with individual companies and laboratories for specific drug candidates and trials.

[3] The Stop TB Partnership is a public-private collaboration hosted by WHO which aims to expand, adapt and improve strategies to control and eliminate TB.

(e) Organization
The TB Alliance has a Board of currently 11 members, representing international and national government agencies, pharmaceutical and biotechnology companies, private foundations and NGOs.

A 15-member Scientific Advisory Committee assists in evaluating proposals and projects under consideration for investment as part of its TB drugs portfolio. The Committee provides technical expertise on drug research, development, manufacturing and distribution, as well as other medical and scientific issues.

The TB Alliance includes in its governance framework a group of institutions that join in a "Stakeholders Association" and have certain roles and responsibilities in advising, guiding and supporting the organization. Stakeholders represent the breadth of institutions worldwide who share a clear interest and a significant stake in ensuring the development of new TB drugs through the TB Alliance. They include representatives from developing nations, governments, NGOs working in TB, foundations and industry.

Stakeholders participate in the TB Alliance's outreach and advocacy efforts and advise and support the Board of Directors on issues including activities related to access to anti-TB medicines. These responsibilities are exercised through ongoing contacts with the leadership of the organization and through the nomination of candidates for the Board of Directors and the election of a Stakeholders Association President to sit on the Board of Directors.

(f) Annual budget and sources of financing
With a rapid expansion of the portfolio in 2002 and 2003, the TB Alliance budget reached US$ 5.6 million in 2003 and is expected to increase to US$ 14.4 million in 2004, with the lion's share of expenses devoted to an outsourced R&D project. These R&D investments are supporting the continued portfolio expansion and projects that lay the groundwork for clinical trials.

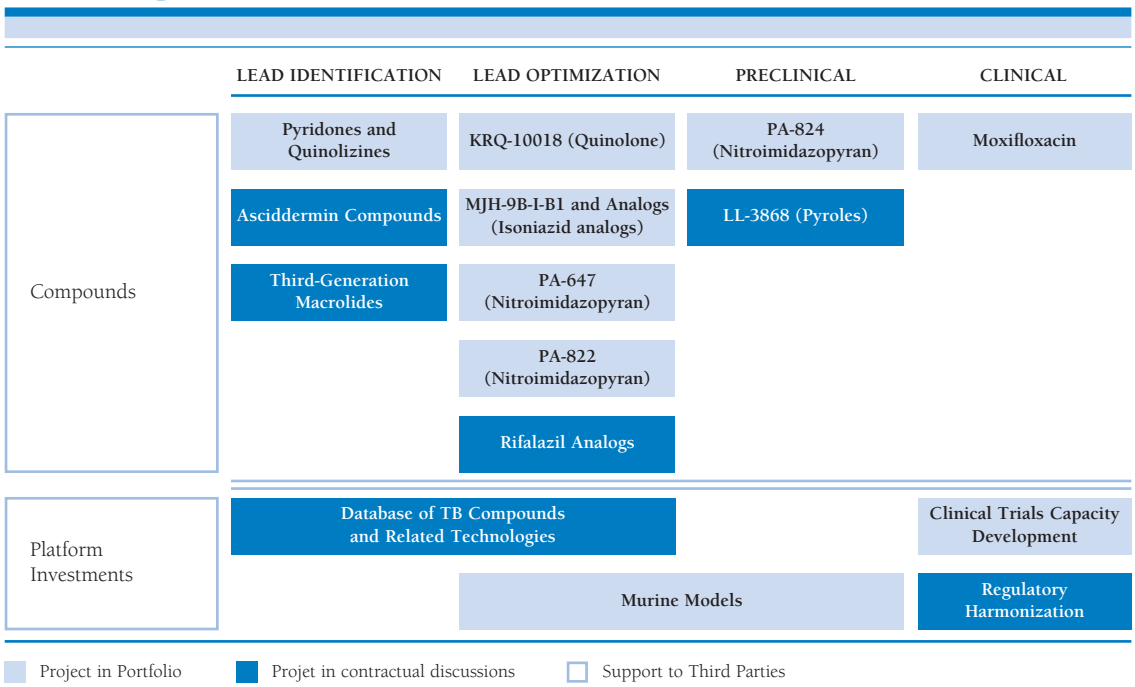
The TB Alliance was launched with seed funding from the Bill and Melinda Gates Foundation and Rockefeller Foundation. Further funding also came from the Dutch Ministry of Development Cooperation through the World Health Organization. In addition, the National Institute of Allergy and Infectious Diseases (NIAID) provides in-kind support, offering access to in-house capacity and a network of contractors and grantees. Other contributions include investments in projects by members of the TB Alliance Stakeholders Association, such as the Bayer-CDC moxifloxacin trials supported by the CDC, the clinical trial infrastructure capacity building currently under way by CDC and those planned by the European and Developing Countries Clinical Trials Partnership (EDCTP) through joint calls for proposals with the TB Alliance.

3. Main achievements in 2002-2003
The TB Alliance has assembled a portfolio of 10 compounds in lead identification, lead optimization and preclinical development phases and catalysed the phase II clinical trial in first line treatment of a second-line drug (Insert 9.2.1). Compounds were identified through proactive searches, through calls for proposals and through an active, worldwide business development programme.

The lead novel compound in the TB Alliance portfolio, PA-824, acquired from Chiron Corporation, is widely recognized as one of the most promising new anti-TB compounds and could be in clinical trials by 2005. Another compound (KRQ-10018) is at the lead optimization stage at the Korea Research

Insert 9.2.1

Investment portfolio



Institute of Chemical Technology (KRICT) in Taejon, South Korea. This has demonstrated activity and specificity for TB and is now to be further evaluated for preclinical efficacy. In addition, compounds in the quinolizine, quinolone and pyridone families are being synthesized and tested by KRICT and its partner, the Yonsei University in Seoul. Another drug, moxifloxacin (a quinolone with worldwide regulatory approval developed by Bayer AG for use in the U.S. for the treatment of skin and upper respiratory tract infections and pneumonia) has shown high levels of activity against TB and recent in vivo experiments confirmed its promise to significantly shorten therapy. It is now being tested in phase II clinical trials, facilitated by the TB Alliance and carried out by the TB Trials Consortium of the CDC.

In addition, the TB Alliance has invested in selected platform technologies that support TB drug development worldwide. These investments help pave the way for clinical trials, drug registration and lead generation. For example, the TB Alliance is supporting the standardization of a network of 15 clinical sites in Africa, Asia and South America. The project, which involves staff training and the upgrading of laboratories, is intended to provide the TB community with a set of potential clinical trial sites and establish guidelines for clinical trials to be used with new anti-TB drugs.

4. Expected outputs for 2004-2005

(a) Continued portfolio expansion and development. Over the next two years, the TB Alliance will continue to expand its portfolio and develop promising compounds with public and private partners worldwide. The TB Alliance will also continue to invest in core technologies that enhance R&D capabilities in the field of anti-TB drugs. Specific targets for 2004-2005 include:

- enter PA-824 into clinical trials; accelerate clinical trials with other promising advanced stage compounds, such as moxifloxacin;
- develop a back-up development programme for PA-824 using its analogs;
- acquire 5-6 additional compounds in the portfolio;
- expand organizations and institutions within its outsourcing network;
- expand the R&D team with in-house expertise in research, clinical development, regulatory affairs and project management.

(b) Initiation of clinical trials and regulatory approval. With the rapid progress of later-stage portfolio investments, the TB Alliance is anticipating the need for greater worldwide clinical capacity for the development of compounds such as PA-824 and moxifloxacin. Additional lead compounds are under review that will, if selected and successful, require clinical trials to be initiated in 2004-2005. Specific targets include:

- assess, select and strengthen priority sites for clinical trials in endemic countries (i.e. in several African and South American countries, as well as India and South Korea);
- establish collaborative agreements with endemic countries and other partners conducting clinical trials, such as the TB Trials Consortium (TBTC), the European and Developing Countries Clinical Trials Partnership (EDCTP) and the South African Medical Research Council;
- plan the conduct of clinical trials;
- initiate projects to facilitate regulatory approval.

(c) Enhanced platform investments. Over the next two years, the TB Alliance plans to continue its support of platform investments, as well as add new projects. These could include efforts such as:

- continued support for animal models;
- projects to enhance development of world-wide clinical trial capacity development;
- development of regulatory guidelines for TB drug development;
- development of a database for the study of surrogate markers to shorten clinical development time;
- establishment of a TB drug database and/or mapping exercise to comprehensively "map" all activities of the Stop TB Working Group members that directly support the development of new TB drugs.

(d) Expanded outreach to mobilize patient support worldwide. Over the next two years, the TB Alliance plans to expand a series of outreach initiatives, which complement the primary tasks related to developing and testing new drug candidates. It is critical that the TB Alliance continue to mobilize technical resources and expertise for drug development, as well as secure the conditions necessary for the full adoption of and access to new TB drugs. These activities include:

- develop momentum through public awareness and education, and enrol patient groups;
- foster the development and participation of patient networks and enrol support from healthcare workers;
- mobilize endemic countries and develop high-level collaborative agreements;
- lay further the groundwork to ensure access, including close collaborations with global procurement mechanisms such as the Global Fund and the Stop TB Partnership's Global Drug Facility;
- ensure early adoption through the mobilization of WHO and endemic countries' national TB control programmes.

5. Conclusions and longer term perspectives

Since the publication of the previous *10/90 Report*, the TB Alliance has transformed itself from a fledgling start-up into an expanding drug development operation. The organization is well grounded, with a rapidly expanding portfolio.

The TB Alliance is also fully integrated in the global health community. It fills a critical piece of the essential medicines puzzle, providing the required "push" mechanism that complements the "pull" effect of initiatives such as the Global Fund and the Global Drug Facility.

As the TB Alliance enters this next crucial phase of drug development, the support of additional partners and donors will be critical to the sustainability and final success of the enterprise. In particular, the initiation of clinical trials, including the establishment of both infrastructure and a network of facilities, will require a rapid scaling up of financial support and expanded endorsements.

Over the last two years, the TB Alliance has made rapid progress in the search for a novel cure. For the first time in 40 years, a robust pipeline of promising new TB drugs is being developed and moving through milestones, with the help of new platform investments. The TB drug development environment worldwide has a new catalyst and new purpose. With the support of its partners and donors, the TB Alliance holds the promise to expand the armamentarium against one of the oldest deadly infectious diseases, and deliver a faster cure, available and affordable to all patients in need, especially in the developing world.

Section 3

HIV/AIDS[4]

1. Problem overview

The global HIV/AIDS epidemic killed more than 3 million people in 2003 and an estimated 5 million became newly infected with HIV – bringing to 40 million the number of people living with the virus worldwide, most of them in low- and middle-income countries. Almost 2000 children under 15 were infected every day, bringing to 2.5 million the number of children living with HIV. Of the 12 000 people aged 15 to 49 infected daily, almost half are women and about 50% are young people aged 15 to 24. With only an estimated 400 000 people receiving antiretroviral drugs (7% of the estimated 5.9 million people who will die within the next two years without access to antiretroviral drugs), AIDS kills more people annually than tuberculosis or malaria.

Globally, the AIDS response is moving into a new phase. Political commitment has grown stronger, grass-roots mobilization is becoming more dynamic, funding is increasing, treatment

[4] This text was contributed by Catherine Hankins, UNAIDS, Geneva.

programmes are shifting into gear, and prevention efforts are being expanded. But, measured against the scale of the global epidemic, the current pace and scope of the world's response to HIV/AIDS fall far short of what is required.

2. The role of research

Research plays a critical role in guiding an expanded response to HIV/AIDS, whether it focuses on examining the key determinants and effects of political will to address the epidemic, the epidemiology of HIV, behavioural and structural determinants of HIV transmission, or the characteristics of effective evidence-based interventions to reduce transmission, improve health care and support services, and address stigma and discrimination. It is critical that not only the results of research but the process itself should have clear benefits for those areas of the world hardest hit by the epidemic.

From a scientific point of view there are advantages to conducting research in countries where transmission rates are high and substantial numbers of people are living with HIV.

3. Research issues

HIV research is having valuable spin-offs for our understanding of other infectious, malignant, neurological, autoimmune and metabolic diseases. It has led to new paradigms in drug design, development and clinical trials, and has helped speed up the approval process. It has also greatly increased our understanding of sexual and drug-taking behaviour as well as of the constructive responses that individuals and communities have taken to reduce transmission. Examples of the latter include study of the impact of multicultural, inclusive, participatory approaches in national level responses; the effects of increased schooling for girls; the impact of harm reduction strategies; and the effectiveness of methods for adapting cultural practices to reduce HIV transmission risk while retaining their social meaning. Some research priorities in the fields of epidemiology, economics, prevention and care are listed below.

(a) Epidemiology and economics

The priorities for research in epidemiology and economics include:

- Improved methodologies to monitor, model and estimate current and future epidemic dynamics.
- Research to evaluate the economic determinants and consequences of the HIV epidemic at micro- (household), meso- (community/district) and macro-levels in different settings.
- Development of improved methodologies for documenting actual expenditures, estimating the costs of comprehensive prevention and care programming in resource-constrained settings and tracking resource flows.

(b) Vaccines

Vaccine development is a complex research challenge from the biomedical, ethical and societal point of view but is critical to eventual control of the pandemic and could also have therapeutic benefits for people living with HIV. Lag times in the development and testing of candidate vaccines must be reduced and numerous parallel and comparative approaches tried rather than the current linear, incremental process. A Global HIV Vaccine Enterprise is being launched to achieve a more integrated and efficient HIV vaccine research initiative with the goal of developing a safe and effective HIV vaccine in the shortest time possible.[5] It is clear that

[5] Klausner R, Fauci A, Corey L et al. "The need for a global HIV vaccine enterprise" in *Science* 2003; 300: 2036-39.

populations at risk must be integrally involved in the development of vaccine trials for a number of reasons, including ensuring that trial conduct will be culturally sensitive, avoiding increased risk through misperceptions of benefits of trial participation and encouraging planning for the roll-out of an effective vaccine.

(c) Behavioural and social science

Developing, evaluating and scaling up effective behavioural, social and structural prevention strategies to reduce HIV transmission are key to slowing the epidemic. Among the most pressing research priorities are:

- Study of the implications for HIV transmission of the development, testing and implementation of effective prevention strategies addressing complex issues of gender and sexuality, changing patterns of drug use and socioeconomic determinants of risk.
- Better understanding of the correlates of initiation, maintenance and renewal of HIV risk reduction at individual, group and community levels and operations research to assess strategies to strengthen these.
- Evaluation of the net effect on transmission of reduced viral load due to antiretroviral treatment and possible off-setting increased behavioural risk, i.e. the effects of changing perceptions of HIV infection in the face of treatment roll-out.
- Microbicides: assessing combination approaches such as combining physical and chemical barriers, combining microbicides with different specificities and mechanisms of action, rapidly increasing the number of potential microbicides in the research pipeline.
- Improving research methodologies in behavioural and social science, developing innovative approaches for investigating the psychosocial effects of HIV on communities and ways of mitigating these and strengthening community capacity to respond.
- Research into the determinants and consequences of stigma and discrimination and effective ways of reducing these.

(d) Clinical, therapeutic

This field includes both basic science and operations research. Priorities relevant to people living with HIV around the world include discovering new viral and cellular targets and developing therapeutic agents that target drug-resistant virus, have activity in viral reservoirs and cellular compartments, have low toxicity, improved efficacy and are easy to take (high treatment adherence potential). Some specific examples are:

- Continued development of safe, effective, feasible, conveniently administered agents to reduce mother-to-child transmission (MTCT), with special emphasis on breast feeding which is generally the safest infant feeding option but carries significant risk of HIV transmission. Operations research to study linkages between MTCT programmes and treatment for women and their families (MTCT-plus).
- Development and testing of appropriate technology for monitoring HIV treatment in patients in resource-constrained settings.
- Study of the effectiveness of community-based adherence support on clinical progression and therapeutic success as access to antiretroviral treatment is scaled up.
- Investigating optimal therapeutic strategies and their clinical, operational and economic implications in resource constrained settings: early versus late initiation of treatment, change of drugs, sequencing of therapies, effects of treatment interruptions.
- Study of host virus interactions in women and men and their significance for disease progression and treatment.
- Bi-directional effects of co-infection with and treatment of TB, malaria and hepatitis B on HIV disease progression and drug interactions.

4. Selected research networks in HIV/AIDS

While it is not possible to enumerate all the research networks addressing HIV/AIDS, some prominent networks are described below.

(a) International Partnership for Microbicides (www.ipm-microbicides.org)

The International Partnership for Microbicides (IPM) was established in 2002 to accelerate the discovery, development and accessibility of safe, effective, affordable and easy-to-use microbicides to prevent transmission of HIV. Microbicides are products such as gels or creams that women can use to prevent or significantly reduce the transmission of HIV and possibly other disease-causing organisms during sexual intercourse. Ideally, they could be used without the male partner even knowing it. Microbicides could be delivered in other forms, including films, suppositories, and slow-releasing sponges or vaginal rings. Microbicides are essential to the protection of women because they are several times more at risk than men of contracting HIV during sexual intercourse. Research suggests that even a partially effective product that reaches a limited number of women worldwide has the potential to avert nearly three million infections in just three years.[6] Several promising candidates are already in the pipeline.

In seeking to facilitate the development of both contraceptive and non-contraceptive microbicides that ideally would be effective for both vaginal and rectal use, IPM's core areas of work are in R&D and ensuring access to effective products when these are developed. In particular, IPM aims to increase the efficiency of the development and delivery of a microbicide by expanding the breadth and level of public and private sector funding; identifying critical gaps in R&D, access and advocacy; leveraging partnerships with both new and existing public and private players; and helping to raise awareness of microbicides worldwide. Already IPM has established a standardized screening procedure for new compounds, acquired formulation capabilities and begun work on trial capacity and regulatory strategies.

Achievements

IPM was launched with support from the Rockefeller Foundation. Since that time, it has already attracted significant donor support from five European governments – Denmark, Ireland, the Netherlands, Norway and the UK – as well as the Bill and Melinda Gates Foundation, the World Bank and UNFPA. With these funds, IPM has built a team of staff and consultants with expertise in molecular biology, antiviral activity, formulations technology, regulatory affairs, clinical trial site development and access issues.

IPM's model is to seek out the most promising new microbicide technologies and form public-private partnerships to accelerate and increase the efficiency of product development at every stage, including formulation and drug delivery research, clinical trials and manufacturing. IPM also convenes industry experts and makes targeted investments to develop resources and technologies that will be shared with others to advance the entire field. These capacity-building activities include animal model testing, clinical trial site development, and research into drug formulation and delivery. The microbicide field is different from others addressing neglected public health technologies because a number of product developers already exist.

[6] Watts C et al. *Microbicides,* Antwerp, 2002.

However, the vast majority of the entities currently involved are small biotechnology companies, non-profit organizations and academic institutions with limited funding and capacity. IPM will form partnerships with them to address critical gaps and obstacles and promote rapid product development. IPM is also working to enlist large companies with antiviral and formulations technology into the field.

Of the estimated US$ 775 million in product development costs required over the next five years to develop the entire portfolio, only US$ 230 million has been committed so far. At the end of 2003, 14 microbicides were in clinical trials and planning was under way for five products to enter phase III effectiveness trials in 2004.

(b) Monitoring the AIDS Pandemic (www.mapnetwork.org)

Monitoring the AIDS Pandemic (MAP) is a collegial network of internationally recognized technical experts seeking to assess the status and trends of the global HIV/AIDS pandemic. MAP was created in 1996, through the collaboration of the AIDS Control and Prevention (AIDSCAP) Project of Family Health International, the François-Xavier Bagnoud Centre for Health and Human Rights of the Harvard School of Public Health, and UNAIDS.

MAP's more than 100 members in 40 countries represent a wide range of disciplines, including epidemiology, mathematical modelling, economics, social and behavioural science, public health and international development. Members are recruited through a nomination process which is currently guided by the Chair and Board of Directors.

Achievements

MAP strives to make its greatest impact by providing objective, timely and high-quality analyses of the most current information about the pandemic for the improvement of prevention, care and social interventions worldwide. MAP workshops and membership meetings are held in conjunction with regional and international HIV/AIDS conferences. This enables MAP to function on a small budget and to distribute results from its analyses promptly to conference participants. Specific workshops are convened as needed, with expertise drawn from MAP members and other invited experts. Regional experts are encouraged and supported by MAP in the collection, analysis, synthesis and dissemination of regional information, which is then incorporated into MAP's global reports. Reports published by MAP in conjunction with international HIV/AIDS events are compiled and printed in local official languages and distributed on site.[7] They are also translated into other languages to ensure a wide readership.

MAP works toward building consensus in an atmosphere of collegiality, cultural sensitivity, and mutual respect for conflicting points of view. It functions on the basis of volunteerism and personal and institutional contributions, with limited financial support from international organizations, including UNAIDS, and thus provides an independent perspective on issues raised by the HIV/AIDS pandemic. MAP involves networking through exchanging knowledge and data from around the world;

[7] Available from www.mapnetwork.org: *HIV Infection and AIDS in the Americas,* Havana Cuba 2003; *The Status and Trends of the HIV/AIDS Epidemics in the World,* Barcelona, Spain 2002; *The Status and Trends of HIV/AIDS/STI Epidemics in Asia and the Pacific,* Melbourne Australia 2001; *HIV/AIDS in the Americas: An Epidemic with Many Faces* November 2000; Durban MAP Provisional Report, July 2000; *Kuala Lumpur MAP Provisional Report,* October *1999.*

collection, analysis and dissemination of information on the trends and status of HIV/AIDS; and capacity building to expand national capacities to respond to the pandemic through training and expert advice.

(c) International AIDS Vaccine Initiative (www.iavi.org)

Founded in 1996, the International AIDS Vaccine Initiative (IAVI) is a global organization working to speed the development and distribution of preventive AIDS vaccines. IAVI's work focuses on mobilizing support through advocacy and education, accelerating scientific progress, encouraging industrial participation in AIDS vaccine development and assuring global access. IAVI was born out of the recognition that the best long-term solution to the growing AIDS epidemic is the development of an effective AIDS vaccine that can be quickly distributed to all who need it. IAVI is committed to changing business as usual by working across borders and sectors to rapidly move suitable vaccine candidates into clinical testing, identify and develop promising candidates and address key scientific challenges. IAVI focuses on viral strains prevalent in developing countries and works to ensure that vaccines will be accessible and readily available in developing countries at reasonable prices. IAVI enlists developing country scientists, policy-makers, NGOs, international organizations, civil society and industry to support and catalyse activities within countries towards the development of an AIDS vaccine.

Achievements

IAVI is probably best known for its efforts to accelerate the development of preventive AIDS vaccines by creating awareness of the need for a vaccine, accelerating applied vaccine development and advocating for incentives to encourage industrial involvement. IAVI's *Scientific Blueprint for AIDS Vaccine Development,* issued in 1998, outlined the steps needed to assure the earliest possible emergence of an effective vaccine against AIDS. Since then, IAVI has created and funded several international AIDS vaccine development partnerships and supported additional product development efforts for four different vaccine strategies. IAVI is also working with a consortium of leading AIDS laboratories to design a fifth vaccine strategy.

The *Blueprint* outlined a five-step global action plan to ensure timely use of a preventive vaccine in all at-risk populations worldwide, minimize delays in vaccine supply and delivery, while respecting intellectual property, and ensure that adequate incentives are in place for the private sector.

In addition to the *Scientific Blueprint,* IAVI brought new leadership to the AIDS vaccine field by investing in a series of innovative international vaccine development partnerships that brought together researchers and scientists in industrialized and developing countries to move promising vaccine candidates toward clinical testing. In the past five years, IAVI has helped advance five vaccines into human tests in 13 clinical trials in seven countries.

IAVI negotiated ground-breaking intellectual property agreements to help ensure that the fruits of vaccine research will be readily available in developing countries. *The IAVI Report,* the first periodical devoted to chronicling HIV vaccine research, has more than 10 000 readers in 140 countries. IAVI put AIDS vaccines onto the global policy agenda, winning significant increases in government funding for AIDS vaccine research and development and laying the foundation for AIDS vaccine clinical trials in East Africa (Kenya and Uganda), South Africa, India, Rwanda and China. With the World Bank it helped establish a task force to study

new financial mechanisms to spur the development, and eventual purchase, of AIDS vaccines for developing countries.

(d) The African AIDS Vaccine Programme (www.who.int/vaccine_research/diseases/hiv/aavp/en/)

The first HIV vaccine trial in Africa was conducted in Uganda in 1999, 12 years after the first trial in the United States (1987). Although more than 30 different HIV candidate vaccines have been tested in approximately 70 phase I (safety) or phase II (immunity testing) trials, only four of these have been conducted in Africa (Kenya, Botswana and Uganda). In June 2002, convened by WHO, UNAIDS and the Southern African Development Community (SADEC), a group of 40 African scientists, community representatives and decision-makers met in Nairobi and produced a powerful advocacy document entitled *African Strategy for an HIV Vaccine*. The strategy includes a situation and response analysis, vision and goals, guiding principles, strategic milestones and an activity framework to accelerate HIV vaccine development in Africa. To implement this strategy, the African AIDS Vaccine Programme (AAVP) was established in November 2002 with support from WHO and UNAIDS. The organizational structure includes a steering committee, thematic working groups, forums, affiliated African institutions, sponsors, a secretariat (the WHO-UNAIDS HIV Vaccine Initiative) and a proposed coordinating board composed of representatives from the scientific community, countries, host communities and donors.

The AAVP involves all countries in the region, coordinates a transparent and collaborative process with equitable participation of multiple partners, promotes research respecting human rights, aspires to the highest ethical and scientific standards, encourages and supports simultaneous development and evaluation of vaccine candidates appropriate for the region while contributing to the development of HIV vaccines in general as an international public good, and is planned as a long-term and sustainable effort. In addition to strategic milestones indicating the number and phase of clinical trials to be developed by specified dates, the AAVP is implementing a number of research/training/capacity building exercises in five areas: biomedical (laboratory and clinical studies); population-based studies (epidemiology and social-behavioural research); ethics, law and human rights; national strategic planning and community preparedness.

Achievements

In 2002-2003, the AAVP completed an inventory of existing facilities through questionnaires and site visits in nine countries and developed a database of laboratory resources and needs. More than 80 African scientists were trained in virology and immunology; existing ongoing cohort studies in Africa were assessed as potential sites for vaccines trials, a 15-country review of ethical capacity was completed; training workshops for community groups were conducted and strategies to engage communities were developed. AAVP also developed a policy statement on the implications of genetic variability for HIV vaccine development, supported the development of national AIDS vaccine plans in seven countries and initiated an African network on research ethics focused on HIV vaccines. A number of advocacy materials were developed and a workshop on strategies for the development of vaccine trial sites was conducted in Addis Ababa. AAVP broadened its funding base to include the government of Canada, IAVI and the Swedish government.

AAVP has a seven-year work plan and will focus in 2004-2005 on strengthening sites and infrastructures for the conduct of HIV vaccine clinical trials. This will involve

strengthening virology and immunology expertise in selected laboratories and clinical trial capacity in selected centres, developing standards of laboratory assays for vaccine immunogenicity evaluation, developing generic protocols and supporting research on key socio-behavioural issues and strengthening collaboration with African countries in the development and implementation of national AIDS vaccine plans. AAVP will also develop a normative framework for the conduct of human trials in Africa. This will involve creating consensus on the norms and regulations under which trials are conducted to ensure that the rights of volunteers are fully protected; strengthening ethical review capacity in selected countries; providing guidance for regulatory decisions and supporting national regulatory authorities in the development of criteria and procedures for approving/monitoring clinical trials and for the licensing and use of future HIV vaccines; and supporting the development of policies for the introduction and use of HIV vaccines, including access.

(e) HIV Vaccines Trials Network and HIV Prevention Trials Network

These two networks, the HIV Vaccine Trials Network (HVTN) and the HIV Prevention Trials Network (HPTN), were created by the NIH in the United States. Both networks receive primary support from the National Institute of Allergy & Infectious Diseases (NIAID) Division of AIDS (DAIDS). The HPTN receives additional support from other NIH components, including the National Institute on Drug Abuse, the National Institute of Child Health and Human Development and the National Institute of Mental Health. International research training activities of both networks are coordinated with the NIH Fogarty International Center.

- **The HIV Vaccine Trials Network (HVTN, www.hvtn.org)**

Established in 1999, the HVTN conducts all phases of clinical trials, from evaluating candidate vaccines for safety and the ability to stimulate immune responses, to testing vaccine efficacy. An international collaboration of scientists, its mission is to develop and test preventive HIV vaccines that will be effective against all isolates and in people throughout the world to reduce the frequency of seroconversion, progression of HIV and transmission of HIV. This is done through multi-centre phase I, II and III clinical trials of candidate HIV vaccines in a global network of more than 12 domestic and 12 international sites. The HVTN has established strong collaboration with vaccine developers and a wide variety of scientists working in the areas of HIV virology, immunology and pathogenesis. The scientific collaborations and scope of exploratory work within the HVTN are by design expansive and more extensive in scientific depth and breadth than in previous vaccine trials networks. The HVTN also has strong relationships with community NGOs and with a wide variety of international organizations involved in the design and conduct of HIV vaccine development.

Achievements

Among the priorities of the HVTN has been a focus on identifying whether T-cell responses after vaccination differ by vaccine strain or clade (subtype) in studies which have involved administering similar vaccines, doses and schedules for both northern and southern hemisphere sites, while simultaneously evaluating a variety of HIV strains and clades (subtypes). These data are important in defining whether vaccines with predominant T-cell responses can be used in efficacy trials across wide regions of the globe. Given the continuing genetic evolution and

recombination of isolates of HIV, this is a critical issue.

Much of the work of the HVTN to date has focused on site readiness for vaccine trials with the HVTN planning to conduct as many simultaneous trials as it can. International collaboration provides an ideal platform to encourage cooperation between companies and inventors in defining an optimal vaccine regimen. In its efforts to define novel ways to evaluate vaccine effectiveness, members of the HVTN worked with Aventis Corporation in evaluating a series of HIV vaccine candidates.

The HVTN is currently conducting eight clinical trials of HIV vaccine candidates and a number of trials are planned to start in 2004. The HVTN is also studying participants from HVTN Phase I and II trials who become infected with HIV during the course of a trial. This study examines the virological, immunological and clinical natural history of these infected participants, comparing individuals who received vaccines with those who received a placebo. This will help determine whether vaccinated individuals who become infected might be protected in some way from rapid HIV progression.

- **HIV Prevention Trials Network (HPTN, www.hptn.org)**

The HPTN is a worldwide collaborative clinical trials network that develops and tests the safety and efficacy of primarily non-vaccine interventions designed to prevent the transmission of HIV. Established in 1999, the HPTN carries out its mission through a strong network of expert scientists and investigators from more than two dozen international sites partnered with a leadership group based at three US academic research institutions. Community involvement is an integral feature of HPTN activities.

The strengths of the HPTN include: leadership by experts in the prevention sciences; a coordinated domestic-international research agenda; multi-disciplinary study teams of behavioural, clinical, epidemiological, laboratory, operations and statistical researchers; capability to conduct cross-cultural comparisons among different host and viral populations; emphasis on ethical guidelines in research; and priority placed on community involvement in all aspects of the research process, from trial development through implementation. A global network of HIV Prevention Trials Units (HPTUs), each comprised of a principal awardee institution and its affiliated performance sites, conducts trials in the six HPTN research areas (prevention of MTCT, treatment of other STIs to reduce the risk of sexual acquisition or transmission of HIV, antiretroviral chemoprophylaxis to reduce the risk of sexual HIV transmission, behavioural interventions to reduce sexual transmission risk, interventions aimed at injection drug users, and topical microbicides). Scientific and community representatives from these sites participate fully in scientific decision-making and the governance of the HPTN through membership in all working groups and committees.

Achievements

Research infrastructure development: the development of HPTN international research sites has made the largest single contribution to international clinical research capacity and readiness among NIH-funded research networks. Together with HVTN efforts to develop international sites capable of performing clinical research, HPTN progress in site capacity development has established proven international sites that are now available for participation in research projects conducted by these and other NIH networks. This accomplishment represents an important long-term benefit and will advance the NIH goal of implementing an integrated international programme of research in HIV vaccines, therapeutics, and prevention.

Prevention research studies: HPTN Scientific Working Groups have designed and implemented several new prevention studies. Four site preparedness studies are intended to measure HIV seroprevalence and incidence in specific target populations, and to evaluate and strengthen the capability of new international sites to conduct clinical research. Five phase I/II trials have been conducted to evaluate the safety of candidate topical microbicides and of a chemoprophylaxis intervention for maternal-infant HIV transmission. A large phase II/IIb trial of two topical microbicide candidates is scheduled for implementation in early 2004. Two new phase III trials have been developed and implemented to test the efficacy of a behavioural intervention in injection drug users and to determine the efficacy of STI treatment in reducing the risk of HIV infection. An additional two efficacy trials are scheduled for implementation in 2004. In addition, HPTN has completed five prevention clinical trials initiated under its predecessor, the HIV Network for Prevention Trials.

(f) Other networks and agencies supporting international HIV research

A number of national research organizations play important roles in HIV/AIDS research internationally. These include the Medical Research Council (MRC) of the United Kingdom (www.mrc.ac.uk) which has conducted a number of trials of community-based interventions examining the impact of treatment for sexually transmitted disease on HIV incidence and is preparing sites for microbicide trials. The International Development and Research Centre of Canada co-financed the Nairobi cohort studies which have revealed the genetic basis for partial protection against the virus, while emphasizing the importance of condom provision to sex workers, complementing education strategies. France's Agence nationale de recherches sur le sida (ANRS) has financed a number of research studies in the developing world focused on topics such as strategies to interrupt MTCT of HIV and economic determinants and consequences of the HIV epidemic.

Other networks such as the International AIDS Economics Network (www.iaen.org) bring together researchers interested in studying economics, costing methodologies, resource tracking and the economic impact of the HIV epidemic in resource constrained settings. Several United Nations agencies which are co-sponsors of UNAIDS, play supporting roles in HIV research by convening consensus meetings on topics such as scientific priorities, interpretation of findings and ethical concerns. Examples include the June 2003 meeting convened by WHO on principles and practices for the implementation of ethical guidelines for research on HIV,[8] a meeting the same month on strategic information for the scale-up of antiretrovirals[9] and a WHO/UNAIDS consultation in July 2003 on the standard of care for participants of HIV prevention trials (vaccine, microbicide and behavioural interventions) who become infected during the course of the trials.[10] WHO/UNAIDS guidelines on the ethical conduct of vaccine research have been published[11] along with a number of meeting reports which highlight the discussions that have led to consensus decisions such as the recent WHO-UNAIDS-

[8] www.who.int/hiv/strategic/mt020603

[9] WHO. *Strategic information for antiretroviral scale-up,* Geneva, 2003 (www.who/int/hiv).

[10] WHO/UNAIDS. *Draft report of the WHO-UNAIDS consultation on modalities for access and standard of treatment for participants with intercurrent HIV infections during vaccine, microbicide and other prevention research trials,* 2003 (www.who.int).

[11] UNAIDS. *Guidance document: ethical conduct of vaccine trials in developing countries,* Geneva, 2000 (www.unaids.org).

CDC meeting held to discuss implications for ongoing and future trials before the results from the first phase III trial of an HIV vaccine – the Vaxgen trial – were announced.[12] The World Bank meeting in May 2003 on HIV resistance and its implications for the scaling up of antiretroviral treatment reported a number of priority topics for operational as well as basic research[13] and the Lusaka/Zambia WHO/UNAIDS consultation on the '3 by 5' Initiative produced an agenda of monitoring and evaluation priorities for treatment scale-up.[14]

5. Conclusion

HIV/AIDS research is a global public good which can be translated into the effective delivery of research outcomes for the benefit of all people, particularly the poor. International collaboration and coordination in the field of HIV/AIDS research is critical to the speed of progress toward achieving both the targets of the UN General Assembly Declaration of Commitment on HIV/AIDS and the MDG of halting and reversing the HIV/AIDS epidemic by 2015.

Joint actions, which span the globe through research networks and partnerships between the public sector, academic institutions, the private commercial sector and civil society organizations, bring benefits including quicker generation of research findings, consensus on international standards for the conduct of research and research capacity strengthening. Parallel concurrent efforts with rapid accrual of study participants help to obtain more timely answers to critical questions and can link together diverse approaches and different stages of the research process. International collaboration can lead to consensus on international standards for the conduct of research which respect the human rights of study participants, support the research priorities of host countries, promote community involvement in the design and conduct of research, and ensure that prevention and care interventions that are demonstrated to be safe and effective are made available to all study participants and to other members of the high-risk populations from which they were drawn. Networks contribute to RCS by fostering a critical mass of qualified men and women to undertake research addressing national priorities, participate in policy-making bodies and contribute actively to international research efforts.

[12] WHO/UNAIDS/CDC. *Public health considerations for the use of a first generation HIV vaccine: report from a WHO-UNAIDS-CDC consultation,* Geneva, 20-21 November 2002. AIDS 2003; 17: W1-W10.

[13] http://www1.worldbank.org/hiv_aids/WHOIATCMeeting.asp.

[14] http://www.who.int/3by5/publications/documents/zambia/en/.

Section 4

Initiative for Cardiovascular Health Research in Developing Countries (IC Health)[15]

1. History of the network

(a) Central problem

Over recent decades, many low- and middle-income countries have experienced profound changes in population structure and disease patterns that have fundamentally changed their burden of ill health. As a result, in all but the very poorest countries today, NCDs are leading causes of mortality and morbidity. CVDs such as coronary heart disease and stroke are major contributors to these NCD burdens. Moreover, projections over the next few decades suggest that the number of people dying from CVD or living with diabetes in these regions will double. Unchecked, these "epidemics" will result in the deaths of several million middle-aged men and women annually, since about half of all cardiovascular deaths in developing countries occur between the ages of 30 and 69.

Those who survive strokes or heart attacks will frequently be disabled, often in the prime of their working lives. The hidden costs of disability are generally borne by families, resulting in diminished opportunity for family members to engage in paid employment outside the home. The economic hardships brought about by the death or disability of family wage earners in mid-life has far-reaching consequences for young and elderly dependents. Moreover, the expanding need for expensive clinical care for patients with heart disease or stroke diverts scarce health care resources from other critical areas such as vaccination and HIV/AIDS programmes, with adverse consequences for the health of children and young adults in developing countries. There is increasing evidence that the poor are becoming the most vulnerable victims of the advancing epidemics of CVD in many developing countries, in terms of both increased susceptibility to disease and inability to access appropriate care.

(b) Creation

The Initiative for Cardiovascular Health Research in Developing Countries (IC Health) was established in 1999 as a joint programme of the Global Forum and the WHO Noncommunicable Diseases Cluster to provide a research response to the high and increasing burden of CVD in developing countries. As the accelerating epidemics of CVD threaten the poor in increasing numbers, affecting both women and men, research is essential to identify cost-effective mechanisms for applying existing knowledge and to help bridge critical information gaps by generating new knowledge.

(c) Objectives

The purpose of the Initiative is to stimulate, support and sustain research which will inform policy and empower programmes for prevention and control of CVD in developing countries. The focus of IC Health is the following:

[15] Adapted from a text contributed by the Secretariat of IC Health.

Promoting health research which will enable the early integration of cost-effective interventions for cardiovascular risk reduction in populations and individuals at high risk of CVD into primary health care settings in low- and middle-income countries.

Such research will include studies of risk factor distributions, burden of disease estimates, health care delivery systems, access to health care, operational methods for delivery of vascular risk reduction programmes, sustainable systems for chronic care, the development of dependable referral systems and health policy research. Health system interventions for vascular risk reduction will also be developed and evaluated for cost-effectiveness.

Apart from such operational research, IC Health also undertakes policy research on the macroeconomic effects of CVD and tobacco policy interventions, analytical studies on research road maps and resource flows into CVD research, and capacity building for research in low- and middle-income countries.

(d) Partners

Since its creation in 1999, the IC Health partnership has expanded to include the following institutions: Institute of Medicine (USA), World Heart Federation, National Public Health Institute (Finland), World Hypertension League, International Obesity Task Force, International Institute for Health and Development (Australia), Institut de Médecine Sociale et Préventive (Switzerland), Health Canada, Centers for Disease Control (USA), National Institutes of Health (USA), the International Clinical Epidemiology Network (INCLEN), Medical Research Council of South Africa and National Public Health Institute of Mexico. The partnership thus represents a range of international research agencies, public health institutes and health NGOs. The network of partners is being expanded to include more agencies and institutions in developing countries.

(e) Governance

The Initiative is governed by a Partnership Council, an Executive Committee (drawn from the Partnership Council) and an International Scientific Advisory Committee. Coordination is ensured by the Scientific Secretariat located in New Delhi.

2. Main accomplishments in 2003

In 2003, IC Health activities included the following:

- Establishment and continued expansion of global and regional research networks.
- Establishment of a multi-institutional global partnership council representing diverse but complementary strengths.
- Prioritization of research and creation of a portfolio of research projects which focus on operational and policy research.
- Research workshop on cardiovascular risk reduction in primary health care settings
- Workshop on priorities for research relevant to tobacco control in developing countries (Insert 9.4.1).
- Completion of studies on capacity assessment for control of CVD and diabetes in India, Cameroon, Thailand (Insert 9.4.2).
- Completion of a survey of practice patterns of management of acute coronary syndromes in different health care settings, through developing country research networks.
- Completion of global overview on macroeconomic effects of CVD and initiation of in-depth country case studies.
- Commencing the systematic definition of priorities in CVD research using the CAM.
- Leveraging support for independently financed research projects (cardiovascular risk factor surveillance in industrial populations in India; INTERHEART global

study on cardiovascular risk factors in acute myocardial infarction; eastern collaborative cohort study on cardio-vascular risk factors and events; capacity assessment in Mexico, Guatemala and Nigeria.
- Capacity building for research, through support to World Heart Federation's international ten-day teaching seminars on cardiovascular epidemiology and prevention.
- Assistance to the World Bank in the development of CVD fact sheets; organization of a workshop in Washington D.C. on chronic disease (for World Bank staff); organization of a workshop on NCDs in Chennai, India (for the World Bank-assisted health systems project in the southern Indian state of Tamil Nadu).
- Working with partners (WHO, Global Forum, WHF, CDC) on research, policy advocacy and training-related activities organized by them.
- Technical assistance to research/training workshops organized by regional networks in the Middle East and sub-Saharan Africa.

3. Expected outputs for 2004

(a) Catalytic role for operational research

The recommendations of the research prioritization workshops form the basis for inviting and judging applications from investigators for Proposal Development Grants. These will fund six months of activity for developing full research proposals. After review by external peer reviewers and the Scientific Advisory Committee of IC Health, the successful projects will be further funded through the award of Startup Grants for completing pilot phase I studies within one year. The products of this research will enable researchers to apply for larger project grants from major funding agencies (national/international). During this period, the researchers will be guided by the Project Advisory Committee constituted of experts in each specific area of research such as tobacco and nutrition.

In 2003, IC Health conducted several research prioritization workshops on cardiovascular risk reduction in primary health care and interventions for tobacco control. IC Health plans to conduct the following research prioritization workshops in 2004:
- Research for improving the detection and management of acute coronary syndromes in primary health care settings in low- and middle-income countries (April 2004).
- Research on nutritional interventions for reducing cardiovascular risk (October 2004).

Based on the research priorities identified by these workshops, IC Health will initiate research through small grants for proposal development.

Finally, based on the recommendations of the tobacco research prioritization workshop, IC Health will invite applications for five "proposal development grants" to be awarded in June 2004, aiming to integrate tobacco related research into vascular risk reduction programmes in primary health care settings of LMICs.

(b) Policy-oriented research for CVD control

IC Health will be supporting two projects related to mapping policy on CVD control in the coming year.

First, it will initiate the second phase of the study on the macroeconomic consequences of CVDs and diabetes. Based on the report submitted by health economists from the Earth Institute at Columbia University, new data collection for in-depth country studies in four low- and middle-income countries will be undertaken aiming to provide refined economic analysis of the impact of CVD. IC Health also plans the publication of the global overview provided by the report and its wide dissemination, to stimulate a debate on the

implications of CVD for low- and middle-income countries and to influence the content of policies and resource allocation.

Second, a census of ongoing cardiovascular and diabetes research activity in low-and middle income countries will be undertaken, with the following components:

- Inventory of ongoing research relevant to CVD prevention and control in developing countries (World Heart Federation with assistance from the IC Health Secretariat).
- Application of the CAM for research mapping in the area of major CVDs, such as coronary heart disease, stroke, rheumatic heart disease and related risk behaviours related to tobacco, nutrition and physical activity. This will include a priority-setting exercise for tobacco and CVD-related research using the CAM.
- Initiation of four in-depth country studies of research priorities, resource flows and research products for prevention and control of CVD in low- and middle-income countries. These studies will be undertaken through national investigators, with coordination by the IC Health Secretariat.

(c) Capacity development for CVD-related research

IC Health will contribute to the enhancement of research capacity development in low- and middle-income countries by its continued co-sponsorship of the World Heart Federation's annual International Ten Day Teaching Seminar on Cardiovascular Epidemiology and Prevention. It will also offer short-term fellowships for specific project-related training in research methodology/biostatistics/health economics at INCLEN training centres.

(d) Publications for guiding operational research

The product of research prioritization workshops and research projects of IC Health have been incorporated in monographs published by the IC Health Secretariat, including the following:

- Research for prevention and control of high blood pressure and associated cardiovascular risk in developing countries. Summary report of an IC Health workshop, October 2001, Geneva.
- Cardiovascular diseases, prevention and control in developing countries: assessment of capacity in Cameroon, India, Thailand. Summary report of methodology and key results, November 2003.
- Cardiovascular risk reduction in developing countries: research to evaluate health system interventions at primary health care level. Summary report of an IC Health workshop, June 2003, Lausanne.

These reports are available on the IC Health website (www.ichealth.org) and hard copies are available from the IC Health Secretariat in New Delhi.

Insert 9.4.1

IC Health and Tobacco Research Projects

IC Health is engaged in developing a tobacco-related research component, as part of its overall cardiovascular research agenda. To initiate this effort, IC Health organized a workshop on 'Priorities for Research Relevant to Tobacco Control in Developing Countries' as a pre-Forum activity on 1 December 2003 in Geneva. The tobacco research prioritization workshop focused on research relevant to critical areas such as policy intervention to reduce tobacco consumption, individual or behavioural intervention to promote cessation and community interventions to reduce tobacco initiation. The workshop agenda involved reviewing the current research situation in developing countries in the area of tobacco control, prioritizing questions for further research, identifying appropriate research designs and also initiating the application of the CAM to identify priority research for tobacco control in developing countries.

The emerging issues and recommendations of the tobacco research prioritization workshop were profiled at the symposium on CVD and tobacco research during Forum 7. The rising rates of tobacco consumption in low- and middle-income countries and its increasing concentration among lower socioeconomic groups require intervention strategies specifically designed to address the determinants of disease and barriers to behaviour change amongst these groups. Attention was drawn to the importance of evaluating the performance of tobacco control activities at different levels of health care and the activities of the various components of the health system, so as to enable the identification of specific health system interventions to scale-up tobacco control activities, both quantitatively and qualitatively.

The workshop identified critical areas of tobacco research for promoting interventions to reduce tobacco consumption and recommended the following:

- a review of the sociocultural norms and practices related to tobacco use
- the identification of the tobacco industry's activities to encourage initiation
- the development of critical community strategies to counter these influences
- a review of the accumulated experience on tobacco control
- the development of a primary health care model for cessation (including health services, social networks, individual factors)
- the initiation and evaluation of youth cessation programmes
- an assessment or situational analysis of available services
- measures to explore cessation strategies specifically designed for smokeless tobacco products
- an evaluation of effective gender-specific cessation strategies
- interventions required to counter industry actions hindering cessation
- interventions directed at health care professionals which improve their knowledge, motivation and skills for promoting cessation
- an economic evaluation of interventions intended to promote cessation
- continuing consultations amongst networks regarding priority research issues, the need for research road-mapping through the CAM and research facilitation through small grants supported by IC Health.

Source: Secretariat of IC Health

Insert 9.4.2

From capacity assessment to capacity building

A detailed study of the capacity for prevention and control of CVD and diabetes was conducted by IC Health in 2002-2003, in Cameroon, India and Thailand. This study utilized both qualitative and quantitative methods to evaluate the current capacity, in terms of health policies, programmes and infrastructure from the perspectives of the communities, patients, different categories of health care providers and policy-makers. While recognition of CVD as a major public health problem was widely shared, knowledge of risk factors and their relation to CVD was inadequate among many community groups. Diabetes, smoking and physical inactivity were not among the well recognized causes of CVD, especially in the lower socioeconomic groups. Primary care physicians felt very ill-equipped (in knowledge, skills and infrastructure) to deal with CVD, including acute emergencies. Inexpensive but life-saving drugs like aspirin were underutilized in the management of acute coronary events. Rural communities had very limited access to facilities for CVD prevention and care and referral linkages were poor, while urban communities felt that widely variable quality of care and high costs were barriers to treatment. Multi-purpose health workers and nurses saw high potential for their role in CVD prevention but said that they were limited by lack of appropriate training. Provincial policy-makers, who were closer to the communities, were convinced that CVD was a growing problem which required urgent measures for prevention and control while national policy-makers were not yet ready to commit resources for this effort.

Capacity building is urgently needed to fill these multiple gaps so that the epidemic of CVD does not overwhelm countries which are unprepared. The summary report of methodology and key results are accessible on the IC Health website (www.ichealth.org).

Source: Secretariat of IC Health

Section 5

Medicines for Malaria Venture[16]

1. Central problem

Malaria kills over 1 million people a year, mainly children under five and pregnant women. It is estimated that there are between 300 and 500 million cases of malaria every year in sub-Saharan Africa, Asia and South America. It is likely that more people are infected with malaria today in sub-Saharan Africa than at any other time in history. This ancient scourge has been making a quiet come-back since the late 1970s mainly due to the effects of drug resistance.

The countries worst affected by malaria do not have the resources to combat the disease effectively. While vector control interventions

[16] Adapted from a text contributed by the Secretariat of the Medicines for Malaria Venture foundation.

are critical to the fight against malaria, they are insufficient to reverse the resurgence of this disease which affects more than one third of the world's population. New antimalarial drugs are urgently needed to improve case management – to save lives and reduce morbidity – and meet the challenges of increasing drug resistance. However, most of those afflicted are too poor and the global profit perspectives too small to stimulate commercially driven R&D. Prospects for commercial profitability are further diminished when the complicated and costly activities required to make drugs accessible to consumers in developing countries are factored in.

The public sector, while recognizing the pressing medical need for drug R&D, normally only funds basic research. As a result, it cannot respond to this need directly from its own resources. Modern drug R&D requires considerable technological, managerial and regulatory inputs that are most commonly found in the private sector.

The Medicines for Malaria Venture (MMV) was established in response to this situation and to the failure of the market system to provide the required incentives for malaria drug R&D.

2. Creation of the network, objectives, partners and governance

MMV arose from discussions between the Global Forum, private sector representatives (International Federation of Pharmaceutical Manufacturers Associations and Association of British Pharmaceutical Industries), the Rockefeller Foundation, the Swiss Agency for Development and Cooperation, the Wellcome Trust, the World Bank and WHO. The combined expertise and perspectives of these parties was required for the full development of the MMV concept.

MMV was established as a Swiss foundation in November 1999 and is dedicated to discovering, developing and delivering safe, effective and affordable treatments for malaria through public-private partnerships. The keyword illuminating its mode of operation is "partnership" – albeit partnership within a well established contractual win-win framework. MMV's partners include its donors (both public and philanthropic), its researchers (academic and pharmaceutical) and the many public health policy experts who support it. CSOs are also likely to become increasingly involved where they have specific competences – for example in the downstream provision and distribution of drugs. The ultimate result of these partnerships will be new antimalarials specifically designed for the endemic countries. These products will be registered in malaria-endemic countries and become available as public goods that are appropriate for use by poor populations

MMV's portfolio of research and development projects is based on the 'virtual' R&D concept. It is managed by a small but experienced and highly motivated team. Its costs for the development of drugs are significantly reduced because of different types of contributions in kind donated by its pharmaceutical and biotech partners. MMV also benefits from much pro bono work; for example that of its Expert Scientific Advisory Committee and its Board members who freely give of their time and talents. The reason for this is that all recognize that they are engaged in something that is of key public interest.

(a) Governing Board

MMV is governed by a Board of Directors of up to 12 members, chosen for their scientific, medical and public health expertise in malaria and related fields, their research and management competence, as well as their

Insert 9.5.1
MMV funding and support

MMV receives funding and support from:
Bill & Melinda Gates Foundation
ExxonMobil Corporation
Global Forum for Health Research
International Federation of Pharmaceutical Manufacturers Associations
Netherlands Ministry for Development Cooperation
Rockefeller Foundation
Swiss Agency for Development and Cooperation
United Kingdom Department for International Development
Wellcome Trust
World Bank
World Health Organization: TDR and Roll Back Malaria

Source: MMV

experience in business, finance and fund-raising.

(b) The Expert Scientific Advisory Committee
The function of this body is to advise on the selection and review of projects for funding by MMV and to provide more general advice and information on appropriate technical strategies for the foundation to achieve its goals. The members come from both industry and academia and cover the full range of expertise required to assess projects in the extremely complex process of drug research and development.

3. Strategies
MMV's virtual R&D approach is now well developed and benefits from the fact that drug R&D has become increasingly modular and outsourceable. A key strategy is to link compatible academic and industry groups to optimize access both to the technologies associated with drug R&D, and to the mindset and thinking that is required to generate real world products. In some cases these links may already be established and in others it may be necessary to broker partnerships. The MMV team, together with the Expert Scientific Advisory Committee, then closely monitor the projects against defined milestones. Continued funding will be dependent on success and progress toward the goal of discovering and developing an appropriate drug.

The virtual drug R&D managed by MMV implies that all laboratory processes are outsourced. This is a model pioneered in the bio-pharmaceutical industry to reduce capital expenditure. However, the paradigm envisaged by MMV is not only to utilize cost-effective cutting-edge science where it already exists, but also to integrate this with cutting-edge managerial approaches facilitated by the ICT revolution. By developing a portfolio approach, assessed by competitive scientific and sustainability criteria, MMV provides a considerably greater chance of achieving success than by the narrowly targeted investment in a single project or single institution. MMV has developed a strategy

that utilizes existing and emerging scientific opportunity to meet both short- and long-term drug R&D needs.

In the short term, most hope is attached to the development of existing drug classes such as the artemisinin derivatives, drugs derived from a Chinese herb *Artemisia annua.* However, these drugs currently have to be administered over five to seven days when given alone. In poor countries, where cost of treatment is a major concern and health care infrastructure is poor, the full course is often not completed and recrudescence of the disease can occur. To counter this problem, and in an attempt to reduce the likelihood of drug resistance, it is now accepted by many scientists that these drugs be combined with other drugs for the treatment of malaria. In fact, a WHO advisory group has specifically recommended Artemisinin-based Combination Therapy (ACT) as first-line treatment for endemic countries with problems of resistance to older drugs. Examples of such combinations can be found in the current MMV portfolio.

In the medium to longer term, MMV seeks to bring forward entirely new classes of drugs, both singly and in combination, to meet the future challenges of drug resistance and to improve compliance. The availability of the malaria genome sequence has generated a substantial amount of new information that will be a valuable asset to this long-term goal. However, drug discovery is a long and complex process. It takes many years of dedicated biology allied to cutting-edge medicinal chemistry to convert ideas and 'leads' into drugs. The chemical compounds have to be designed not only to inhibit the molecular target against which they are directed, but also to be stable, non-toxic and able to be absorbed into the bloodstream and to cross from the blood plasma into the parasitized red blood cell.

4. Project selection and review

MMV's Expert Scientific Advisory Committee and experienced staff ensure the selection of highly promising research projects. A strong competitive process is generated initially through an open and widely communicated call for proposals. This is coupled with more proactive research and networking on a global scale. The projects must meet MMV's drug specifications which are aligned with particular public health-driven indications. The requirement that affordable public goods should be one of the fruits of the sponsored collaboration with industry is at the heart of the public-private partnership concept operated by MMV.

MMV's portfolio management provides value by lowering risks and creating knowledge and cost synergies across projects. The project teams are aware at the outset that continued MMV support is dependent on both progress against milestones and on the project remaining competitive with other projects in the MMV portfolio. All of the projects are reviewed annually by the Expert Scientific Advisory Committee.

Portfolio priorities focus on delivering product indications, which respond to established medical usage, acceptability and affordability requirements. To accomplish this goal, typical drug profile requirements include:

- effectiveness against drug resistant strains of P. falciparum
- treatment within three days for compliance
- low propensity to drug resistance emerging rapidly
- safety in small children (< six months in age)
- intermittent treatments in early infancy
- safety in pregnancy
- potential for intermittent treatments in pregnancy
- appropriate formulations and packaging
- affordability for low-income populations in endemic countries

- treatments suitable for emergency situations (e.g. single dose treatment for refugee camps)
- treatments against P. vivax (including radical cure)
- treatments against severe malaria
- transmission blocking.

5. Results over the past two years and perspectives over the next two years

MMV currently manages 21 projects (11 discovery projects and 10 development projects), the largest portfolio in the history of malaria drug R&D, with eight completely new therapeutic targets in the pipeline. The clinical development projects are gaining momentum and several pre-clinical projects are set to move to the clinical stage in 2004. While innovation is paramount, it does not simply mean new drugs. MMV is also working on a product extension project – a paediatric formulation of artemether and lumefrantrine. This could be used as a first-line treatment for infants suffering from acute, uncomplicated falciparum malaria. MMV hopes to launch this new formulation by 2007.

Since 2001, MMV has issued two calls for proposals which generated almost 200 letters of interest and proposals both from developed and developing countries. In June 2003, MMV signed an agreement with GlaxoSmith-Kline (GSK), creating the **GSK/MMV joint portfolio,** which currently groups three exploratory projects, one full discovery project and one development project. MMV is planning to issue a new call for proposals in early 2004. All of these projects were initiated under agreements that give MMV the rights to any compounds that are selected for entry into development. All of MMV's legal agreements are case-by-case and attempt to produce win-win scenarios for all the partners. MMV is committed to and now has the capability to take on management-intensive drug development projects.

MMV has been designated by WHO as "the premier public-private partnership for developing new malaria drugs." The challenges over the next two years will be to maintain the portfolio by adding promising new projects and eliminating projects that have not reached their milestones, while simultaneously carefully steering the development projects through the crucial stages of clinical development. A portfolio of 20 to 25 projects is modelled to be sufficient to meet the challenge of delivering one new antimalarial every five years. MMV's goal is to register at least one new drug before the original target of 2010. To achieve this, funding will need to increase to about US$ 30 million a year by 2005, together with equivalent support in kind from industry. MMV's biggest challenge may be to secure adequate sustainable funding in order to support the projects through the more expensive development process. The current portfolio is financed thanks to a reasonably well diversified funding base of governmental and philanthropic donors.

6. Indicators of success

Ultimately, MMV's value (its health impact) will be measured in terms of the number of patients successfully cured with improved antimalarial drugs as a result of its work and that of its many partners. Shorter term indicators of success are the size and quality of MMV's pipeline and the rate of pipeline progression compared to industry norms. Such 'surrogate' indicators are required for drug R&D because it takes so long to deliver actual products. Unless the drugs discovered and developed by MMV are widely available to patients in disease-endemic regions, the whole venture will be of little practical use. Therefore, MMV is working at several levels in an effort to ensure optimal uptake of its products:

- MMV has set as a goal the discovery of

agents that have low intrinsic costs. Thus, projects will be identified in which manufacturing costs can be kept as low as possible.

- By taking on a large portion of R&D costs and by also taking on the responsibility for managing the projects and assessing their viability as sources of new drugs, MMV is substantially lowering both the cost and the risk for companies wishing to commercialize MMV products downstream.
- Because of this engagement by MMV and the fact that it will actively seek intellectual property rights protection, MMV is in a position to negotiate appropriate arrangements for the out-licensing of its products for commercialization.

By engaging in antimalarial drug R&D within a not-for-profit, yet business-like public-private framework, MMV has made significant progress in 2003 towards delivering much-needed new antimalarial drugs.

Section 6

Mental and Neurological Health[17]

1. Background and size of the problem

For all individuals, mental, physical and social health are closely interwoven strands of life. It is becoming increasingly clear that mental functioning is fundamentally interconnected with physical and social functioning and health outcomes. Mental illnesses and neurological disorders affect the intrinsic human abilities to think, feel, communicate and move, and they erode human productivity in the workplace and in the wider society. Even when they do not meet the threshold for a diagnosis of mental disorder, mental problems can lead to antisocial and self-harming behaviours, substance misuse and risk-taking behaviours which expose individuals to potential harm from outcomes such as accidents and sexually transmitted diseases.

As our understanding of this interdependent relationship grows, it becomes ever more apparent that mental health is crucial to the overall well-being of individuals, societies and countries. Conversely, optimal mental and neurological health is not only essential for individual well-being, but contributes

[17] Contributed by Andrés de Francisco, Global Forum for Health Research

to enhancing human capital (individual productivity) and social capital (social cohesiveness), both of which are critical for economic growth and poverty reduction.

Mental and neurological health issues have long been marginalized and stigmatized at the international, national and local levels. In many countries, services have been centralized, institutionalized, professionalized and depersonalized. In addition, myths have spread, e.g. mental disorders are culture-bound syndromes of the West and North; that their incidence and prevalence in developing countries is low; that most are not amenable to effective treatment; and that existing treatment regimens are too expensive for developing countries.

According to WHO's *World Health Report 2003,* neuropsychiatric disorders account for 12.9% of disability adjusted life years (DALYs) and intentional injuries for 2.9%. Mental and substance use disorders represent four of the ten leading causes of years lived with disability (YLDs). In particular, unipolar depressive disorders are the first cause of years lived with disability, accounting for 11.8% of total YLDs. Alcohol use disorders account for 3.3% of total YLDs, schizophrenia for 2.8% and bipolar affective disorder for 2.5%.

The 2002 estimates on leading causes of burden[18] show that unipolar depressive disorders account for 7.3% of total DALYs in developed countries, being the second leading cause of burden; but they are ranked as the first leading cause of burden in developing countries with low mortality, accounting for 6.0% of total DALYs.

There are 450 million people affected by a mental disorder at any given time, which represents one in four families. Mental health problems affect society as a whole, and they are a major challenge to global development. No group is immune to mental disorders, but the risk is higher among the poor, homeless, the unemployed, persons with low education and the most vulnerable groups. Given the prevalence of mental health and substance-dependence problems in adults and children, it is not surprising that there is an enormous emotional as well as financial burden on individuals, their families and society as a whole. The economic impacts of mental illness affect personal income, the ability of ill persons – and often their caregivers – to work, productivity in the workplace and contributions to the national economy, as well as the utilization of treatment and support services. Mental disorders generate costs in terms of long-term treatment and lost productivity and contribute significantly to poverty.

There is now a considerable knowledge base for effective interventions for many mental and neurological conditions. However, most of the work in developing and implementing cost-effective interventions has been carried out in the high-income countries, and this knowledge may not be relevant in many low-income countries, which suffer from a lack of mental health policy, special services, skills in primary care, and essential medicines and treatments, as well as from the stigma surrounding these conditions.

There is a need for high quality cross-disciplinary research and public advocacy of research results to overcome the barriers to

[18] Mathers CD, et al. Global Burden of Disease in 2002: data source, methods and results. Discussion Paper No. 54. 2003. World Health Organization, Geneva

care for people with mental and neurological disorders and to efficiently change unhealthy behaviour among high-risk groups in low-income countries.

2. WHO's strategy[19]

WHO declared 2001 the Year of Mental Health and that year's World Health Day was a resounding success (http://www.who.int/mental_health/en/). Over 150 countries organized important activities, including major speeches by political leaders and the adoption of new mental health legislation and programmes. At the 2002 World Health Assembly, over 130 ministers responded positively with a clear and unequivocal message: mental health, neglected for too long, is crucial to the overall well-being of individuals, societies and countries, and must be universally regarded in a new light.

(a) Mental Health Global Action Programme (mhGAP)

As a result of the activities in 2001, the mhGAP has been created. GAP is WHO's major effort to implement the recommendations of the *World Health Report 2001*. The programme aims to enhance the mental health of populations, based on the following four strategies:

- Strategy 1: Increasing and improving information for decision-making and technology transfer to increase country capacity. WHO is collecting information about the magnitude and the burden of mental disorders around the world, and about the resources (human, financial, sociocultural) that are available in countries to respond to the burden generated by mental disorders. This is pursued by the ATLAS project (http://www.cvdinfobase.ca/mh-atlas/). ATLAS's aim is to provide information on mental health from all countries. The information relates not only to epidemiology but, more significantly, to resources and infrastructure for mental health care within each country.
- Strategy 2: Raising awareness about mental disorders through education and advocacy for more respect of human rights and less stigma. WHO is maintaining constant communication and information networks with professional NGOs, parliamentarians, family members and service users' groups in order to sustain the groundbreaking work of the last two years.
- Strategy 3: Assisting countries in designing policies and developing comprehensive and effective mental health services. The scarcity of resources forces their rational use. *The World Health Report 2001* and the ATLAS: *Mental Health Resources in the World,* have revealed an unsatisfactory situation with regard to mental health care in many countries, particularly in developing countries. WHO is engaged in providing technical assistance to ministries of health in developing mental health policy and services.
- Strategy 4: Building local capacity for public mental health research in poor countries. Besides advocacy, policy assistance and knowledge transfer, mhGAP formulates in some detail the active role that information and research ought to play in the multidimensional efforts required to change the current mental health gap at country level.

(b) Progress made during the last four years

- The Mental Health Policy Project is helping governments to formulate and implement coherent and comprehensive mental health policies according to their unique needs for

[19] Adapted from a contribution by Anna Gatti and Shekhar Saxena, Department of Mental Health and Substance Abuse, WHO, Geneva.

promotion, prevention and care. WHO prepared and disseminated a comprehensive policy and service guidance package with the purpose of assisting policy-makers and planners to: (i) develop policies and strategies for improving the mental health of population; (ii) use existing resources to achieve the greatest possible benefits; (iii) provide effective services to those in need; and (iv) assist the reintegration of persons with mental disorders into all aspects of community life, thus improving their overall quality of life. The package consists of a series of interrelated user-friendly modules that are designed to address the wide variety of needs and priorities in policy development and service planning.

- The WHO Project on Mental Health and Human Rights is another cornerstone in strengthening countries' capacity to protect and promote the human rights of people with mental disorders and reduce discrimination and stigma. The project focuses specifically on the development and implementation of mental health legislation, as this represents an important means of rights protection.
- A contribution to building local capacity for public mental health research in poor countries has been made by WHO's meeting on Mental Health Research in Developing Countries: Role of Scientific Journals. The meeting was held in Geneva in November 2003 and was attended by 25 editors representing mental health and public health journals. Their contribution to advocacy in low- and middle-income countries was discussed. A catalogue of ideas was also drawn up to guide follow-up actions by individual journals and editorial and international organizations to: (i) bring about policy changes to facilitate the publication of research; (ii) enhance research and publishing capacity of researchers and journals; and (iii) enhance dissemination of research to low and middle-income countries.
- Global campaign against epilepsy: out of the shadows. Today, about 50 million people suffer from epilepsy. The strategy of the campaign raises general awareness and understanding of epilepsy, supports demonstration programmes, assists governments in identifying needs and promoting education, training, treatment, services, research and national prevention.
- Suicide prevention. In the last 44 years suicide rates have increased by 60% worldwide. The project is breaking the taboo surrounding suicide and bringing together national authorities and the public by strengthening countries' capability to develop and evaluate policies and plans for suicide prevention.
- Management of substance dependence projects. Alcohol and other substance-use disorders are also serious mental health concerns worldwide, with an estimated 90 million people affected by alcohol or drug use disorders (http://www.who.int/substance_abuse/en/). Activity in this area raises awareness in countries of new developments and treatments, and provides assistance in formulating appropriate policies and programmes. WHO prepared a report on neuroscience of psychoactive substance use and dependence with the aim of overcoming misconceptions and stigma associated with substance dependence, thereby improving access to treatment for those in need. WHO promotes strategies for the early identification and management of substance-use disorders in primary health care, which have proved to be cost-effective with regard to alcohol problems.

(c) Future directions

Even though mental, brain and substance-use disorders can be managed effectively with medication and/or psychosocial interventions, only a small minority of patients with mental disorders receive even the most basic treatment. Initial treatment is frequently delayed for many years.

In order to reduce the increasing burden of mental disorders and avoid years lived with disability or death, priority should be given to prevention and promotion in the field of mental health. Preventive and promotional strategies can be used by clinicians to target individual patients, and by public health programme planners to target large population groups. Integrating prevention and promotion programmes for mental health within overall public health strategies will help to reduce the burden and the stigma attached to the mentally ill and improve the social and economic environment.

To turn plans into action, WHO is adapting the type of implementation to the level of resources of individual countries. In the particular case of developing countries, where the gap between mental health needs and the resources to meet them is greater, WHO will offer differentiated packages of "achievable targets" for implementation (Gap Reduction Achievable National Targets/GRANTs) to countries grouped by level of resources (low, middle and relatively high). These packages provide the minimum required set of feasible actions to be undertaken to comply with the 10 recommendations listed in the *World Health Report 2001*. Achievement of the identified targets will influence both health and social outcomes, namely mortality due to suicide or to alcohol/illicit drugs, morbidity and disability due to the key mental disorders, quality of life, and finally, human rights. GRANTs requires a regular monitoring of the mental health situation in countries. For this purpose, a dedicated monitoring system project has been undertaken by WHO including a system of indicators which has been defined and tested.

3. Global Network for Research in Mental Health and Neurological Disorders[20] [21]

The Global Network for Research in Mental Health and Neurological Disorders (http://www.mental-neurological-health.net) was created in October 2001 and registered in the USA as a non-profit NGO. It succeeded the International Consortium for Mental Health Policy and Services.

(a) Goals, objectives and strategies

The overall goal of the Global Network is to make strategic contributions to the promotion, improvement and protection of global mental and neurological health and to the reduction of the global burden of mental and neurological disorder by (i) promoting research; (ii) collaborating with countries in research capacity building and leadership training; (iii) forging international links between government policy and research; (iv) improving good practice; (v) strengthening research institutions in developing countries; and (vi) collaborating with international and national agencies with a similar goal.

(b) Organization

There are currently 35 institutions and agencies which are members of the Global Network, including research institutions both in developing and developed countries, governmental and intergovernmental organizations and research foundations. Other stakeholders are invited to join, particularly to strengthen the representation of (psychiatric) nurses and social workers, as well as patient groups.

[20] The Global Forum is supporting a study to map institutions active in the field of mental and neurological health with a view to improve capacity in low- and middle-income countries. One of the institutions supported by the Global Forum is the Global Network for Research in Mental Health and Neurological Disorders whose activities are briefly presented here.

[21] Adapted from a contribution by Walter Gulbinat, Executive Secretary, Global Network for Research in Mental Health and Neurological Disorders.

Countries participating in the activities of the network include the following: (i) Europe (Azerbaijan, Bulgaria, France, Georgia, Lithuania, Netherlands, UK, Ukraine); (ii) Americas (Chile, Ecuador, Trinidad & Tobago, USA); (iii) Africa (Kenya, Tanzania, Uganda, Zambia) (iv) Eastern Mediterranean region (Egypt, Iran, Pakistan); (v) Western Pacific (Australia, Malaysia, Philippines); and (vi) South East Asia (India, Nepal, Thailand).

The Global Network for Research in Mental and Neurological Health, Inc. is the legal and administrative arm of the Network, represented by its Board of Directors and the Executive Secretary. A Consultative Committee, which includes 63 experts from 41 countries, provides technical and scientific input on specific issues.

The budget amounts to about US$ 0.2 million per annum (not including contributions in kind) and is supported by the Global Forum for Health Research, the Association Internationale pour la Recherche et l'Enseignement en Neurosciences (AIREN), a number of governments and individual contributions.

(c) Progress in 2002-2003

The Global Network started its operations in 2002. Recent achievements include the following:

- Inter-regional research: identification of global research priorities.
- A mental health country profile providing the following information: (i) a description of the underlying concept; (ii) a common format for recording the mental health situation of a country; (iii) a manual guideline for its use; and (iv) the individual country profiles of 16 countries (accessible on the Network website).
- A mental health policy template which displays, in tabular format, the policy elements to be considered in revising or updating a country's mental health policy or programme.
- Focus groups: a wide variety of constituencies were invited to take part in discussions on mental and neurological disorders at the country level, including NGOs, national government representatives, professional groups and country representatives of UN agencies and programmes.
- An international network of resource centres for policy and systems research was created.

(d) Future activities

In 2004, activities will focus on the definition of regional research priorities, on the expansion of the Network and the development of its capacity in health economics and finance.

4. Conclusions

Throughout the 20th century, mental health was the 'poor relation' of health and medicine. Despite the rapid rise of mental health disorders, mental and neurological health remained a low priority in the political and research agenda of most countries, and mental health budget were largely underfunded.

The concept of burden of disease contributed much to the growing attention paid to mental and neurological disorders in the recent decade. In 1999, the World Bank created positions for mental health at its Washington DC headquarters and included mental health interventions within its lending programme. In 2001, the WHO devoted its World Health Day to mental health and the *World Health Report 2001* focused exclusively on mental health. It drew attention to the huge burden of mental and neurological disorders in the world, to the many cost- effective and sustainable interventions which exist to fight these diseases, and to the urgent need to strengthen research capacity in low and middle-income countries in this sector.

Section 7

Multilateral Initiative on Malaria: Research Capacity Strengthening[22] (MIM/TDR)

1. History of the network

(a) Central problem

There is an urgent need to strengthen all areas of malaria research in order to develop new and more effective tools to reduce the burden of the disease, especially in sub-Saharan Africa. However, efforts are impeded by the lack of a critical mass of investigators, managers and the infrastructure necessary to generate new knowledge on malaria and to develop and effectively deploy tools for management of the disease. The Multilateral Initiative on Malaria in Africa (MIM) was launched to address this need. An international alliance of organizations and individuals concerned with malaria, MIM seeks to maximize the impact of scientific research on malaria in Africa, through promoting capacity building and facilitating global collaboration (www.mim.su.se/english/index.asp).

(b) Creation of the network

MIM was launched in 1997 following the first Pan African Malaria Conference, held in Dakar, Senegal, where malaria scientists from all over the world identified important research priorities for future malaria research. Following the conference, MIM called on TDR to help bring together stakeholders with an interest in supporting capacity-building research. In the USA, MIMCom (MIM Communications) and MR4 (Malaria Research and Reference Reagent Resource Centre) evolved as components of the initiative to address other specific needs. MIMCom, created by the National Library of Medicine at the NIH in partnership with institutions in Africa, USA and Europe, is an electronic malaria research network. The network facilitates the establishment and maintenance of fast reliable Internet connections in research facilities across Africa. MR4 was established by the National Institute for Allergy and Infectious Diseases (NIAID) at the NIH and provides malaria research reagents and training workshops to enhance multi-site studies and facilitate technology transfer. The MIM Secretariat (currently housed at the Wenner-Gren Institute, Stockholm University, Sweden) maintains cohesion and ensures good communication between all components of the initiative. The Secretariat also organizes the biannual Pan African Malaria Congress as well as periodic courses, symposia, stakeholders' meetings or workshops.

In 1998, TDR established a Task Force of international experts (50% African scientists) which supports a multidisciplinary network of African scientists, in partnership with MIM, NIH, the World Bank (through the Global Forum) and national governments.

The research grants awarded through MIM/TDR have been a major component of MIM since its inception – providing African scientists with opportunities to "learn by doing". MIM/TDR has also been a channel

[22] Adapted from a text contributed by MIM/TDR.

for promoting partnerships, collaboration, technology transfer and training opportunities. Joint research programmes have proved a highly effective method for mutual training. The research teams and institutions supported through MIM/TDR have been the focal points that draw the other components of MIM together. MIMCom provides electronic communication, MR4 provides research materials and the MIM Pan African Malaria Conferences organized by the MIM Secretariat provide a unique opportunity to share research results and foster synergies with disease control and governmental agencies to promote the translation of research into policies and programmes.

(c) Objectives

The MIM/TDR programme on Malaria Research Capability Strengthening in Africa promotes science development as a vehicle for building sustainable research capacity and global partnerships to meet the following specific objectives:

- Develop core groups and regional networks of African investigators and research institutions engaged in high quality malaria research with international research partnerships.
- Optimize the incorporation of research results to enhance malaria control activities.

(d) Strategy

The strategy is to synergize facilities and competence available in Africa with those in the North and advanced developing countries to build capacity and create opportunities for developing leadership and research management skills for mid-career African scientists. The programme supports North-South and South-South collaborative research projects in the following fields:

- research projects on malaria control in Africa
- capacity building of research facilities and establishment of research teams
- partnerships between African and developed countries' research institutions.

The Task Force selects project proposals for funding once a year on a competitive basis, with the participation of the MIM partnership (Secretariat, MR4, MIMCom and WHO).

To date, MIM/TDR has supported 39 research projects, two research networks and training workshops to standardize protocols. The annual budget for MIM activities amounts to US$ 3.1 million, currently financed by contributions from the NIH, World Bank (through the Global Forum), the Japanese Government and WHO.

This unique mechanism for multilateral funding of research and capacity building in Africa has helped to:

- promote the development of a new generation of African scientists;
- provide human resources and research infrastructure in African institutions;
- facilitate the acquisition, transfer and adaptation of technology in African institutions;
- facilitate the formation of research networks among African investigators;
- facilitate broad-based partnerships between African and international institutions and scientists.

2. Main achievements in 2002-2003

The central strategy of the MIM effort in TDR is the development of groups and regional networks of African investigators and public health institutions who not only engage in high quality research but are also positioned to facilitate and optimize malaria control by utilizing research results. The portfolio of 32 MIM/TDR research projects in 2002-2003 cut across the areas of malaria epidemiology, immunity, pathogenesis, natural products, entomology, insecticide resistance and anti-malarial and drug resistance.

A total of 42 young Africans have completed postgraduate training (25 at Master's level and 17 at Doctoral level) so far under the grant

programme. The results have been shared with the international community through 66 articles published in peer reviewed scientific journals. The studies were based at 36 institutions in 24 African countries (Insert 9.7.1).

The main achievements of the MIM/TDR network of scientists can be summarized as follows:

- Postgraduate training in immunology, biochemistry, epidemiology, clinical pharmacology, entomology, phytochemistry and parasitology.
- Development, standardization and adoption of protocols for collecting data on epidemiology of malaria and antimalarial drug resistance.
- New information on the genetic factors influencing individual variations in severity of disease.
- New information on the development of immune responses to malaria in children living in endemic areas.
- Identification of factors and mechanisms contributing to severe malaria anaemia in African children.
- New knowledge on the clinical pharmacology of drugs used to treat convulsions associated with severe malaria.
- Mapping of anopheles resistance to pyrethroid insecticides in East, West and Southern Africa.
- Identification of potential antimalarial and insect repellent compounds from plants in East and West Africa.
- Enhanced collaboration between research scientists and public health institutions in the area of antimalarial drug resistance.
- An empirical malaria distribution map for Africa and information tool for malaria in Africa (ARMA/MARA).
- Examples of specific achievements of MIM/ TDR projects are presented in Insert 9.7.2.

3. Expected outputs for 2004-2005

The strategic orientations of the MIM/TDR Plan in 2004-5 are defined on the basis of the lessons and achievements over the past five years, the recommendations of an independent review of the MIM (October 2002) and the recommendations of the TDR Scientific Working Group on Malaria (March 2003).

The Plan recognizes the increased visibility of malaria in the last three years that has resulted in increased funding opportunities for malaria research and control. These positive shifts create both challenges and opportunities for new alliances and partners for research capacity building for MIM/TDR. The Plan will focus on the generation of new knowledge, the development of new tools, the development of partnerships between public health and research institutions, and the definition of policies for malaria control, in collaboration with Roll Back Malaria (RBM) and the WHO Regional Office for Africa (AFRO).

MIM/TDR will evaluate the impact of the programme over the period 1998-2004. Critical areas for research currently under review are:

- social sciences and health systems research to improve malaria control
- research and development of new malaria control tools from natural products
- vector biology and insecticide resistance
- pathogenesis and immunology of malaria
- antimalarial drug resistance
- burden of malaria in Africa.

4. Conclusions and long-term perspectives

MIM/TDR will seek to continue to play a central role in the overall MIM effort to apply multiple approaches to enhance collaboration among all stakeholders in reducing the malaria burden in Africa. The programme will proactively create alliances to build sustainable capacity to conduct high quality

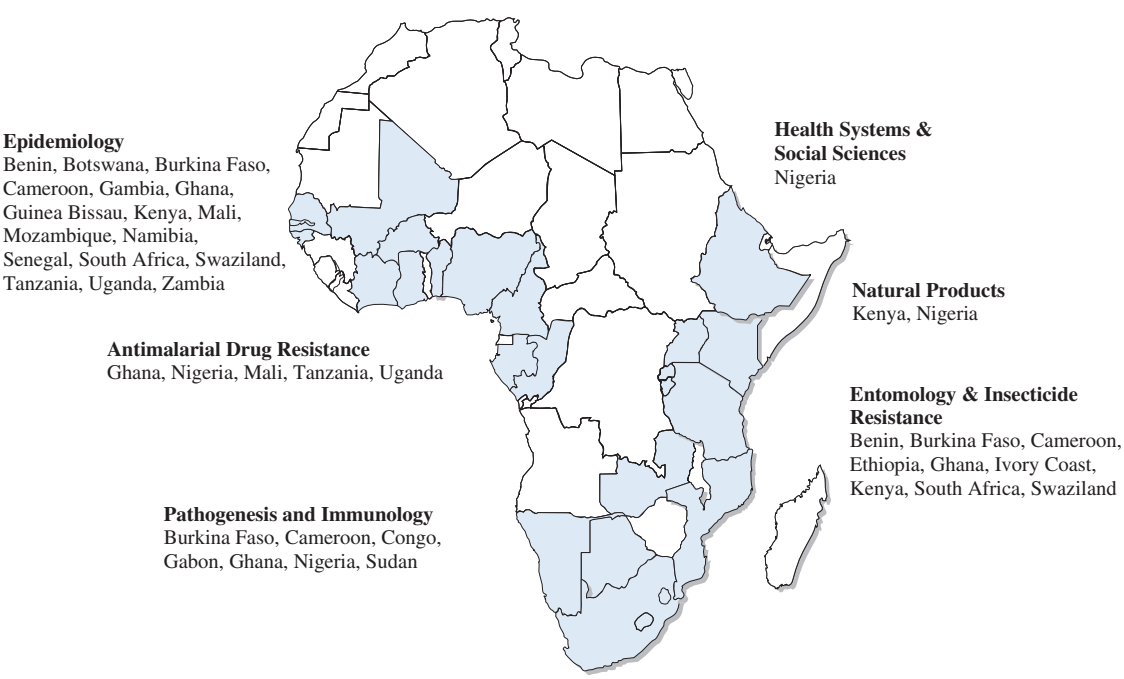
health-science research and translate research results into policies and programmes for malaria control.

In the long term, the outcome of this effort should result in an increase in the number of African institutions and scientists engaged in relevant collaborative research with short- and long-term impact on malaria control and public health in general. The critical measures of success relate to progress in the following areas:

- Increase in the critical mass of African investigators engaged in high quality malaria research.
- Incorporation of research results into policies and programmes effectively enhancing malaria control.
- Number of new tools, strategies and methods which are made available to the public health sector as a result of the research led by African scientists.

Insert 9.7.1

MIM/TDR networks and projects in Africa



Source: MIM/TDR.

Insert 9.7.2

Examples of specific achievements of MIM/TDR projects

Epidemiology (South Africa and Mozambique)
Two international networks (MARA www.mara.org.za and MTIMBA – a network of 18 field sites for continuous demographic and health evaluation) provided information for the analysis of the severity, risk and impact of malaria at regional and national levels in collaboration with WHO's Roll Back Malaria Partnership.

Pathogenesis and immunology of malaria (Burkina Faso, Gabon, Ghana, Nigeria and Sudan)
Six projects were supported, focusing on the relationship between malaria transmission intensity and clinical malaria and immunopathology; risk factors and the immunopathology of severe anaemia in children suffering from falciparum malaria; antibodies that (indirectly) prevent malaria parasites from infecting red cells. New information with potential application in case management and vaccine development was generated.

Antimalarial drug policy and chemotherapy (Burkina Faso, Ghana, Kenya, Mali, Nigeria, Tanzania and Uganda)
Eight projects are providing information on malaria chemotherapy, antimalarial drug policy, and the clinical pharmacology of some drugs used in the management of severe malaria. The novel application of molecular biology in prediction of drug resistance and the integration of research findings into malaria control policy was implemented by a network of five institutions in East and West Africa. The projects used common protocols to evaluate the different factors that may contribute to antimalarial drug resistance and are providing data to inform antimalarial drug use and policy (http://www.nlm.nih.gov/adrn/adrn.html).

Natural products and antimalarial drug development (Kenya and Nigeria)
Identification of antimalarial and insecticide repellent components used by indigenous populations is the focus of three projects supported in this area. The scientists worked together with the indigenous communities and traditional health practitioners to gather information and select and identify the most promising plants. As a result of this research, mosquito repellent products are now available in the community.

Entomology and vector studies (Benin, Kenya and South Africa)
Three multi-country partnership projects focused on entomology and insecticide resistance. A total of 13 countries participated in the projects resulting in the establishment of a regional insecticide resistance monitoring network in collaboration with the WHO Regional Office for Africa (AFRO).

Health systems research (Nigeria)
A project was designed to improve the home management of malaria through better community knowledge of the disease, improved practices, development of new products and improved collaboration between public and private health care providers. The investigators identified contact points that constitute important target groups for better home management of childhood malaria in rural communities. These include: parents and other primary care givers in the home; health workers in and outside health facilities; traditional healers, surrogates and professional associations; patent medicine vendors and their business associations; policy-makers at the local government level.

Individual information about institutions involved is available at www.mim.su.se/english/index.asp.

Source: MIM/TDR.

Section 8

The UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction (HRP)[23]

1. The burden of sexual and reproductive ill health

In 2001, it is estimated that sexual and reproductive ill health, including HIV/AIDS, accounted for nearly 20% of global disease burden (in DALYs) among women and nearly 14% among men, with most of the burden in developing countries and countries in transition.

The definition of sexual and reproductive health adopted at the International Conference on Population and Development (ICPD) in 1994 (Insert 9.8.1) captures some of the elements – such as its holistic nature; its extension well beyond the years of reproduction; the link between generations;[24] and its sociocultural, gender and human rights dimensions – which make this field of health unique.

Worldwide, almost 40% of pregnancies are unplanned and 40-50 million of them are terminated each year through induced abortion; about 19 million of these abortions are unsafe with high risks of severe morbidity or death for the woman.

Every year, over 20 million women experience ill health as a result of pregnancy; for some the suffering will be permanent. Estimates suggest

Insert 9.8.1

Definition of reproductive health

Reproductive health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes.
Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so. Implicit in this last condition are the rights of men and women to be informed and to have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods of their choice for regulation of fertility which are not against the law, and the right of access to appropriate health-care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant.
In line with the above definition of reproductive health, reproductive health care is defined as the constellation of methods, techniques and services that contribute to reproductive health and well-being by preventing and solving reproductive health problems.
It also includes sexual health, the purpose of which is the enhancement of life and personal relations, and not merely counselling and care related to reproduction and sexually transmitted diseases.

Source: ICPD Programme of Action, paragraph 7.2

[23] Adapted from a text contributed by Catherine d'Arcangues, Special Programme of Research, Development and Research Training in Human Reproduction (WHO/HRP).

[24] Reproductive health is central to the link between generations, not only through genetic inheritance, but also because it is increasingly recognized that conditions preceding or occurring at birth can impact health and reproductive potential later in life.

that the lives of 8 million women are threatened and that over half a million women die every year due to conditions related to pregnancy and childbirth. In addition, about 3 million babies die within the first week of life and some 3.8 million infants are born dead. The majority of this suffering is preventable: cost-effective interventions are known and affordable but often not available due to lack of resources for health care.

Unwanted childbearing is associated with failure to seek advice before pregnancy and unwanted children are at greater risk of neglect, abuse and violence. Certain pregnancies, in particular those among very young women or among older, high-parity women, present greater risk for the health of the woman.

In 1999 there were an estimated 340 million new cases of curable STIs and millions of cases of viral (incurable) STIs, mainly HIV/AIDS. In some areas of South Africa, HIV prevalence rates among pregnant women are now 40%–50%. In addition, an estimated 800 000 paediatric AIDS cases occur annually, the majority due to transmission of HIV from an infected mother during pregnancy, delivery or through breastfeeding.

Other viral infections contribute to reproductive ill health. In many developing countries, it is estimated that over 50% of adults are infected with herpes simplex virus and that 15%-25% of women are infected with human papilloma virus, the major cause of cervical cancer, which accounts for more than 230 000 deaths a year (80% of them in developing countries).

Female genital mutilation is practised primarily in 28 countries in Africa, but also in other parts of the world among immigrant populations. It is estimated that 100-140 million women and girls have undergone female genital mutilation and that every year 2 million girls are at risk of being subjected to the practice.

In addition, an estimated 170-190 million people in the developing world (excluding China) experience infertility. Of these, about 2%-3% of couples have primary involuntary infertility, with 25% or more of couples in some countries affected by secondary infertility.

2. The Special Programme of Research, Development and Research Training in Human Reproduction

The Special Programme of Research Development and Research Training in Human Reproduction (HRP) was established by WHO in 1972 to coordinate, promote, conduct and evaluate international research in human reproduction. While fertility regulation has remained a core area of HRP's research, in recent years its research agenda has been broadened to address other challenges in reproductive health. HRP also carries out activities to strengthen the capabilities of developing countries to meet their own research needs and to enable them to participate in global reproductive health research.

As the focal point for research activities within the WHO Department of Reproductive Health and Research, HRP promotes the use of research results in policy-making and planning at national and international levels and contributes to the setting of norms, standards and guidelines – including ethical guidelines – in the field of reproductive health research. HRP also works to ensure that gender issues, especially the perspectives of women, are reflected in both its research and research capability strengthening activities. The international mandate that drives the work of HRP is based on the agreements adopted at the International Conference on Population and Development, in Cairo (1994) and at the Fourth World Conference on Women in Beijing (1995) and their respective five-year follow-ups, as well as the MDGs.

3. Main achievements in 2002-2003

(a) Promoting family planning

- A large multicountry study was conducted in Kenya, South Africa, Tanzania, Uganda, Zambia and Zimbabwe on the perspectives of sexually active individuals about the dual risks of sexually transmitted infections, including HIV/AIDS, and unintended pregnancy. Findings suggest that in countries with high HIV prevalence a small but potentially influential group of educated young couples is using condoms with some consistency and that there is untapped potential for increasing condom use within marriage.
- A Phase II study of the use of male hormonal contraception was completed in Indonesia.
- The first ever Phase III trial of an injectable hormonal contraceptive for men is being conducted in China.
- A study was conducted in China on close to 5 000 women, confirming the efficacy of a low-dose oral contraceptive (10 mg mifepristone) for emergency contraceptive use.
- A multi-country study was launched on the comparative clinical performance of two second-generation implantable contraceptive methods.
- A consultation was convened in March 2002 on the implications of a recent research finding that women who have used hormonal contraceptives for longer than five years are at higher risk of developing cervical cancer than non-users.
- Studies on barriers to family planning access examined provider perspectives on the provision of family planning services in several countries. A study in Senegal showed that by using a six-question checklist to rule out the presence of pregnancy, family planning providers were able to reduce the percentage of non-menstruating women being denied contraceptives from 11% to 6%.
- Development of a system for ensuring that family planning guidance is created, and updated regularly, on the basis of the best available evidence.

(b) Making pregnancy safer

- The so-called "MAGPIE" trial showed that the use of the compound magnesium sulphate could more than halve the risk of eclampsia. This finding is expected to lead to a major change in practices related to prevention of eclampsia.
- A study to evaluate the benefit of calcium supplementation in the prevention of pre-eclampsia, including two ancillary studies, ended in 2003, with 8338 women recruited; results will be ready by early 2004.
- Seven new projects were initiated: four randomized clinical trials to evaluate therapeutic and preventative interventions during pregnancy, plus two ancillary studies, and a study to develop a diagnostic tool for birth asphyxia for use at the community level.
- Two new global initiatives were launched: a global collaborative project on basic and clinical research for the prevention and treatment of pre-eclampsia; and the WHO Global Survey for Monitoring Maternal and Perinatal Health (which upon completion will have collected data from over 400 000 deliveries in over 1000 facilities from 56 countries).

(c) Control of sexually transmitted and reproductive tract infections

- A technical consultation was held to assess the increasing threat of the herpes simplex virus becoming a major driving force for HIV transmission.
- A protocol was finalized to study the impact of highly active antiretroviral therapies (HAART) on mother-to-child transmission (MTCT) of HIV and maternal health.
- In partnership with CONRAD, the Programme successfully concluded a three-centre randomized double-blind Phase I

study of the safety and acceptability of 6% cellulose sulfate gel compared with placebo (K-Y Jelly) among healthy women volunteers in India, Nigeria and Uganda. Further evaluation of cellulose sulfate for the prevention of HIV infection is now warranted.

(d) Preventing unsafe abortion

- A new publication entitled *Safe abortion: technical and policy guidance for health systems* was released in 2003 and distributed to Ministries of Health through WHO Regional Offices. This document is in high demand and is currently being translated into French, Spanish, Russian, Portuguese and Polish.
- New global and regional estimates of unsafe abortion were produced in 2002: nearly 40% of all unsafe abortions occur among women aged 15-24 years. Overall, 7.3 million unsafe abortions are estimated to take place each year in this age group. These estimates are being used in the WHO project on the Global Burden of Disease.
- New estimates of mortality related to unsafe abortion show that some 68 000 women die each year from unsafe abortion, and one in four unsafe abortions in Africa involves a woman of between 15 and 19 years.
- A major study on abortion and contraceptive use found that both may increase concurrently in contexts where fertility is falling rapidly and contraceptive services are unable to meet the growing demand for fertility regulation. However, contraceptive use reduces abortions when fertility is constant.
- A systematic review of medical methods for first trimester abortion was completed. This review found that combined regimens are more effective than single agents, and in the combined regimen the dose of mifepristone could be lowered to 200 mg (from 600 mg) without significantly affecting method effectiveness.
- Results from a study on the use of misoprostol alone suggested great potential for the sublingual route to be developed into a method of medical abortion.
- A multinational randomized controlled trial was completed of three different misoprostol regimens, following mifepristone administration, for early medical termination of pregnancy.
- As part of technical cooperation with countries, the Programme continued to assist Romania and Vietnam with improving the quality of abortion services, including counselling. The Programme also assisted the Ministry of Health in Mongolia to conduct a strategic assessment of issues related to abortion. In all these countries Ministries of Health are implementing recommendations that emerged from strategic assessments.

(e) Promoting sexual and reproductive health of adolescents

- An analysis of demographic and health survey data for young never-married women in Colombia and Peru showed that during the 1990s an increasing percentage of these women were sexually active and that, despite an increase in contraceptive use (especially condoms), a higher percentage of them experienced unintended pregnancy and abortion.
- Thirteen focused in-depth studies from an ongoing research initiative illustrated the persistence of double standards for males and females, lack of communication between young men and women about sex, unequal power between the sexes to negotiate on sexual matters, including safe sex, and social norms that place constraints on young people's access to sexual and reproductive health services.
- Results from the baseline qualitative data collected in an operations research project in five French-speaking African countries (Benin, Cameroon, Côte d'Ivoire, Guinea and Senegal) showed that reproductive health services, especially those in the public sector, are beyond the reach of most

young people owing to cost, lack of privacy and confidentiality, negative attitudes of providers, and the prevailing societal values against sex outside of marriage.

(f) Gender and reproductive rights in reproductive health

- Publication of a CD-ROM version of *Transforming health systems: gender and rights in reproductive health,* which includes a three-week training curriculum in gender and rights in reproductive health aimed at health managers. An adaptation of the course was conducted in Myanmar for health programme managers and researchers, and a training of trainers course was conducted in Central Asia in preparation for a course to be run in Kazakhstan in 2004.
- A new "policy action tool" was under development, which will help countries to identify – and deal with – barriers and gaps in the legal, policy and normative environment related to maternal and neonatal health and health services. A study to validate the tool was completed in 2003.
- Reports were sent to four United Nations Treaty Bodies on the sexual and reproductive health situation in ten reporting countries.
- A Technical Consultation on Sexual Health in 2002 involving 60 participants from all regions of the world agreed on new definitions of sex, sexuality, sexual health and sexual rights. A medium-term programme of work for this area was developed.

(g) Technical cooperation with countries

- Twenty Long-term Institutional Development (LID) grants and eight Resource Maintenance Grants (RMGs) were awarded to HRP's network of collaborating research institutions. In 2003, Research Training Grants (RTGs) were awarded to 24 scientists from these institutions.
- In 2003, with support from HRP and from national and international sources, up to 761 research projects were ongoing in the above institutions, and a total of 736 research articles were published and/or disseminated.
- The participatory approach (known as the Strategic Approach) to improving the quality of care of reproductive health services continued to be used in 22 countries. In addition, two regional workshops to promote the Approach were attended by participants from 11 countries.

(h) Implementing best practices

- There were more than 13,000 formal subscribers to *The WHO Reproductive Health Library* (RHL) by the end of 2003 and 32 000 copies were distributed during 2003 in English and Spanish.

(i) Monitoring and evaluation

- Global, regional and subregional estimates for the number of births attended by a skilled attendant were developed and trends, levels and differentials were analysed over the period 1990-2001 (available on www.who.int/reproductive-health).
- WHO/UNICEF/UNFPA maternal mortality estimates for 2000 were developed and the global database for anaemia during pregnancy was updated (www.who.int/reproductive-health).

Overall, a 2003 external evaluation of the Programme for the period 1990–2002 reported the following: "In the period 1990–2002, HRP clearly met expectations in terms of its core mission to coordinate, promote, conduct and evaluate international research in reproductive health. HRP fulfils a uniquely important role that cannot be taken up by any other existing agency or organization in the world. HRP's reproductive health research agenda has grown while its budget has contracted. Despite these constraints, the Programme has successfully maintained its leadership role. However, in order to continue to meet the high

expectations of HRP performance by both donors and beneficiaries, additional human and financial support is needed. It is thus very important that HRP, with the help of members of its advisory bodies, gain increased support and commitment from its stakeholders."

4. Selected expected outputs for 2004–2005

(a) Promoting family planning

HRP research will contribute to improving the quality of family planning service delivery through efforts to:

- support the provision of high-quality family planning services, including the production of evidence-based guidance, delivered by a health system committed to continuous quality improvement;
- assure a broad range of safe, effective and acceptable family planning methods;
- foster an enabling environment at family, community, national and international levels for addressing unmet needs and for promoting access to high-quality services for those who desire them.

(b) Making pregnancy safer

Ongoing trials are expected to answer important research questions that have potentially far-reaching clinical and public health implications related to the prevention and management of two major complications of pregnancy: pre-eclampsia and urinary tract infection.

HRP research will focus on the leading causes of conditions responsible for adverse pregnancy outcomes, namely pre-eclampsia and intrauterine fetal growth restriction.

HRP-sponsored systematic reviews (disseminated through *The WHO Reproductive Health Library)* will provide updated and solid scientific evidence on the causes, epidemiology and management of the most important pathological conditions that affect maternal and perinatal health.

Work on the WHO global data system for maternal and perinatal morbidity and mortality will create a worldwide system of medical institutions that will periodically collect up-to-date and accurate information on maternal and perinatal health outcomes.

(c) Control of sexually transmitted and reproductive tract infections

The main research activities concern the development of new, cost-effective strategies for the control of sexually transmitted infections (STIs) and reproductive tract infections (RTIs) in special populations, as well as new knowledge for the prevention and management of STIs and RTIs. The research will yield new data on the cost-effectiveness and utility of vaccines to prevent human papilloma virus (HPV) and herpes simplex virus type 2 (HSV2) and of improved STI diagnostic methods.

In addition, HRP research is expected to provide new information on the effectiveness of the female condom (compared with the male condom) in preventing both pregnancy and STIs; and the safety and effectiveness of a highly potent combination antiretroviral regimen to reduce the risk of MTCT of HIV.

(d) Preventing unsafe abortion

HRP research in this area will:

- contribute to the provision of safe abortion services and post-abortion care in accordance with WHO best practices and national laws;
- improve the safety, efficacy, and acceptability of methods of abortion and post-abortion care;
- strengthen national health system capacities to reduce unsafe abortions and to ensure the availability of high-quality and sustainable safe abortion and post-abortion care in accordance with national laws, ethical principles and relevant international conventions and agreements;

- foster community, individual, and family support for the elimination of unsafe abortion and for post-abortion care;
- assist with the development of national health policies which are based on an up-to-date and in-depth understanding of the determinants and consequences of unsafe abortion.

(e) Technical cooperation with countries

National research capacity strengthening. HRP will continue to contribute to the strengthening of research institutions in developing countries (both new and those currently receiving support from HRP).

Policy and programmatic issues. As a result of support provided by HRP through its participatory approach, countries will be able to strengthen their strategic planning for the provision of reproductive health services.

(f) Monitoring and evaluation

HRP will continue to compile global data on maternal mortality and other indicators of reproductive health such as coverage of antenatal and delivery care, perinatal mortality and unsafe abortion. These global databases serve as benchmarks for assessing maternal mortality and morbidity.

Adolescent sexual and reproductive health. By evaluating current interventions to improve reproductive health services for adolescents and by generating new knowledge where there are gaps, HRP will enable countries to meet adolescents' needs more successfully.

Gender issues and reproductive right. HRP work will lead to the development of a health and human rights framework for country assessment of laws and policies related to reproductive health. New knowledge will be generated on whether reproductive health service could serve as an entry-point for addressing the problem of violence against women.

Sexual health. An evidence base will be built for improving understanding of the context, meaning and motivations behind sexual practices and behaviours, and the role they play in relation to people's vulnerability and risk of sexual ill health. In particular, studies will look at the reproductive health consequences of female genital mutilation and at the effects of using vaginal drying agents on sexual health. New strategies will be developed to provide guidance on how to address sexuality and sexual health appropriately in a variety of settings and for various populations, such as for migrants and sex workers in high STI prevalence areas. To further build the evidence base, HRP will also expand its review on the Global Burden of Disease to issues related to sexual health.

Section 9

Road Traffic Injuries Research Network[25]

1. History of the network

(a) Central problem

Each year road traffic collisions take the lives of 1.2 million men, women and children around the world and seriously injure millions more. While the rate of fatalities resulting from road traffic injuries (RTI) varies across regions, the death toll has proved to be highest in low- and middle-income countries, where pedestrians, motorcyclists, bicyclists and passengers are especially vulnerable.

In addition to human suffering, the estimated costs of RTI are between 1% and 2% of GNP per annum in low- and middle-income countries: a loss of approximately US$ 65 billion every year – more than the total development assistance received worldwide by developing countries. However, these are as yet conservative estimates. Detailed crash cost estimates[26] (including property damage, administrative costs, lost outputs, medical costs and human costs) may swell these estimates.

Projections indicate that RTI will be the third leading cause of death and disability in 2020 unless there is appropriate and prompt intervention. Addressing key issues – such as speeding and driving under the influence of alcohol; promoting the use of helmets, seat belts and other restraints; ensuring that people walking and cycling are more easily visible; improving the design of roads and vehicles; enforcing road safety regulations; and improving emergency response services – has demonstrated that needless deaths and disabilities caused by road traffic collisions can be prevented.

Few interventions to address RTI have been tested in low- and middle-income countries and even fewer are currently in place. Although high-income countries have had successes in implementing and evaluating such RTI interventions, the experience of these countries cannot be directly transferred to low- and middle-income country settings. As a result, there is a critical need to define global research priorities, conduct strategic research and facilitate implementation of interventions that can prevent the unnecessary loss of life from RTI.

(b) Creation of the network

The Road Traffic Injuries Research Network (RTIRN) is a partnership of scientists interested in collaborating on RTI research in low- and middle-income countries.

In 2002, with support from the World Bank, the Global Forum and WHO, the Road Traffic Injuries Research Network formalized its governance by establishing a Secretariat and Board. The network is an evolving partnership involving a broad group of committed

[25] Adapted from a text contributed by Adnan Hyder, Secretary, Road Traffic Injuries Research Network.
[26] Global Road Safety Partnership, *Estimating Crash Costs,* Geneva, 2003.

individuals and institutions – government, academic and non-governmental – in order to foster research on the impact and determinants of road traffic injuries in low- and middle-income countries, and to identify appropriate, feasible and cost-effective responses to the problem.

(c) Central objective

The central objective of the RTIRN is to establish networking mechanisms and facilitate the establishment of partnerships between RTI researchers and institutions internationally, that will support the development and strengthening of research agendas and research capacity in low- and middle-income countries.

(d) Specific objectives and strategies

The network aims to achieve its objectives by involving multiple partners with diverse competences, who work together synergistically to help find solutions to key health problems. This will be done by supporting relevant research studies, finding common strategies for evaluation, and eventually disseminating results of the studies widely. The specific objectives and strategies of the RTIRN in low- and middle-income countries are the following:

Objective 1: To advocate for research to reduce the burden of RTI, using the following strategies

- Development of targeted advocacy plan for donors (public and private), policy-makers, researchers, NGOs, and the community.
- Production and dissemination of advocacy materials, including: brochure, website, powerpoint presentation.

Objective 2: To set priorities for RTI research, using the following strategies

- Identification and documentation of priority-setting processes.
- Priority-setting processes discussed in workshops by network members.
- Advocacy of results of priority-setting processes and support for introduction and implementation of these processes in regions/countries where they have not been undertaken.

Objective 3: To help develop capacity for RTI research, using the following strategies

- Support researchers in low- and middle-income countries in the preparation and submission of successful research proposals to sponsors.
- Support researchers in low- and middle-income countries in the conduct of research
- Facilitate the dissemination of research findings.
- Facilitate the collaboration and cooperation among public health researchers and transport researchers for reduction of RTIs.

Objective 4: To promote investments for RTI research, using the following strategies

- Promote research funding for the conduct of RTI research in low- and middle-income countries.
- Engage a fund-raiser to secure funds for the network and for RTI research projects.
- Link with Global Forum for monitoring resource flows and measuring the 10/90 gap in RTI research.

Objective 5: To facilitate communication between partners involved in RTI research, using the following strategies

- Establish regular formal and informal communication between network partners through a listserve, newsletter, conferences, workshops and network meetings.
- Increase the size of the network (through distribution of promotional materials).

Objective 6: To conduct strategic research on RTI, using the following strategies

- Identify strategic research for the reduction of RTI burden in low- and middle-income countries.

- Obtain funds to carry out this research and call for proposals for its execution.
- Develop strategic research proposals involving network partners and seek funding for these proposals.

Objective 7: To disseminate and promote the application of research for policy towards reducing the burden of RTI, using the following strategies

- Opportunities for dissemination are identified and network partners are supported in this dissemination through conferences/workshops, peer-reviewed and general media publications.
- Opportunities for influencing key policy-makers are identified and pursued.
- Workshops are conducted that provide network partners with the skills and tools to influence key policy-makers.

(e) Partners

The RTIRN involves more than 100 partners collaborating on RTI research in low- and middle-income countries. These represent researchers, research institutions, users of research in both public and private agencies. The partners are continuously interacting through the electronic listserve and are linked each month through the network newsletter.

(f) Organization

A network Board was established in 2002 comprising individuals who have made concrete efforts over the past three years in the formation of the network and are motivated to establish procedures for its sustainability. As the goal of the network is to promote research in low- and middle-income countries, it is intended that by 2005 the secretariat will be located in a low- or middle-income country.

(g) Annual budget and sources of financing

Funds for the activities of the network have been provided by the Global Forum for Health Research, WHO, the World Bank and the Institute of International Health in Australia. To date the funding has been used to facilitate meetings of the network and to finance pilot research projects. In addition, critical material support has been provided by other key partners. The network hopes to double its operating budget over the next three years.

2. Main accomplishments in 2003

The main outputs of the RTIRN by the end of 2003 include the following:

- development of RTIRN brochure;
- initiation of discussions on priorities for research in low- and middle-income countries;
- abstract submission and planned workshop at the 7th World Conference on Injury Prevention and Safety Promotion (June 2004);
- lectures on RTI at meetings organized by partners, to provide information and raise the profile of RTI research issues;
- technical assistance to and oversight of three research studies in Kenya, Pakistan and Uganda;
- preparation of a business plan for fund-raising;
- distribution of monthly RTIRN newsletters electronically to over 100 partners around the world;
- engagement of over 100 partners in ongoing communication through a listserve;
- presentations to international organizations including the World Bank and the NIH Fogarty International Center.

3. Expected outputs for 2004

Over the next 12-18 months, it is expected that the RTIRN will undertake the following tasks:

- identify and locate the secretariat in a low- or middle-income country;
- consolidate the governance of the network by defining the roles of each structure (Board and secretariat);

- build on existing efforts to promote strategic research in low- and middle-income countries; and identify new research priorities through formal priority-setting process;
- establish a peer review network process for grant applications, abstract preparation and papers;
- document resources available for current RTI research in low- and middle-income countries;
- document current RTI researchers and groups in low- and middle-income countries; and implement fund-raising activities to support RTI research in low- and middle-income countries;
- continue good networking and communication mechanisms (through the electronic monthly newsletter and listserve);
- enhance the number and types of partners in the network (including the transport sector); and initiate specific activities targeted to catalyse the global community of RTI researchers. The first planned activity will take place at the World Conference on Injury Prevention and Safety Promotion in Vienna in June 2004;
- continue participation in international meetings including Forum 8 in Mexico and the World Conference on Injury Prevention and Safety Promotion in Austria.

4. Conclusions

The dedication of the World Health Day (7 April 2004) to road safety is an opportunity for the network and its partners to promote the critical need for RTI research, especially in low- and middle-income countries. In addition, the publication of the *World Report on Road Traffic Injury Prevention* also provides a means to focus global attention on this preventable cause of death and disability.

By supporting research and research capacity development in low- and middle-income countries, the RTIRN hopes to play a catalytic role in the coming years in global health development.

Section 10

Roll Back Malaria[27]

1. History of the network

(a) Central problem

Although many tools exist to fight malaria, it remains a major challenge to ensure access by vulnerable populations to key interventions – such as insecticide-treated mosquito nets, prompt and effective treatment, and intermittent preventive treatment for pregnant women. Investments in malaria control, particularly malaria commodities and delivery systems, are among the best investments a country can make – for both individuals and the economy as a whole. Research has a key role to play in improving existing tools, identifying and developing new ones (such as a vaccine) and scaling up interventions (see Insert 9.10.1).

(b) Creation of the Partnership

The Roll Back Malaria Partnership (RBM) was launched by WHO, UNICEF, UNDP and the World Bank in 1998 to provide a coordinated international approach to fighting malaria. RBM's strength lies in its ability to form effective partnerships both globally and nationally. Partners are working together towards internationally agreed malaria-control objectives and coordinate their activities to avoid duplication and fragmentation and to ensure optimal use of resources.

Another key role of the RBM Partnership is to lead continuing advocacy campaigns to raise awareness of malaria at the global, regional, national and community levels, thus keeping malaria high on the development agenda, mobilizing resources for malaria control, and ensuring that vulnerable individuals are key participants in rolling back malaria.

Insert 9.10.1

Fighting malaria: the role of research

Although funding for malaria research has increased since the launch of the RBM Partnership in 1998, it is still insufficient to meet the continuous need for new or improved weapons against the disease.

A key role of the RBM Partnership is to advocate for increased funding for malaria research. The Partnership also works to identify knowledge gaps, tools and products for rolling back malaria, works with research partners to address needs, and facilitates the transfer of research findings into policies and practice.

The RBM Partnership's priority areas for research are those that can be put into practice to help countries scale up their malaria control interventions in the near term, such as new drug development, further development of long-lasting insecticide-treated nets, intermittent preventive treatment (for pregnant women, infants and children), diagnostic tools and operations research. In the medium term, the development of a malaria vaccine, vector control research, the pursuit of innovative approaches and research capacity-building will be key areas.

RBM partners active in research include the Multilateral Initiative on Malaria (which represents the research and academia constituency on the RBM Partnership Board), Medicines for Malaria Venture, Malaria Vaccine Initiative and Special Programme for Research and Training in Tropical Diseases (TDR).

Source: RBM Partnership

[27] Adapted from a text contributed by the Roll Back Malaria Partnership, WHO. Website: http://www.rbm.who.int.

(c) Central objective of the Partnership

The objective of the Roll Back Malaria Partnership is to halve the burden of malaria by 2010, thus contributing to the achievement of the MDGs[28] by 2015.

RBM also has some interim goals, set at the African Summit on Roll Back Malaria[29] held in 2000 in Abuja, Nigeria, where 44 African Heads of State and Government resolved to initiate appropriate and sustainable action to strengthen their countries' health systems to ensure that, by 2005, the following objectives can be reached:

- At least 60% of those suffering from malaria have prompt access to, and are able to correctly use, affordable and appropriate treatment within 24 hours of the onset of symptoms.
- At least 60% of those at risk of malaria, particularly children under five years of age and pregnant women, benefit from the most suitable combination of personal and community protective measures such as insecticide-treated mosquito nets and other interventions which are accessible and affordable to prevent infection and suffering.
- At least 60% of all pregnant women who are at risk of malaria, especially those in their first pregnancies, have access to chemoprophylaxis or presumptive intermittent treatment.
- To achieve these targets, RBM is focusing on the rapid scaling up of interventions within countries, particularly to reach the most vulnerable populations.

(d) Partners

The RBM Partnership has grown rapidly since its launch in 1998 and is now made up of more than 90 partners from seven major constituencies: malaria-endemic countries, their bilateral and multilateral development partners, the private sector, NGOs and community-based organizations, research institutions and academia, and foundations.

(e) Organization

During the concept development phase of RBM (1998–2001), the Partnership functioned as a loose network of partners meeting at global events for the purpose of maintaining shared visions and objectives. An external evaluation[30] of the functioning of the Partnership was carried out in 2001–2002 and called for a more formal governance structure to be adopted for the next phase of RBM, i.e. support to countries for scaling up malaria-control interventions. RBM's new structure, adopted in 2002, is as follows:

(i) The RBM Partnership Board

The RBM Partnership Board, created in October 2002, oversees the activities of the RBM Partnership Secretariat and makes decisions on behalf of the Partnership.

Each Board member serves as a representative of one of RBM's voting constituencies, namely: malaria-endemic countries (7 seats), founding partners – WHO, UNICEF, World Bank (3 seats), NGOs (1 seat), the private sector (1 seat), research and academia (1 seat), foundations (1 seat) and OECD donor countries (3 seats). The Executive Secretaries of the RBM Partnership and the Global Fund to Fight AIDS, Tuberculosis and Malaria serve as non-voting ex officio members, while UNDP currently participates as an observer.

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[28] http://www.un.org/millenniumgoals/

[29] Roll Back Malaria/World Health Organization. *The Abuja Declaration and Plan of Action.* WHO document WHO/CDS/RBM/2003.46. http://mosquito.who.int/docs/abuja_declaration.pdf

[30] Roll Back Malaria External Evaluation Team. *Achieving Impact: Roll Back Malaria in the Next Phase.* Liverpool: Malaria Consortium, 2002. http://www.rbm.who.int/cmc_upload/0/000/015/905/ee_toc.htm

Members may appoint one alternate member to serve in their stead, under policies and procedures determined by the Board. Constituencies determine rotational or renewable status. The Board members sit on the Board for two years or such other term that the Board may determine.

(ii) The RBM Partnership Secretariat
The RBM Partnership Secretariat ensures that contributions from individual RBM partners are coordinated and focused on the expressed needs of countries and are in line with good-practice recommendations and WHO technical norms and standards.

The Secretariat is hosted by WHO and managed by the Executive Secretary of the RBM Partnership. It operates at all levels of partner engagement, i.e. at the global, regional, sub-regional and country levels. The four main areas of the Secretariat's work at the global level are:
- partnership development and networking
- country support development
- communications and advocacy
- resource mobilization and financing.

At the regional level, the RBM Partnership Secretariat facilitates liaison between regional partners and assists RBM Partnership Board members with constituency consultations. At the sub-regional level, the Secretariat promotes coordination of the timely provision of country support by RBM partners. At country level, the Secretariat supports partner coordination to ensure optimal implementation of nation-wide malaria-control efforts by governments and their partners.

(iii) Working groups
The RBM Partnership has created six thematic Working Groups, which are open to all constituencies and expected to coordinate with other global initiatives, working groups or other global committees to ensure and maintain consensus on good practices for implementation of malaria control activities. The Working Groups are active in the following areas:
- case management
- communication
- finance and resource mobilization
- insecticide-treated nets
- malaria in pregnancy
- monitoring and evaluation.

(iv) Sub-regional networks
RBM's sub-regional networks are responsible for coordinating support to countries. Partners within the networks support countries in delivering critical actions, e.g. addressing any bottlenecks encountered in implementing national-scale malaria control efforts with newly available financial resources from the Global Fund. To date, sub-regional networks have been established in East Africa, West Africa, Amazonia, Hispaniola and the Mekong.

(v) Country partnership coordinating mechanisms
In each active RBM implementing country, the in-country RBM partnership has established a coordinating structure – often based on existing structures – generally consisting of an RBM coordinating committee or task force supported by a number of thematic subcommittees. In countries receiving Global Fund grants, a member of the RBM coordinating task force is part of the country coordinating mechanism.[31]

In most countries, the national malaria control programme of the ministry of health has expanded its role to include the provision of a secretariat function to the country

[31] http://www.theglobalfund.org/en/apply/mechanisms/

partnership. The RBM Partnership Secretariat is in the process of deploying Country Partnership Advisers to these programmes to strengthen their capacity to sustain their country-level partnerships.

(f) Annual budget and sources of financing
An annual workplan with a budget of US$ 12 million for the RBM Partnership – including its management structures and implementation mechanisms – was approved by the RBM Partnership Board for the March 2003-March 2004 period. Approximately 60% of this amount was earmarked for regional, sub-regional and country activities and staff.

RBM and its Secretariat have been funded by diverse bilateral and multilateral sources. Over the past five years, these have included the governments of Australia, Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, Sweden, the United Kingdom and the United States, as well as the Rockefeller Foundation, UNICEF, the World Bank and the World Health Organization.

2. Main accomplishments 2003–2004

The emphasis of the RBM Partnership Secretariat's workplan, as mandated by the RBM Partnership Board, was on implementing the recommendations of the external evaluation as well as the Partnership's operational framework. The primary challenges were:

(a) To develop Partnership management structures
The Partnership strengthened governance and management mechanisms throughout the year by:

- holding twice-yearly RBM Partnership Board meetings;
- holding monthly Board teleconferences;
- making the RBM Partnership Secretariat fully functional at the global and regional levels (Geneva-based global secretariat and Harare-based regional focal point).

(b) To develop global consensus
In order to ensure optimal use of Global Fund resources and to support the development of new proposals, the Partnership supported the establishment of a consensus on good practices for the scaling up of malaria interventions by:

- establishing six thematic Working Groups, which are fully operational and developing strategic frameworks to guide countries and partners;
- holding an Expert Consultation on the procurement and financing of antimalarial drugs.

(c) To maintain malaria high on the global development agenda
To ensure that malaria remains an important issue to all partners – from communities and individuals to OECD donors – and to the general public, RBM coordinates partners' advocacy efforts for maximum impact. Achievements in 2003 included:

- negotiating with country health officials to ensure that malaria receives sufficient attention in health sector reviews, planning meetings and related reports;
- launching the WHO/UNICEF *Africa Malaria Report 2003;*[32]
- supporting Africa Malaria Day 2003 activities at country level;
- promoting Africa Malaria Day 2003 at the global level;
- attending key international, regional and country meetings to highlight malaria issues.

[32] WHO/UNICEF. *Africa Malaria Report 2003.* WHO document WHO/CDS/MAL/2003.1093. http://mosquito.who.int/amd2003/amr2003/pdf/amr2003.pdf

(d) To provide technical and programmatic support to countries

Focusing on 14 African countries with a high degree of readiness to implement national-scale malaria-control programmes, the Partnership began the process of (i) identifying bottlenecks hampering this implementation, and (ii) coordinating partners' support for country level scaling-up of malaria control activities. Key achievements include:

- identifying the 14 African countries with a high degree of readiness (including availability of Global Fund financing) to implement national-scale malaria-control programmes and therefore having high potential for reaching the 2005 Abuja targets;
- supporting five sub-regional networks (East Africa, West Africa, Amazonia, Hispaniola and Mekong) to coordinate consensus-building and activities;
- deploying two sub-regional RBM focal points (one each for East Africa and West Africa);
- completing country consultative missions in 14 countries;
- identifying the package of support required for the 14 countries visited;
- holding meetings to promote the sharing of experiences between countries.

3. RBM Partnership Secretariat: expected outputs 2004–2005

(a) Partnership development and networking

The key outputs in this area target the strengthening of Partnership governance and mechanisms to create a structure ensuring optimal support to countries in their scaling up of malaria control interventions, without duplication or fragmentation of efforts. These outputs include:

- strategic frameworks, developed by the Working Groups, to guide partners and countries on approaches for scaling up interventions;
- an operational Partnership Performance Tracking System and RBM Partnership global workplan, providing RBM partners with a clear understanding of their roles and responsibilities, resource commitments and performance criteria;
- targeted partnerships for the development of new tools and mechanisms for malaria control;
- a strategy for engaging the private sector and NGOs more effectively;
- a finalized RBM Partnership operational framework;
- operational governance mechanisms (e.g. full biannual Board meetings, monthly Board teleconferences, Working Group meetings).

(b) Country support development

The main objectives in this area are to achieve consensus on the critical steps that need to be taken by individual countries to make maximum progress towards the Abuja targets by 2005, and to support these countries and their partners in implementing their national malaria control programmes. Key outputs include:

- fully operational sub-regional networks in Africa (4), Asia (1) and the Americas (2);
- fully functional focal points deployed or designated at four sites in Africa and three sites outside Africa;
- fully functional country partnerships in 35 African countries;
- management system support for 24 African countries;
- mechanisms and processes to ensure effective translation of working group products into country guidance for policy, strategy and guideline formulation;
- operational arrangements for coordinating and catalysing partnership programmes for supporting policy, strategy and guideline development.

(c) Communications and advocacy

These key outputs are intended to maintain global awareness of malaria, co-ordinate

partners' advocacy efforts to boost resource mobilization, support country-level malaria communication efforts and keep partners informed of Partnership issues. These outputs include:

- global promotion of Africa Malaria Day 2004;
- a global advocacy strategy and workplan for 2004-2005;
- a mechanism allowing RBM to receive donations from the general public;
- a revised set of RBM communications and advocacy materials;
- communications strategies for 14 African focus countries, along with support to implement them;
- a good practices framework document to assist countries;
- funds disbursed for country-level radio projects in five countries.

(d) Resource mobilization and financing

In order to support countries and other RBM partners in procuring antimalarial commodities, forecasting resource needs, mobilizing resources and optimizing resource use, the key outputs in this area will include:

- a coordinated system for facilitating access to antimalarial medicines and supplies;
- a reference document on sources and prices of antimalarial medicines and supplies;
- documentation of country resource requirements for rolling back malaria between 2005 and 2010;
- guidance notes on malaria control financing issues;
- reports on efficiency in the use of existing resources for malaria control;
- research findings on the economic costs of malaria;
- a comprehensive status report on estimated costs of developing new tools and transferring knowledge;
- a malaria control financing database (to be updated quarterly).

(e) Human and financial resources to undertake 2004 tasks

In 2004-2005, the RBM Partnership Secretariat expects to increase its presence at the sub-regional and country levels, requiring an increase in budget over 2003-2004. Staffing requirements will be met, where possible, through secondment of staff from RBM partner institutions.

4. Conclusions

The Roll Back Malaria Partnership is working to help the coordination among stakeholders and to translate national commitments and global support for malaria control into action on the ground – where the strength of the RBM Partnership can make the difference.

Many tools exist to control malaria, but technology is not enough: the fight against malaria requires commitment, coordination and cash – US$ 2 billion per year in Africa and US$ 1 billion per year for other malaria-endemic areas. However, fighting malaria also requires much further research to make the existing tools more efficient and effective and to discover new tools.

Section 11

TDR: Evolving with the changing disease situation[33]

1. Creation and objectives

The Special Programme for Research and Training in Tropical Diseases (TDR) is an independent global programme of scientific collaboration. Established in 1975 and co-sponsored by UNICEF, UNDP, World Bank and WHO, it aims to help coordinate, support and influence global efforts to combat a portfolio of major diseases of the poor and disadvantaged.

Its objectives are to improve existing approaches and develop new ones for preventing, diagnosing, treating and controlling neglected infectious diseases which are applicable, acceptable and affordable by developing endemic countries, which can be readily integrated into the health services of these countries, and which focus on the health problems of the poor. It also aims at strengthening the capacity of developing endemic countries to undertake the research required for developing and implementing these new and improved disease control approaches.

TDR's mandate includes the following diseases: African trypanosomiasis (sleeping sickness), Chagas disease, dengue, leishmaniasis, leprosy, lymphatic filariasis, malaria, onchocerciasis, schistosomiasis and tuberculosis.

2. Progress and evolution since 1975

Since 1975, TDR has produced a steady stream of practical tools for making progress against the 10 diseases in its mandate. Many of the drugs and operational procedures that have made it possible to launch elimination campaigns owe their origins to TDR research, often in partnership with academia from developed and developing countries, national institutions and public and private sector partners. Some examples from a long list include ivermectin for onchocerciasis, multidrug therapy for leprosy, and eflornithine and the card agglutination test for African sleeping sickness. Recently the registration in India of miltefosine, the first oral drug for the treatment of visceral leishmaniasis, has resulted in extensive phase IV studies to assess whether it is appropriate for use on a wide scale in public health.

TDR-sponsored research also led to the development and availability of praziquantel for use in mass treatment for schistosomiasis, the use of fumigant canisters to control the vector that causes Chagas disease, and the introduction of insecticide-treated nets for malaria following extensive field testing by TDR. TDR-sponsored projects also led to the establishment of Artemisinin Combination Therapy as the preferred treatment for malaria. In addition, many practical procedures, including rapid epidemiological mapping and community-directed treatment, have also contributed to the effectiveness of control programmes and are now a standard component of several tropical disease control programmes.

[33] Adapted from a text contributed by Jens Kastberg, TDR Secretariat.

TDR has evolved over the years in line with the changing infectious disease situation and the new challenges that have emerged, some of which are formidable. Diseases such as malaria, TB, dengue and African sleeping sickness continue to impose a heavy burden among the poorest populations. Resistance to first-line drugs has developed and spread at an alarming rate. HIV/AIDS – unknown when TDR was created – is undermining global health and exacerbating the clinical course of TB and leishmaniasis. Positive developments have likewise created new demands at the operational level. For example, the control strategies being used by several of the new public-private partnerships have intensified the need for TDR support.

TDR itself has also catalysed and fostered the establishment of many new partnership organizations including, notably, the Global Forum and the Medicines for Malaria Venture.

TDR recently undertook a major review of its activities utilizing the Global Forum's Combined Approach Matrix (see chapter 4, section 3). The exercise was based on the following documents:

- the analyses carried out by TDR, WHO and the World Bank between 1993 and 1996 which culminated in the 1996 Ad Hoc Committee Report;[34]
- the Global Forum's proposed CAM for setting priorities in health research.[35]

This led to the definition of a set of "strategic TDR emphases" (or priorities) for the following five years, based on a transparent and objective prioritization process with the active participation of partners from both health research and disease control. The new TDR strategy calls for a much closer interaction with health systems and disease control programmes, supported by the continued exploitation of scientific and technological advances – from basic to applied research, from biomedical to human sciences, and from laboratory-based to field research.

Whenever successful interventions and progress have been made to control a particular disease, or collection of diseases within a given region, the value of research has invariably manifested itself through:

(i) the availability of improved tools and methodologies;
(ii) continued inclusion of research into how best to implement these interventions as the tools and methodologies are taken into use and scaled up.

If research issues are recognized at the earliest stages of disease control efforts, then a culture of research and analysis can be created that will continue to inform programmes of potential issues and allow strategies to be developed to address them. Building of research capacity and of capacity to undertake disease control programmes through national health systems go hand in hand and should be seen as complementary endeavours. Similarly, both disease control needs and the context in which health care is provided should be recognized and understood by researchers as soon as they embark on applying science to practical outcomes, if their output is to have any value. There is a need for close liaison between those involved in disease control and those engaged in research. Operational interactions between research and control need to focus on research outputs, new concepts and new tools, implementation and scale-up research.

[34] *Report of the Ad Hoc Committee on Health Research, Investing in Health Research and Development,* WHO, 1996.
[35] Global Forum for Health Research. *The 10/90 Report on Health Research 2001-2002.*

Researchers and those involved in disease control often come from different cultures and backgrounds, which has led to a differing set of priorities and gaps in understanding and appreciation of each other's viewpoint. An added complication is that international thinking about research issues and global disease control assessments requires a categorization of issues into manageable 'topics' and organizational units (e.g. by disease and underlying public health issue). At national and sub-national levels, these categorizations often become increasingly less meaningful as they have to be made relevant to health systems having to deal with multiple diseases in a specific public health context (e.g. facing social and behavioural issues at the local level and health policy and financing issues at the macro-level).

3. Research capacity strengthening and transferring technology

Miltefosine (Insert 9.11.1) is an example of an oral drug for treatment of visceral

Insert 9.11.1

TDR and miltefosine: an example of an oral drug for treatment of visceral leishmaniasis (kala-azar) developed through a public-private partnership

A unique partnership brought together by TDR

In 1988, TDR-funded research discovered that miltefosine, a drug then under development for cancer treatment, had anti-leishmaniasis activity. In 1995, Zentaris (then ASTA Medica) signed an agreement with TDR that led in 2002 to the registration of miltefosine for the treatment of visceral leishmaniasis. TDR established a Product Development Team (PDT) involving clinical investigators from India and from Zentaris, Germany. Managed by the PDT, the whole process to registration was completed in less than seven years and phase IV studies are now near completion.

The partnership now includes researchers from Nepal and Bangladesh who are currently assessing the applicability and public health relevance of making this new drug accessible to the larger population affected by the disease. The drug will be made available to the public sector at a reduced price to reflect public sector investment in visceral leishmaniasis. The total cost of developing miltefosine was about US$ 16 million, of which about US$ 1 million was contributed by TDR. This is considerably below the hundreds of millions often quoted as the cost of new drug development. Some of the main reasons that made this lower cost possible in this case are the following:

- **R&D process:** TDR funding of general screening activities allowed the identification of leishmaniasis activity in a drug already being developed for other purposes, i.e. cancer treatment. This avoided the huge costs of running discovery laboratories as well as the costs of failures.
- **Public-private partnership:** organizing the field trials through the PDT and involving Zentaris, Indian government research institutions, public health care facilities, as well as the Indian regulatory authorities throughout the process helped keep down the cost of the field work and of the registration in India.
- **TDR's operational capabilities:** making it possible to establish and run a virtual product development organization, focusing only on the development of miltefosine, drawing on world leading experts, and with negligible fixed and overhead costs.

Miltefosine is expected to revolutionize the treatment and control of visceral leishmaniasis and alleviate the suffering of millions of adults and children. By reducing the disease burden in populations affected by the disease, miltefosine could help boost economic and social development in some of the world's poorest communities.

The drugs currently used to treat visceral leishmaniasis are toxic (often involving severe adverse reactions), highly expensive and of limited therapeutic efficacy. By contrast, miltefosine is affordable and has a proven cure rate of about 98%. An additional asset is that it does not require refrigeration for storage.

Source: TDR Secretariat.

leishmaniasis (kala-azar) developed through a public-private partnership with far-reaching benefits in terms of capacity strengthening. All the clinical trials for miltefosine were conducted in India, where Indian laboratories, doctors and administrators were involved in the process, with guidance and monitoring provided by TDR. Laboratories were set up with state-of-the-art equipment and individuals were trained to carry out clinical research under Good Clinical Practice (GCP). As a result, the data gathered from these clinics are not only reliable but also the safety of patients is ensured under good ethical procedures. This resulted in the galvanization of local institutions and increased the Indian research capacity beyond the miltefosine studies. From an initial focus on phase II and III clinical development studies, the emphasis has now shifted to training for phase IV clinical studies and to the development of a multinational disease control programme (India, Bangladesh and Nepal).

While each case is unique, some of the determinants for success in the development of miltefosine may be intrinsic to the way TDR is set up and operates. These include the following:

- A level of credibility that facilitates the involvement of leading scientists and R&D partners.
- Country networks which help facilitate the organization of complex studies, including clinical trials.
- A flexible funding procedure that allows TDR to pursue quality opportunities when they occur.
- A management mechanism (the product development team) which allows quality professional management of each individual product development in which it engages.
- The product development team can draw on a full complement of ancillary expertise in TDR (e.g. in pre-clinical and clinical coordination, data management, capacity building).
- A managerial infrastructure which allows it to establish and run ad hoc virtual project organizations, tailored to the needs of each development project.

4. Looking ahead

Ideally, interventions developed in partnership with TDR should be cost effective, robust under the harsh conditions and resource-poor settings of developing countries, and be operationally as simple to implement as possible. They should also be acceptable to communities and sustainable. In line with this pragmatic approach, TDR also conducts implementation research to assist the introduction of new tools into disease control programmes in endemic countries. Practical factors that influence the access of populations to treatment are thus an important research focus, underscoring TDR's concern to see that new tools, once available, work well in practice.

There has been an increased level of interest in malaria and TB research in recent years which TDR has promoted and is seeking with others to capitalize on. However many of the other TDR diseases remain under-resourced for research and control activities and require continued promotion and new ideas. At the same time, the increasing impact of the HIV/AIDS pandemic, and its influence on the communities affected by TDR diseases, require TDR to work at the interfaces of HIV/AIDS and other diseases, from basic research through to implementation research. The growing interaction of social, economic and behavioural research with biomedical research is an area that will require attention in the coming years. Of crucial importance in this respect is the need to partner with others to further develop research capacity in developing countries.

B. Networks focusing on determinants (risk factors)

Section 12

Child Health and Nutrition Research Initiative[36]

The size of the problems affecting child health and the rationale for the creation of the Child Health and Nutrition Initiative in 2000 were presented in *The 10/90 Report on Health Research 2001-2002* (Chapter 8, Section 9, pages 181-187). It described the objectives, strategies and governance of this Initiative and identified the key priorities in the field of malnutrition and perinatal health as follows:

Recommendations for research on malnutrition

- Interventions to reduce low birth weight
- Prompt implementation of interventions for the management of diseases and conditions in low-birth-weight children
- Calculate the burden and describe the functional consequences of micronutrient deficiencies
- Improvement of nutritional status of the family and the population through development efforts
- Breaking the vicious cycle of infection and malnutrition
- Rehabilitation and early stimulation of low-birth-weight infants
- Investigation of the prevalence of micronutrient deficiency and anaemia in young children
- Intervention involving food fortification or dietary changes
- Operations research to improve implementation of existing interventions
- Cost-effectiveness comparison of interventions
- Establishment of the role of childhood diets in the development of noncommunicable diseases.

Priorities in the field of perinatal research:

Epidemiological research

- Country-specific data on causes and determinants of newborn deaths in the community
- Validated verbal autopsy tool to determine biological causes, and sociocultural and logistical determinants of perinatal and neonatal deaths in the community.

Formative research

- Household maternal and newborn care practices, especially regarding delivery and early newborn care

[36] Adapted from a text contributed by the Child Health and Nutrition Research Initiative.

- Barriers to seeking and receiving care
- User perceptions and expectations of the formal health system
- Models of community participation.

Operations research
- Effectiveness of packages of maternal and newborn interventions delivered at the community level
- Workers and infrastructure needed to support delivery of lifesaving interventions at the community level, especially during the postpartum period.

State-of-the-art research
- Detection and management of maternal reproductive and urinary tract infections
- Models of breastfeeding promotion
- Strategies for maternal and/or newborn nutritional supplementation
- Prevention of mother-to-child HIV transmission
- Prevention, recognition and management of newborn infections, birth asphyxia and hypothermia
- Optimal umbilical cord care in the community.

In 2001, a first request for proposals (RfP1) was issued on the regional assessment of research priorities and research institutions (results in 2004). In 2002, RfP2 was issued for research on scaling up programmes on breastfeeding in low- and middle-income countries. In 2003, RfP3 was issued on low birth weight and its determinants. Research is presently being carried out on these various projects and reports will be periodically issued on progress.

Following a thorough selection process, the Centre for Health and Population Research (ICDDR,B) in Bangladesh was selected to host the CHNRI Secretariat for an initial two-year period. The transition from the interim secretariat to the Dhaka centre is expected to take place in mid-2004.

CHNRI fills an important gap as an initiative focusing on child health and nutrition research in the most vulnerable populations of the world. It hopes to serve as a platform for a wide array of partners to discuss critical issues, share experiences, decide on key priorities for research and implement strategies to fulfil a critical need in the global health research agenda.

Section 13

Sexual Violence Research Initiative[37]

1. History of the network

(a) The central problem

Sexual violence is defined as "any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting, including but not limited to home and work".[38]

Sexual violence is both a public health problem and a violation of human rights. It occurs across continents and cultures and has a profound impact on physical and mental health both immediately and many years after the assault. In addition to injuries, it is associated with an increased risk of a range of sexual and reproductive health problems such as unwanted pregnancy, unsafe abortion, STIs and HIV/AIDS, urinary tract infections, chronic pelvic pain, vaginal bleeding or infection. Sexual violence also contributes to the development of high-risk sexual practices such as non-use of condoms, multiple partners, and participation in sex work. Mental health consequences are just as serious as physical injuries and may often confer increased risk of poor emotional health during the lifetime of the affected individual. Mental health disorders related to sexual violence often include depression, post-traumatic stress disorders and sleep difficulties.

Sexual violence also has profound consequences for the victim's social well-being. It may result in dropping out of school, homelessness at an early age, as well as stigmatization and rejection by families and communities. If women have children, all of these factors may also seriously affect their children's health and development. Mortality associated with sexual violence may occur through suicide, HIV infection, and murder – either during the attack in the case of rape or subsequently in murders committed in the name of 'honour'.

Despite its significance, sexual violence has received little attention from researchers, policy-makers and programme designers. In many parts of the world, there is virtually no research on the issue. However, available data indicate that as many as one in five women report sexual violence by an intimate partner and up to one third of girls report forced sexual initiation. In many countries, interventions to prevent or respond to sexual violence are limited and most have not been evaluated. Moreover, since these interventions have been predominantly developed in industrialized countries their relevance to low resource settings is mostly untested.

To respond effectively to the problem of sexual violence, there is a need for reliable data from all regions of the world, but particularly from developing countries and central and eastern Europe. Data are needed on the magnitude and nature of the problem, its health impact and risk factors, so as to better estimate the burden of the disease and

[37] Adapted from a text contributed by the Secretariat of the Sexual Violence Research Initiative. Website: www.who.int/gender/violence/sexual research.en

[38] WHO, *World Report on Violence and Health,* 2002.

improve knowledge of why it persists. Equally, there is a need for more knowledge of existing interventions and their cost-effectiveness, starting initially with those in the health sector.

(b) Creation of the network

The Sexual Violence Research Initiative (SVRI) aims to build an experienced and committed network of researchers, policy-makers, activists and donors to help ensure that the many dimensions of sexual violence are addressed from the perspective of different disciplines and with a multicultural outlook. It was established in April 2003 with initial funding by the World Bank (through its contribution to the Global Forum) and will be hosted initially by WHO.

(c) Central objective of the SVRI

The SVRI focuses on the sexual abuse and coercion of adult and adolescent women, child sexual abuse, sexual torture and sexual violence in war situations, female genital mutilation and trafficking in women and girls for sex.

The global objective of the SVRI is to promote and disseminate research to reduce and respond to sexual violence in low- and middle-income countries through identifying gaps, building capacity, supporting research, raising awareness and building partnerships.

(d) Partners

Over the past two and a half years, many individuals and organizations have been involved in shaping the goals and agenda of the SVRI. These include individuals from international organizations, national and international NGOs, universities and other research institutions and government departments. These partners interact with one another through the SVRI list serve from which research teams and technical experts can be identified (http://www.who.int/gender/violence/sexviolresearch/en/). Details of how to become a member of the SVRI and join the list serve are available on the website.

The SVRI also links up with other initiatives that work on violence against women such as the WHO Multi-Country Study on Women's Health and Domestic Violence Against Women, the International Research Network on Violence Against Women and the Global Coalition on Women and HIV/AIDS.

(e) Organization of the SVRI

Coordinating Group

A Coordinating Group with nine members provides overall guidance to the work of the SVRI. This group meets annually and holds a teleconference at least once a year to review the work of the SVRI.

Technical Support Team

A Technical Support Team provides technical and administrative support to the Initiative and is based in WHO for its first two years of activity, after which another host institution will be selected through an open process to host the Initiative.

2. Main achievements in 2003

The annual meeting of the Coordinating Group in August 2003 agreed on a detailed plan of action for the first year of operations. The recruitment of a full-time Programme Officer for the SVRI was initiated at the end of 2003.

The following research priorities have been identified:

- nature and magnitude of sexual violence, including qualitative research on masculinity and other risk factors;
- health consequences of sexual violence;
- women's responses to sexual violence;
- medico-legal responses to sexual violence;
- alternative forms of justice in cases of sexual violence.

3. Expected outputs for 2004-2005

The planned activities for 2004-2005 are grouped under five key strategies, designed to meet the SVRI objectives:

Strategy 1: Strengthen and expand a network of stakeholders including researchers, NGOs and policy-makers

- A directory of organizations/programmes working in the field of sexual violence will be developed.
- E-mail and web-based discussion to promote dialogue among researchers, policy-makers and other interested individuals/organizations will take place via the SVRI interactive website.

Strategy 2: Establish a resource database to provide technical assistance to researchers and information on sexual violence

The SVRI website will also include:

- information on sexual violence research instruments and methodologies;
- information on ethical considerations in sexual violence research;
- links to the latest sexual violence research reports and publications.

Strategy 3: Identify research gaps, set research priorities and undertake pilot research

Desk reviews will be commissioned on:

- sexual violence research instruments
- alternative forms of justice
- health sector responses to sexual violence
- women's responses and recovery pathways after sexual violence.

Strategy 4: Help raise funds and pool human resources to carry out needed research in a coordinated and consistent way for the following research priorities

- health sector responses to sexual violence
- women's responses and recovery pathways after sexual violence
- alternative forms of justice
- development of a database of technical experts on sexual violence
- development of a database of donors funding work on violence.

Strategy 5: Engage in dialogue across sectors by participating in key forums and conferences of health professionals

- Participation in international events and panels to highlight the work of the SVRI.
- Organization of a technical workshop to build capacity in sexual violence.
- Organization of a conference on sexual violence research, to present the preliminary results of any research undertaken under the SVRI, as well as other research and key developments in the field.

The process for identifying a new host institution for the SVRI technical support team will also be developed during 2004 through an open call for proposals and subsequent review. It is envisaged that a successor will be identified through this participatory process by the end of 2005.

4. Conclusions

The SVRI slogan is 'Living Free from Sexual Violence' – reflecting the Initiative's goal to engage in research that will result in concrete action to address this global problem.

Through the SVRI, approaches and interventions that address sexual violence can be documented, evaluated and shared with a wide and diverse audience. Research and evaluation methodologies can be developed and implemented. The Initiative will also seek to influence donor agencies to include sexual violence in their agendas.

The SVRI is an initiative that reflects both geographical and professional diversity. It aims at reducing the incidence of sexual violence by simultaneously addressing the lack of research on the different aspects of sexual violence, as well as drawing the

attention of a wide range of people, including policy-makers and the media, to this important public health and human rights issue. Through the SVRI, emphasis will be placed on local research, particularly in developing countries, where there is very little data. This critical research has the potential to lay the foundation for interventions that are both effective and sustainable. By engaging with researchers, activists and policy-makers in different areas of the world, a cohesive movement against sexual violence can be developed and supported.

C. Networks focusing on priority-setting methodologies

Please refer to Chapter 4, which summarizes the efforts undertaken by various institutions in the 1990s in the field of priority-setting methodologies. In particular, the chapter reviews the following methodologies:

- the *Essential National Health Research strategy* proposed by the 1991 Task Force on Health Research for Development
- the *five-step approach* proposed by the 1996 Report of the Ad Hoc Committee on Health Research
- the *visual health information profile* proposed in the 1997 Report of the WHO Advisory Committee on Health Research
- the *Combined Approach Matrix* proposed by the Global Forum for Health Research in 1999
- the methodologies applied by the National Institutes of Health (USA), WHO's Department of Reproductive Health and Research, and the TDR Programme.

D. Networks focusing on policies and cross-cutting issues

Section 14

Alliance for Health Policy and Systems Research[39]

1. History of the network

(a) Creation

The Alliance was established in November 1999 and formally launched in March 2000 under the legal umbrella of the Global Forum and with its Secretariat based in WHO. The Alliance has its origins in the recommendations of the 1996 Report of the Ad Hoc Committee on Health Research, which identified lack of health policy and systems research (HPSR) as a key problem impeding the improvement of health outcomes in low- and middle-income countries. The Alliance was created to raise the international profile of HPSR, and to encourage knowledge generation and use (www.alliance-hpsr.org).

(b) Central problem

The central problem that motivates the Alliance for Health Policy and Systems Research is that there is, first, a gross lack of information on the performance of health systems and on how policies affect performance. This knowledge gap is particularly apparent given current efforts to expand funding for the health sector, engage in new forms of development partnership and scale up health services for specific diseases. Second, even when knowledge is available, it is not necessarily known to or used by policy-makers. Finally, the availability of knowledge and its appropriate use are both associated with low capacity to produce and disseminate research. These are examined in turn below.

Problem 1: Lack of knowledge about health policies and health systems

The research areas of health policy and health systems have until recently been neglected, especially in low- and middle-income countries. The Ad Hoc Committee on Health Research concluded that: "Health care systems vary greatly in their performance – in how efficiently they improve health conditions, extend access and contain expenditure growth; yet there remains a surprising lack of information on the performance of systems and on how policies have affected performance."[40]

Since 1996, there have been two notable initiatives. First, important efforts have started to measure and compare the performance of

[39] Based on a text contributed by the Secretariat of the Alliance for Health Policy and Systems Research.
[40] Ad Hoc Committee on Health Research. *Investing in Health Research and Development,* Geneva, WHO, 1996.

health systems worldwide.[41] Indicators are now being used at country level to monitor on a continuous basis stewardship functions, health expenditure, resource allocation, equity in financing and the responsiveness of health systems to people's expectations. Second, the report of the Commission on Macroeconomics and Health has investigated the impact of health on development and recommended a plan of action to promote growth and reduce poverty through better health.[42] The proposal of the Commission is for a five-fold increase in donor assistance to low-income countries for essential health interventions, including HPSR.

Despite the progress made since the 1996 Report of the Ad Hoc Committee, there is still an urgent need to improve our understanding of how societies organize themselves to achieve health goals, including how they plan, manage and finance activities to improve health, as well as the roles played by different actors in these efforts, their perspectives and interests. In particular, there is an urgent need to provide scientifically sound, socially relevant and ethically acceptable guidance for more effective, efficient and sustainable health policies and systems. Research is required both on the process of health policy-making and on the desirable content of health policies.

Problem 2: Low utilization of research results

The importance of using the findings of health research in policy-making, and therefore the need to understand the mechanisms involved, is increasingly recognized.[43] Efforts to substantially increase resources to improve health in developing countries, and global pressures for sustainability and accountability, highlight the importance of research-informed policy-making. But little effort has been directed at improving research utilization in the field of health policy and systems development.

More attention needs to be given to developing the interfaces between producers and users of research.[44] Actions by individuals can be useful in generating interaction, but it is important to consider the role of the wider health research system in encouraging or facilitating interactions, networks and mechanisms at a system-wide level. There is increased recognition of the significance of policy-makers demanding and actively assimilating research. More attention needs to be given to promoting incentives, both for researchers to produce research results which are geared to the problems confronting policy-makers, and for policy-makers to formulate their research needs and make use of research results. Improving the interaction across the research and policy interfaces involves developing an institutional framework or enabling environment that takes into consideration the needs of researchers, policy-makers and programme managers.

Explicit and well institutionalized mechanisms for the utilization of research need to be in place before research funding can be scaled up to the amounts that have been proposed. If governments and donors are to increase funding, they need to be convinced that effective research-to-policy processes have been tested, and that results have been

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[41] WHO. *World Health Report 2000: Improving the performance of health system.* Geneva, 2000.

[42] WHO Commission on Macroeconomics and Health. *Investing in Health for Economic Development,* Geneva, 2001.

[43] Hanney SR et al. "The Utilisation of Health Research in Policy-Making: Concepts, Examples and Methods of Assessment." in *Health Research Policy and Systems,* 1:2 2003.

[44] Alliance for Health Policy and Systems Research. *User-driven health policy and systems research. Experiences from the North and South. Workshop report and case studies,* Talloires, France, September 2002.

applied to the benefit of people's health. There is therefore a need to develop and evaluate sustainable institutional mechanisms to relate the producers and users of research at all levels of the national health system as well as at regional and global levels.

Problem 3: Low capacity to produce and fund research

The problems of limited knowledge and limited use are associated with low capacity, though this is by no means the only explanation.

Data collected by the Alliance provide a snapshot of the current situation with regard to institutional capacity.[45] Producers of HPSR are mostly small public and increasingly private institutions/units. On average, they have per annum three projects, eight researchers and a total project portfolio of less than US$ 200 000. It is estimated that only 7% of projects receive financing of US$ 100 000 or more, accounting for 54% of total project funding, with most projects funded at much lower levels. Direct funding from international sources accounts for 69% of total project funding, while national governments account for 26%. Experience, attainment of critical mass and stakeholder engagement are low, with only 19% of researchers trained at PhD level.

These data can be tentatively extrapolated to an estimated 650 HPSR producer institutions in low- and middle-income countries with which the Alliance has had contacts. There are an estimated 5500 researchers working in the field of HPSR – of whom about 1000 have PhDs – and there are about 2000 HPSR projects under way. Annual project funding is estimated at US$ 58 million, with international donors accounting for US$ 39 million, governments for US$ 16 million and private and other (national) sources for US$ 3 million.

The US$ 16 million which governments spend annually is much lower than the amounts that development institutions earmark for HPSR as part of their health lending to governments. The reason may be that this multilateral support for HPSR is either spent outside the country through contracting agencies in the North or is not spent in spite of being earmarked within development projects. Anecdotal evidence suggests that a large part may go unspent due to the low priority assigned to research by decision-makers, lack of capacity in country to undertake the competitive tendering required, lack of competitive bidders and/or inappropriate loan disbursing requirements on the part of development institutions.[46,47,48]

The estimated share of HPSR project funding relative to total health expenditure is estimated to be 0.007% for developing countries in general. The 1990 Commission on Health Research for Development recommended that total health research expenditure in the South should be 2% of national health expenditure. If HPSR accounted for a modest 5% of this total, HPSR should be 0.1% of total health expenditure. On this basis, current HPSR expenditure at 0.007% is 14 times below this norm.

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[45] Gonzalez-Block MA and Mills A. "Assessing Capacity for Health Policy and Systems Research in Low- and Middle-Income Countries" in *Health Research Policy and Systems,* 1:1 2003.
[46] Yepes FJ et al. *Funding Research for Policy in Colombia's Reformed Health Sector,* Alliance HPSR, Working Paper No. 11, Geneva, 2002.
[47] Salem MA. *Policy Research in Egypt's Health Sector Reform,* Alliance HPSR, Working Paper No. 13, Geneva, 2002.
[48] World Bank. *Sector Strategy: Health, nutrition and population,* Washington DC, 1997.

A variety of grant mechanisms/instruments have been developed for implementing research strengthening activities including: institutional grants, partnership grants, research training grants, re-entry grants, workshops and small grants. In all cases, to be successful, capacity building should be research-based and respond to national needs and priorities.[49] So far, it has not been possible to identify from a cost-effectiveness point of view one approach or mechanism with maximum benefit/impact. Indeed, it is likely that multiple approaches are required, their impact being greater than the sum total of individual grants/mechanisms.

It is clear from Alliance analysis to date that HPSR producers need to increase their capacity and critical mass to engage effectively in policy debates and interaction with stakeholders, and to absorb a larger volume of resources. In addition, support needs to be provided for institutions to network, both nationally and internationally. Finally, capacity development must encompass research users from the start of the research process, in order to maximize chances that the research needs of policy-makers are met.

(c) Objectives and strategies

The Alliance aims to promote the generation, dissemination and use of knowledge for enhancing health systems performance. More specifically, the objectives of the Alliance are:

- To stimulate the generation and synthesis of knowledge, encompassing evidence, tools and methods.
- To facilitate the development of capacity for the generation, dissemination and use of knowledge among researchers, policy-makers and other stakeholders.
- To promote the dissemination and use of knowledge to improve the performance of health systems.

To reach these objectives, the strategies of the Alliance are the following:

- monitoring and publicizing the global progress of HPSR
- synthesizing, disseminating and funding research on priority areas
- encouraging the attainment of a critical mass of researchers in the field of HPSR
- promoting policy-relevant research and evidence-based decision-making
- ensuring widespread access to HPSR knowledge through effective communications strategies
- monitoring and evaluating progress in the Alliance partnership.

(d) Partners

Key actors for the Alliance are policy-makers and service managers willing to integrate research into their daily work, researchers striving to apply their knowledge for health system and policy development, professionals in technical support roles to policy-makers, and investors funding health systems development and research. These actors are usually organized in autonomous institutions that require interfacing through mechanisms and institutions to ensure their most effective interaction.

To date the Alliance collaborates with 341 partner institutions in 88 countries. Insert 9.14.1 shows their distribution by region. About 28% of them are private institutions and 68% are research producers, while the rest are policy analysis and consulting units. Over half of them (55%) have less than 10 years' experience.

[49] Alliance HPSR. *Report on the consultation held in Bangkok (14 October 2000)* and *Implications for Capacity Strengthening,* Alliance HPSR, Working Paper, Geneva, 2000.

Insert 9.14.1

Distribution of Alliance partners by WHO Region

REGION	Percent
Africa	22
Americas	25
Middle East and Northern Africa	4
Europe	11
South East Asia	21
Western Pacific	15
International Agency	2
Total	**100**

(e) Organization

The Alliance Board (composed of up to 20 members) is assisted by an Executive Committee (five members selected among the members of the Alliance Board). The Secretariat is responsible for reaching the objectives defined by the Board within the given policies and budgets and reporting as appropriate to the Board and the EC.

(f) Annual Budget and sources of financing

Between 1999 and 2003, financial support to the Alliance has been provided by the Governments of Canada (IDRC), Norway (NORAD), Sweden (Sida/SAREC), UK (DFID), USA (US Agency for Healthcare Research and Quality), the World Bank and WHO. The total budget amounts currently to close to US$ 2 million per year.

2. Main accomplishments in 2003

Under Strategy 1: Monitoring and publicizing the global progress of HPSR

A Biennial HPSR Review to advocate for HPSR as a tool for policy development at all levels of the health system is under preparation. In collaboration with WHO, a methodology to assess the impact of research on policy was piloted and a study launched in six countries. The historical assessment of HPSR in the first Biennial Review will highlight that, in spite of significant growth, large gaps in understanding health systems, policies and interventions persist. Examples of how HPSR has influenced policy and practice will be highlighted to help advocate for greater demand, funding and utilization. The mechanisms and processes whereby HPSR is or can be brought to bear on policy will be reviewed with examples from diverse countries and situations. Special attention will be given to the role of bilateral and multilateral institutions in the demand for and utilization of research.

Using bibliometric techniques, HPSR literature trends in the last 10 years will be analysed and research gaps and imbalances identified. A review of research will be carried out, focusing on specific areas such as: the expansion of private services, decentralization, social insurance, user fees, community health insurance, management reforms and accountability. With the support of a survey, the review will also identify research priorities as defined by HPSR institutions in developing countries, their actual project portfolio and their research capacity.

Under Strategy 2: Synthesizing, disseminating and funding priority research

During 2003, the Alliance followed up on the progress of 30 funded projects to support the generation of knowledge in high priority areas. A third call for research-to-policy studies was launched with the selection of 17 projects. Two multi-centric, strategic research projects were supported in Africa on the retention of human resources in rural areas. Six projects were seed-funded and technically supported in collaboration with IDRC to focus on governance, equity and health in Eastern and Southern Africa.

Under Strategy 3: Encouraging the attainment of a critical mass of HPSR researchers

In collaboration with the Global Forum, COHRED and INCLEN, the Alliance supported the preparation of resource modules in the field of priority setting, advocacy, leadership and knowledge management. These were tested through four regional workshops as training and research development tools.

A call for applications was launched to strengthen the capacity of teaching programmes to address HPSR. The call aimed to increase the interest of students in research into health policy and systems, supporting dissertations in this area and to further the policy relevance of postgraduate HPSR teaching and dissertations. A total of 37 applications were received (Asia 15, Latin America and the Caribbean 14, Africa 4, and Europe and Central Asia 4).

Under Strategy 4: Promoting policy-relevant research and evidence-based decision-making

An evidence and expertise search engine focusing on increasing the utilization of HPSR were launched as part of the Alliance Impact on Policy Web pages.[50] Besides the search engine, resources include relevant links, case studies and training resources. Consultations were undertaken to identify methods to facilitate the policy impact of HPSR through synthesis of knowledge.

Under Strategy 5: Ensuring widespread access to HPSR knowledge through effective communications strategies

A book entitled *The new public/private mix in health: exploring the changing landscape*[51] was published, seeking to give some examples of the ways in which developing countries are grappling with managing aspects of their mixed health care economies. The book contains a set of case studies organized around four themes: regulation of the private sector; public health roles of private providers; public/private mix in health insurance; the quality/affordability trade-off in public and private settings. In addition, the Alliance *Newsletter* is published three times per year and distributed to all Alliance partners.

3. Expected outputs for 2004

Activities planned by the Alliance for 2004 include:

- promotion of strategic research on high priority issues
- in collaboration with IDRC, funding of two projects on governance, equity and health in Southern and Eastern Africa
- launch of the first issue of the Biennial HPSR Review
- assessment of the collaboration with regional HPSR networks and planning of a new phase of support for the next three years
- further analytical work on the interface between research and policy
- synthesis of HPSR results appropriate for the realities of the South as a means to promote evidence-based health policy development
- publication of the *Second Version of the Resource Modules* on priority setting, advocacy and knowledge management
- presentation of the results of the work of the Alliance at Forum 8 and the Ministerial Summit on Health Research, to be held in November in Mexico City.

[50] http://www3.alliance-hpsr.org/asp files/production/rtophomems.asp

[51] Söderlund N, Mendoza-Arana P and Goudge J (eds.). *The new public/private mix in health – exploring the changing landscape*. Geneva, Alliance for Health Policy and Systems Research/Global Forum for Health Research, 2003.

Section 15

Council on Health Research for Development (COHRED):[52] building research systems for health and development

1. History of COHRED

In 1990, the Commission on Health Research for Development noted that decision-makers and communities often fail to recognize the value of health research. Health research is often considered to be irrelevant to local concerns and realities. As a result, research findings are either not made available – on time or in the appropriate format – or are rarely used in policy-making and health action. The Commission on Health Research for Development also highlighted the "gross mismatch between the burden of illness overwhelmingly in the Third World – and investment in health research, which overwhelmingly focused on the health problems of industrialized countries."[53]

Based on the Commission's recommendation to "encourage all countries to undertake Essential National Health Research (ENHR)", a Task Force on Health Research for Development was established in 1990 to assist developing countries in implementing the ENHR strategy and to propose strategies for implementation of all other recommendations of the Commission. In 1993, the Task Force – led by majority membership of countries in the South and supported by key donors and institutions from the North – recommended the establishment of the Council on Health Research for Development (COHRED). This recommendation was endorsed during the first International Conference on Health Research for Development (Geneva, 1993).

Over the past decade, COHRED has made a significant contribution to health and health research in the South by advocating for ENHR and by strengthening the capacity of countries to better prioritize and manage health research resources. Basing its approach on the participation of all stakeholders (not only researchers and research institutions) and on increasing the evidence base for health decision-making at all levels of the health sector, COHRED emphasized countries as the key actors in health research for development.[54,55] Many of the concepts pioneered by COHRED (ENHR; "countries first"; inclusive health research agenda setting and prioritization; increasing the accountability of health research; emphasizing the need for solid evidence to underpin health sector reform) have now become mainstream concepts.

In 1999, COHRED organized and facilitated extensive regional consultations aimed at reviewing global developments in health research 10 years after the publication of the report of the Commission on Health Research for Development. Through this process, the voice of countries – especially those in the

[52] Adapted from a text contributed by Sylvia de Haan, Carel Ijsselmuiden and Lisa Myers, COHRED.
[53] Commission on Health Research for Development. *Health Research: Essential Link to Equity in Development*, New York, Oxford University Press, 1990.
[54] Neufeld V and Johnson N (eds.). *Forging Links for Health Research. Perspectives from the Council on Health Research for Development*, IDRC, 2001.
[55] COHRED. *Health Research. Powerful Advocate for Health and Development, based on Equity*, 2000 (Document 2000.2).

South – became the driving force behind the global discussion on the achievements of the decade, the challenges ahead and on ways to address these. The International Conference on Health Research for Development held in Bangkok in 2000 – a joint effort by COHRED, WHO, the Global Forum and the World Bank – was the culmination of these extensive regional and national efforts. The resulting action plan provided a framework for harmonizing and enhancing health research development efforts throughout the world, at both national and global levels, by focusing on the potential of health research systems to optimize the relevance and products of health research. Building on the principles of ENHR, COHRED has subsequently broadened its work to include the development and strengthening of effective national health research systems.

2. Reaching the Millennium Development Goals: the essential role of health research systems

Health care systems need robust health information if they are to understand and effectively address the health needs of populations, especially the poor and marginalized; to measure the costs and effects of interventions; and to assess and improve the performance and responsiveness of the system. Yet the use of health information for the management of health services at the local and district levels remains limited throughout the world. Very few countries in the South have developed effective, efficient and sustainable health information systems that take into account the needs of different levels of users at local, national and global levels. Much of the information collection and analysis done in the South is driven by vertical health programmes, often in the context of international initiatives, and integration with national information systems is seriously lacking.[56]

After several years of emphasizing global and condition-specific health programmes and health research, there is growing recognition that strengthening national health systems (including health research systems) is a key component to achieving the health-related MDGs. Although the MDGs do not specifically deal with health systems strengthening (a fact that has drawn extensive criticism) it is becoming increasingly clear that in many low- and middle-income countries, the health-related MDG targets will not be attained or sustained without significant efforts to strengthen their overall health systems. A major focus on tackling health system constraints will be central to achieving the MDGs and many other health goals.[57] According to the UNDP, the inefficiency of some vertical programmes, which are often not well integrated in the general health systems of countries, is one of the reasons why the health goals of the MDGs currently remain out of reach for millions of people.[58]

The building and strengthening of effective national health research systems in the South is a crucial contribution to achieving health and effective and efficient health care. Effective national health research management in the South can ensure the compilation and analysis of existing health information and the production of relevant new knowledge; improve the management, dissemination and utilization of existing knowledge to and by all potential users; help

[56] WHO. *The World Health Report 2003: Shaping the Future*, Geneva, 2003.
[57] Ibid.
[58] UNDP. *Human Development Report 2003, Millennium Development Goals: A compact among nations to end human poverty*. New York, Oxford University Press, 2003.

prioritize areas for investment of scarce health sector funding; improve equity in the allocation of health sector resources; make the health sector more accountable; and become a nucleus around which communities, researchers, health, and academic institutions can grow in a sustainable manner. Insert 9.15.1 highlights some of the reasons for using a systems approach to health research.

Because national health research systems form part of national health systems (they are not limited to health systems but can also be parts of other systems such as the education or science and technology systems), it is appropriate to define the functions of health research systems in analogy with the functions of health systems as follows:[59]

Financing including revenue collection, fund pooling and purchasing. In terms of health research systems, the function of financing implies at least two aspects:

- Mobilization of funds for health research using all the mechanisms that are open to countries, including allocations from regular national budgets, grants and donations from NGOs, transfers from donor agencies, loans, competitive and international research budgets, private-sector research resources and line-item contributions as part of vertical health and development programmes.
- Allocation of revenues to institutional or individual providers of research, as much as possible in line with health priorities for the country or population concerned, and the conduct of associated accounting, monitoring and evaluation.

Insert 9.15.1

Why use a systems approach to health research?

- In many countries, health research is not well coordinated and often fragmented, resulting in inefficiencies, gaps and duplications. A more systematic and managed approach to health research can help to address these problems.
- Certain research questions or needs of the health system require collaboration and linkages between different research organizations and different disciplines. A research system can enhance synergies, ensuring that the total effect of national health research is more than the sum of individual efforts alone.
- In many countries – both in the South and North - health research is inadequately linked to the priorities and goals of the health system. There is a need for a more systematic approach to aligning health research to health priorities and to health system goals to optimize the impact of the scarce health and development funding available
- Many outputs of health research are not adequately translated into health system change nor into desired health and equity outcomes. A national research system can develop a more systematic application of research to policy, planning and care delivery, and encourage a more systematic link between researchers and the users of research.
- To develop national research capacity that can tackle national needs and become sustainable, there needs to be a far more systematic approach to research capacity development and to mobilization of resources to support this – again an essential result of approaching health research for development as a system rather than in the form of individual programmes.
- A key outcome of health research for development has to be equity in health and health care access. Without a system to focus on equity, this cornerstone of development will remain largely ignored.

[59] Murray CJL and Frenk J. "A Framework for Assessing the Performance of Health Systems" in *Bulletin of the World Health Organization*, 78 (6), 2000.

Provision of services. In terms of the health research system, this function refers in the first place to the generation of information and knowledge, both new and existing. In addition, for such knowledge to become useful, it should be shared with other researchers and communicated to the many different stakeholders in a manner that is conducive to the use of research findings: it needs to be translated into policy and practice or absorbed into the existing knowledge/technology base. This requires structural arrangements for the relationships between researchers (individuals and institutions) and also between researchers, research users and research funders, political authorities and communities.

Resource generation including personnel, facilities and knowledge. The health research system must take on the production, maintenance, improvement and retention of individuals, institutions and infrastructure required for the production, utilization and management of health research. Although other functions of the health research system imply capacity development, this function in particular requires an explicit and direct focus on capacity development. The health research system has to ensure the generation of the resources or capacities of individuals, institutions and infrastructure to provide relevant, understandable and timely research of high quality to the relevant partners.

Stewardship (going beyond the conventional notion of regulation). For a health research system, 'stewardship' encompasses a range of activities intended to ensure that health research systems demonstrate leadership, are productive, have strategic direction and operate in a coherent manner. Stewardship (or governance) in the context of health research can be divided into a number of distinct sub-functions. These include: strategic vision, overall system design and policy formulation; priority setting; performance and impact assessment; promotion and advocacy; setting of norms, standards and ethical frameworks (sound practice) for the conduct of research; and networking.

3. COHRED's work

COHRED believes that a horizontal and systems approach to health research is essential for health systems development and is a key contributor to the development of better health for the poor and marginalized, both in the South and in the North. Therefore COHRED engages in any activity needed to enhance the performance of health research systems, especially of countries in the South. As an international NGO focusing specifically on health research systems building, it is led mainly by partners from the South with support from key partners from the North.

COHRED's vision

Attain a system of effective health research to improve health and development in all countries, based on the values of equity and social justice.

COHRED's mission

Work towards improving health and development by enhancing effective national health research systems, especially in developing countries (based on the ENHR strategy). This contributes to the development and strengthening of countries' capacity to manage research on priority health problems and utilize the results to improve the health of their populations.

(a) Main objectives

COHRED's objectives do not only reflect its concern with equity in health and health care access, and with the development of effective national health research systems, they also emphasize COHRED's role at the regional and global levels. Thus, COHRED advocates for a horizontal approach in international health

and health research initiatives, for an approach to international health research that strengthens national research systems, and for the consideration of national health research needs and priorities in global health and health research initiatives. The major objectives guiding COHRED's work are the following:

(i) Supporting the development and strengthening of effective and sustainable National Health Research Systems. COHRED partners countries in their continued efforts to characterize their national health research priorities and capacity, and in the development of strategies to increase the capacity of systems to be more effective and sustainable, and to reach more of their potential for improving health and equity. COHRED promotes exchanges of experience within and between countries while emphasizing South-South links and alliances. Special attention is paid to documenting and sharing experiences related to this objective through a communication process focusing on countries.

(ii) Working for equity in health and health research. COHRED strives to attain equity in health and in health research in the conviction that targeting equity is a crucial component of achieving optimal health and development. COHRED focuses on equity in health research systems and on promoting research on equity in health. The latter illustrates the organizational belief that any health research system, besides coordinating and facilitating health research, has a specific role to play in drawing attention to persisting inequities in health through stimulating research on these issues.

(iii) Amplifying the voice and participation of countries in the South in global health research. The Commission on Health Research for Development reported that 95% of global health research spending addresses conditions that affect only 5% of the world's population. One of COHRED's tasks is to assist in reducing this health research inequity by providing a platform for health research in the South to help define solutions and advocate for these at global level.

(iv) Strengthening cooperation at global and regional levels for health research systems development. Establishing appropriate channels, operating principles and mechanisms for global and regional cooperation is critical to the development of health research in developing countries. COHRED builds on existing partnerships at regional and global level to support the strengthening of health research systems in countries in greatest need. Africa, Asia and Latin America all have nascent supra-national research forums to enhance inter-country cooperation and southern alliances. COHRED has been instrumental in their conception and remains a partner in their development.

(b) Key strategies to achieve the objectives

(i) Networking and partnership building. At the national level, COHRED promotes the conduct of "country consultations" as an instrument to assess health research systems in and by countries; to raise awareness and create commitment among relevant actors, including researchers, policy-makers, health care providers, representatives of communities and the media; and to jointly develop plans of action for strengthening health research at national and sub-national levels. Experience shows that such consultative processes greatly facilitate further collaboration between the interested parties in countries and ensure broad-based ownership of the processes and activities involved.

In addition to networking at national level, COHRED supports networking at sub-regional and regional levels. The principle of subsidiarity is applied – ensuring that

(sub)regional groups only undertake those activities that cannot be carried out effectively at country or institutional level. The Asian and African ENHR networks were good examples of this. Over recent years, these networks have evolved into the Asian and Pacific Forum for Health Research and the African Forum for Health Research respectively. Certain geographical and other realities may justify supporting sub-regional networks such as networks in francophone West Africa and in the Central Asian Republics. Barriers to accessing the anglophone research world and the absence of a joint health research history make a specific emphasis on networking among these groups of countries a worthwhile investment.

At international level, the Geneva-based COHRED Secretariat has developed partnerships with many other relevant health and health research organizations including WHO (both through its headquarters and regional offices), the INCLEN Trust, the Global Forum and its Alliance for Health Policy and Systems Research. The COHRED Board, the organization's policy-making body which is mostly constituted of members from the South, is instrumental in developing and maintaining these partnerships, especially with regional partners.

(ii) Analysis, communication and advocacy. To support and inform its work at country level, COHRED uses two main strategies. Firstly, the establishment of working groups on key issues of relevance to health research development. Working groups have been dealing with issues such as priority setting in health research; community participation in health research; linking research to action and policy-making; advocacy for priority health research; coordination of health research; monitoring of financial flows for health research; national health research system development; and monitoring and performance assessment of national health research systems.

Secondly, the outcomes of the working groups have resulted in the publication of a large number of tools and documents (see COHRED's website: www.cohred.ch). These publications are widely disseminated in print or electronically. COHRED's communication, information and advocacy activities are key to its work. It is through these activities that partners in the South will be enabled to assess and build their own health research systems, to advocate for increasing the evidence-base for decision-making in the health sector, and for modifying international and global health research to better suit the needs and priorities of the South.

(c) Key activities and achievements

Through the ENHR strategy and the mobilization and support of country and regional networks, COHRED has contributed substantially to the building of health research systems in the South. Ten years after COHRED's inception, ENHR remains an important strategy to assist countries in optimizing the benefits from investments in health research. From just a handful of countries in 1993, ENHR has spread around the globe. Over the years, over 50 countries (Insert 9.15.2) have embraced the strategy and used it towards strengthening their own health systems and in defining health research priorities. In some countries, ENHR has been formalized through legislation, while in other country programmes and networks the underlying principles of ENHR have been applied without explicit reference to the strategy.

Furthermore, by providing a platform for countries and regions to voice their needs, concerns and ideas in international fora, COHRED has helped to promote equity in health research.

These last two strategies have in recent years led to the establishment of an increasing number of national health research fora (e.g. in Ecuador, Tanzania and the Philippines).

In addition, communication support is provided in the form of assistance in preparing publications, technical reports and learning materials. Advocacy for the ENHR approach has resulted in growing interest and commitment, ranging from explicit inclusion of ENHR in national health plans to the establishment of regional networks for inter-country cooperation.

To illustrate in more detail some of COHRED's recent work and the remaining challenges it faces, two major activities are highlighted below:

(i) National Health Research System development

The past decade of operations has involved working with a wide range of countries in describing and analysing their health research systems and in developing strategies to strengthen these. This has involved a wide range of different interventions. For instance, through a working group on national health research systems development, teams from Brazil, Cuba, Indonesia, Philippines, South Africa, Tanzania and Thailand have analysed their research systems and developed plans for their future development. COHRED provided both technical and financial support to these country teams. As the following examples show, this has led to some interesting developments.

- Decentralizing priority-setting in Cuba

Despite its centralized system, Cuba focused on involving all levels (municipal, provincial and national) in a discussion on the needs and priorities for further developing its health system through research. As a result, new priorities were identified, leading to the reformulation of ministerial (i.e. national and provincial) research programmes. A call for proposals was published, promoting inter-institutional cooperation and emphasizing the utilization aspects of research.[60]

- Adjusting the research agenda to health priorities in Brazil

Brazil has an impressive health research sector which is characterized by substantial human resources, reasonable infrastructure and high level of public funding, making it independent from external funding. However, it is facing the health problems of both developing and developed countries. In addition, it needs to find a balance between contributing to the advancement of global knowledge and adjusting the research agenda to the health priorities of the country. This led the Brazilian Ministry of Health to focus on developing a health research policy which includes the establishment of a priority research agenda aimed at better targeting the available resources but also contributing towards the growth of these resources.[61]

- Coordinating the health research effort in the Philippines

The analysis of the Philippine health research system illustrated the difficulties in coordinating all interested parties in the Philippines. In this case, the Ministry of Health and the Philippine Council for Health Research and Development both supported health research initiatives. However, there was no clear coordination between them and, as a result, duplications occurred. This analysis

[60] Martinez Torres E and Alvarez Blanco AS. *Technical report of the research project: Cuban national co-ordinated actions for improving efficiency in the NHRS* (Unpublished document (2003) available from COHRED, 11 Rue de Cornavin, 1201 Geneva, Switzerland).

[61] Guimarães R . "Directing Brazil's Health Research Resources towards Health Priorities" in *Research into Action*, COHRED Newsletter, Issue 33, 2003.

led to a commitment by key stakeholders to rectify this problem and establish a Philippine Health Research Forum which would provide a platform for exchange and coordination.[62]

One of the main benefits for all country teams participating in these projects was the opportunity for exchanging experiences. Despite obvious variations in national health research systems, certain common difficulties (e.g. dependency on external resources to conduct national health research) and opportunities (e.g. mechanisms for the coordination of the wide range of actors in health research, better utilization of existing and new knowledge for policy change) are shared by many countries.

(ii) Defining national health research agendas: opportunities and challenges

In addition to overall assessments of health research systems, COHRED also works with country teams on specific aspects of their health research system. These have generally been identified as high priority areas by national partners. Over the past few years the main focus has been on priority setting and monitoring financial flows for health research within countries. COHRED specifically focused on the strengthening of capacities to carry out this type of work.

Defining health research priorities is crucial for any health research system as it will help:

- focus scarce resources on research that will optimize health benefits and increase health equity;
- identify the human and financial resources for health research in the face of competing and overwhelming demands;
- strengthen the link between research, action and policy, so that health policy and related actions are firmly based on the best available scientific evidence.[63]

An increasing number of countries are defining their health research priorities to structure and coordinate their research efforts.[64] However, for these national priorities to be implemented, the global health research community needs to build on these priorities and use them to inform regional and global health research agendas.[65] By developing a well defined health research agenda, countries can be empowered when negotiating with international development agencies and research institutions. A challenge for the international community is to be responsive to these national needs. Other lessons learned from COHRED's work in priority setting and outstanding challenges include:

- *Priority setting as a country-specific activity:* Although there are certain general lessons to be learned from country experiences and issues to be addressed in any priority setting initiative, each country has to define its own way of setting health research priorities, and to adapt the tools for priority setting in a way that is acceptable and appropriate to its own culture, health system and health problems.
- *Priority setting as an evidence-based activity:* Lack of data and the poor quality of available information, particularly regarding the health system and the health research system, represent serious obstacles to evidence-based priority setting, leading to problems of reliability, credibility, and accountability.
- *Priority setting as a multi-stakeholder activity:*

[62] For more information on the Philippines Health Research Forum see: http://www.pchrd.dost.gov.ph/healthforum2003/
[63] COHRED. *Health Research Priority Setting: Lessons Learned*. Learning Brief 2002.6, 2002.
[64] See COHRED website for information on specific countries (http://www.cohred.ch).
[65] COHRED Working Group on Priority Setting. "Priority Setting for Health Research: Lessons from Developing Countries" in *Health Policy and Planning* 15 (2): 130-136, 2000.

Despite a growing consensus that science and research in general and health research in particular are owned by societies as a whole, and therefore a growing consensus about the necessity of involving many different stakeholders in the priority-setting process, 'community involvement' remains an often unresolved issue. Future priority-setting initiatives should make more explicit efforts to experiment with and document this aspect of the process.

- *Priority setting as a value-driven activity:* The ultimate goal of any health research priority-setting activity is to define an investment portfolio of health research and development with the greatest possible impact on the health of the majority of the population, in particular its poorer sections. While equity is included in most lists of possible criteria for priority setting, it is certainly not used effectively. Operationalizing equity as a criterion for priority setting deserves urgent attention and action.

To increase the usefulness of a priority-setting process, adequate knowledge on available human, logistical and financial resources is essential. By describing and monitoring national financing systems for health research, their adequacy in addressing country needs and priorities can be assessed. If conducted on a regular basis and if directly linked to priority-setting processes, resource flow data can be a powerful tool for advocacy at national and international levels. COHRED has therefore supported the development of a methodology for monitoring resource flows at national level[66] and has trained and supported researchers to conduct this work in their own countries (see chapter 5).

4. The way forward

COHRED's future work will build on the key approaches, successes and lessons learnt in its first decade of work and will include:

- supporting countries in prioritizing and managing their own national health research for optimal impact on health, specifically of poor individuals, groups, and countries as a whole;
- providing countries with tools to implement ENHR, measure resource flows, communicate results and involve communities;
- defining health research not simply as a technical, compartmentalized activity, but as an essential aspect of social development that involves all stakeholders: not only researchers (i.e. from health, social and development sciences) and research funders, but also consumers, patients, community groups, politicians, academics and many others;
- defining the results of health research not as the end-points of studies but as the measured impact on health status, on health care access, on quality of health care, on equity in national and international health and, ultimately, on development.

In the future, increasing priority will be given to a number of new challenges faced by the national and global health research communities, such as:

- Key under-researched conditions and situations that are of great relevance to countries and to the South in general but that are of no political or financial interest to the major research funders in the North;
- Interaction of environment, health and development, as it is progressively becoming clearer that the people in the South will bear the brunt of global

[66] Alano BP and Almario ES. *Tracking Country Resource Flows for Health Research and Development (R&D). A comparative report on Malaysia, the Philippines and Thailand with a manual on tracking country resource flows for health research and development*, Philippines Center for Economic Policy Research, 2000.

environmental damage while having the least research and other means available to modify its impact.
- Ethics of health research, not only in terms of the ethics of research studies and programmes, but also of the social justice, prioritization, ownership and benefit distribution aspects of local and international health and medical research.
- Promoting all aspects of research capacity assessments and development and selecting key partners to effect these. This will also include attempts to engage in public-private partnerships.
- Helping define and make the concept of national health research systems useful in practice in order to optimize investments in health.
- Strengthening the capacity of the South to have a more substantial influence on the global and international research agenda and on its implementation, including taking progressively more responsibility for funding and controlling research priorities in the South and its coordination and sustainability.
- Identifying new key partners in both the South and North to implement COHRED's goals.
- Lastly, research in a number of low-income countries largely depends on external funding. Two key challenges for the coming years are: (i) conceptualising health research in the South as a key contributor to economic growth and development and to retention of highly skilled personnel, thus motivating more internal funding for health research; and (ii) increasing the overall funding available for health research in the South by accessing vertical and condition-specific intervention programme funding and international private and competitive research funding.

With the World Summit on Health Research in Mexico in November 2004, another key opportunity has been created for the global health research community to obtain high level political commitment for a common cause: the need for more and more relevant health research that can be used as a powerful advocate for health and development, if based on the principle of equity.

Building on its experience and its network, COHRED will continue working towards this cause. The current discussions around the role of health systems to reach the health-related MDGs form an important opportunity to raise the awareness of the need for relevant evidence to inform health systems in their decision-making. Transforming awareness into real action will remain a challenge.

Section 16

Initiative on Public-Private Partnerships for Health[67]

1. History of the initiative

(a) Central problem

The poor in developing countries are disproportionately affected by global diseases such as HIV/AIDS, TB and pneumonia, as well as tropical diseases such as malaria, sleeping sickness or river blindness.

While interventions exist to prevent or treat some of these diseases which account for the rich-poor differences in health status – either in the form of inexpensive off-patent medicines or new products – these products are not reaching those who need them. Strategies and infrastructure for appropriate delivery of existing products and health services has often been neglected in poor countries. WHO estimates that over half of the population in many poorer countries still have no access to the most basic essential medicines.

In other cases, there is a need to develop new products: ones to replace those whose effectiveness is threatened by resistance to drugs or insecticides, or ones better suited to developing country settings. Unfortunately, developing products for poor populations is commercially unattractive.

Reducing health disparities will require the capacities of both the public and private sectors, working collaboratively to:

- develop new drugs, vaccines or other health products to control these neglected diseases or conditions;
- devise and implement strategies that ensure the accessibility of poor populations to existing and new products and services;
- create environments conducive to product quality, appropriate use, sustainability and commercial viability, both nationally and globally;
- establish health as a central strategy for poverty alleviation and mobilize more resources for improving health.

While neither the public nor the private sector alone can eliminate health inequities, focused partnerships involving both sectors have the potential to contribute to their reduction. The potential of targeted, new approaches to solve hitherto intractable problems led to a marked increase in partnerships in general, in response to urgent needs. This in turn led to concerns about a number of key issues including:

- the relationship between targeted interventions and broader capacity strengthening efforts;
- the lack of communication (i) between the many new initiatives themselves and (ii) with the traditional players in international health;
- "partnership fatigue" arising from the need to engage with, and possibly fund, a much larger number of partnerships.

Against this background, the Initiative on Public-Private Partnerships for Health (IPPPH) was launched in 2000 to look at ways to optimize the benefits and minimize the

[67] Adapted from a text contributed by the Secretariat of the Initiative on Public-Private Partnerships for Health.

potential negative consequences of public-private collaboration for health.

(b) Creation of the initiative

IPPPH grew out of early efforts by the Global Forum to support and foster public-private collaboration to address the 10/90 gap by focusing on some high-burden diseases (e.g. partnerships such as MMV and IAVI) and also out of recognition by the Global Forum and the Rockefeller Foundation of the need for a more systematic response to catalysing effective public-private collaboration. Based in Geneva, the IPPPH Secretariat currently operates under the aegis of the Global Forum.

(c) Central objective

The mission of IPPPH is to increase the effectiveness of public-private collaboration, particularly by helping those seeking to develop health products or to improve access to such products needed to fight neglected diseases and other health problems in developing countries.

(d) Main strategies

To achieve its mission, IPPPH supports public-private partnerships through the following strategies selected in consultation with them:

- *Information services:* making available relevant and up-to-date information on individual partnerships (currently highly fragmented and dispersed) and their operational experiences to date.
- *Research and analysis:* providing health alliances with pragmatic answers to specific challenges they face, to identify practices which maximize health returns on funds invested, and to minimize the potential risks associated with such alliances.
- *Communication and networking:* organizing the exchange of acquired knowledge and experience among partnerships and their supporters; promoting understanding between the public, private for-profit and private not-for-profit sectors; and encouraging the participation in collaborations of all potential contributors, including industry, public agencies and civil society.
- *Advisory services:* providing expertise and guidance on the formation of new public-private partnerships or improving the effectiveness of existing partnerships in areas including: organizational structure, governance mechanisms, sectoral characteristics and motivations, partner selection (involving referrals or linkages, where requested), phased development, operational features and financing options.

(e) Partners

Created in 2000, IPPPH is sponsored by the Bill & Melinda Gates Foundation, the Global Forum for Health Research, the Rockefeller Foundation, DFID (UK) and the World Bank. It works actively with a large number of public-private partnerships. For a full list of public-private partnerships in the field of health and health research, searchable by purpose, disease, partner, funding, etc., see the partnership database on website www.ippph.org.

(f) Organization

The initiative's Advisory Board is composed of up to 20 members selected in their individual capacities from a range of constituencies: public health policy, multilateral institutions, research institutions, health sector industry, NGOs and foundations. The purpose of the Advisory Board is to guide the IPPPH Secretariat in establishing its strategic direction and implementing its activities. The Advisory Board functions under the legal umbrella of the Foundation Council of the Global Forum.

(g) Annual budget and sources of financing

In 2003, IPPPH expenditure was slightly over US$ 1 million. In 2004, it may reach US$ 1.5 million (including designated support) in order to achieve the desired level of services to the public-private partnerships which are the clients of IPPPH.

2. Main achievements in 2002-2003

Major activities conducted in 2002-2003 include the following:

(a) Information services

- Expansion of the IPPPH Partnerships Database, which provides a single source of searchable information on about 90 health collaborations so far.
- Publication of a study by Sibongile Pefile: *Public-Private Partnerships for Access to Drugs for HIV/AIDS: Documenting the Early History of the Diflucan® Partnership Program and the Viramune® Donations Program.*

(b) Research and analysis

(i) Operational issues for public-private partnerships, including strategies for meeting challenges shared by partnerships engaged in product development or improving access to products

- Publication of a DFID-funded study: *Impact of Public-Private Partnerships Addressing Access to Pharmaceuticals in Low-Income Countries – Uganda Pilot Study*. This study in Uganda involved an assessment of the health and health systems impact of public-private partnerships for improving access to pharmaceuticals in relation to leprosy, lymphatic filariasis, onchocerciasis, sleeping sickness and HIV/AIDS. The aim was to examine issues of ownership, integration, coordination, implementation and impact, with a particular focus on the unique strengths and problems of these access PPPs compared with other programmes in which drugs are competitively procured.
- Another publication, *Valuing Industry Contributions to Public-Private Partnerships for Health Product Development* by Hannah Kettler, issued in May 2003, provides information on the contributions that private industry makes in pursuit of products to combat diseases of poverty prevalent in the developing world including HIV/AIDS, TB, malaria and Chagas disease.

(ii) Guidance on best practices in the development and management of effective partnerships for health

- A joint workshop was held with INSEAD Business School in Paris in June 2003 on *Partnerships for Developing World Health: Decision and Management Issues for Pharmaceutical Companies*. The report is available on request.

(c) Communications and networking

(i) Communication

- Development of a new website including an expanded Partnerships Database, an online library of publications related to public-private collaboration and global health, relevant news updated daily and the Counterparts Network, a password-protected area where members can share information, questions and lessons with regard to their work.

- Development of *News Digest*, an electronic newsletter on neglected diseases and particularly items related to public-private collaboration to increase their impact.
- Publication of a report from a meeting in Arusha, Tanzania, in November 2002 on *Public-Private Partnerships Addressing Access to Pharmaceuticals: Lessons from Field Implementation in Selected Countries*. The report is available on request.

(ii) Networking

- Networking meeting: *Liability and Other Legal Issues for Organizations Engaged in Product Development through Public-Private Collaboration*, organized by IPPPH and hosted by the Rockefeller Foundation in New York (April 2003). The report is available on request.
- Preparation for Counterpart Networks to be hosted via IPPPH website.

(iii) Advisory services

- The number of requests for consultation continues to rise from various groups, including PPPs, donors, industry and management consulting companies.

3. Expected outputs for 2004

The planned activities for 2004 can be summarized as follows:

(a) Information services

- In 2004, IPPPH will continue its systematic effort to compile and compare approaches and experiences in public-private partnerships, and provide the information in the Partnerships Database. It will also document specific new partnerships to capture their early history and lessons, e.g. Coartem, Technology transfer for Multidrug-Resistant TB (MDRTB) Drugs, Foundation for Innovative New Diagnostics (FIND) and the Global Alliance for Improved Nutrition (GAIN).
- IPPPH will continue to expand its collection of materials on PPPs and related topics including 'grey literature', internal and external evaluations, books and articles. Key materials will also be made available on the website.
- It will also provide customized responses to major client groups such as partnerships, funders and participants in partnerships.

(b) Research and analysis

(i) Developments and trends in the field of public-private collaboration

- Publication of a first major overview of public-private collaborations addressing developing country health problems: *Public-Private Partnerships Addressing Global Health Inequities: Towards Better Understanding and Defining their Contributions*.
- Background papers for a networking meeting on the financing of product development partnerships: *Combating Health Problems Associated with Poverty: Financing Strategies for Product Development and the Potential Role of Public-Private Partnerships*.

(ii) Organizational issues for public-private partnerships, particularly in the areas of legal status, governance and mechanisms for balanced representation of stakeholders

- Background papers for a networking meeting on optimizing governing boards: *Optimizing of the Role of Governing Boards in Operations of Partnerships for Health*.
- Analysis of the composition of governing boards in relation to the goals, role, responsibilities and accountability of public-private partnerships.

(iii) Operational issues for public-private partnerships, including strategies for meeting challenges shared by partnerships engaged in product development or improving access to products

- Paper commissioned on intellectual property management to ensure access to new products for poor populations, in preparation of a networking meeting.
- Completion of papers on 'Planning Production' and 'Product Pricing'.

- Development of studies on health and health systems impact of PPPs addressing access in three additional countries (Sri Lanka, Zambia and Botswana), similar to the DFID-funded study in Uganda. A report will be published in 2004.

(iv) Guidance on best practices in the development and management of effective partnerships for health

- Revision and expansion of the current IPPPH *Guidelines on Establishment and Operations of Public-Private Partnerships for Health* to include experience accumulated in recent workshops and studies. Guidelines would include specific recommendations for product development, product access, global coordination and other categories of partnership.
- Development of guidelines on best practices for major pharmaceutical companies: discussions with major pharmaceutical companies on terms of reference, feasibility, necessary participants and funding requirements for consensus development on what types of pharmaceutical company action on developing country health problems represent the best 'value' from a public health development perspective.

(c) Communications and networking

(i) Communications

- Continue and expand Internet-based communications activities:
  - Breaking News service on the website.
  - *News Digest*, electronically delivered to around 1300 recipients.

- Publication and/or dissemination of a number of IPPPH documents will be completed during 2004 including various reports and background papers from meetings as well as research projects (see above).

(ii) Networking

- Extend the Counterparts Network facility under the IPPPH website to include new groups, including PPP Chief Scientific Officers and Finance/Accounting Managers.
- A major meeting will take place in London in April 2004 entitled 'Combating Health Problems Associated with Poverty: Financing Strategies for Product Development and the Potential Role of Public-Private Partnerships'. The meeting is planned with the Rockefeller Foundation, Bill and Melinda Gates Foundation, Wellcome Trust, World Bank, WHO and DFID. A Follow-up Monitoring Group will be established from among key participants to continue discussions and develop conclusions and recommendations to be delivered after one year of follow-up activities.
- A working retreat is planned for May 2004 on 'Optimizing the Role of Governing Boards in PPP Operations'. The event will bring together chief executive officers and chairs of governing boards from the major, legally independent product-development partnerships. A Follow-up Monitoring Group will be established from among key participants to continue discussions and develop conclusions and recommendations to be delivered after one year of follow-up activities.
- Subject to availability of resources, a further networking workshop may be convened on the topic 'Intellectual Property Management for Ensuring Access to New Products for Poor Populations'.

(d) Advisory services

Continue to provide consultation and support to various groups on request, including new and established partnerships, funders in particular bilateral agencies and foundations, and potential participants in collaborations, including industry.

The technical support given by COHRED to countries in the process of health research system capacity building includes a variety of country-level strategies such as:

- setting priorities for national health research (processes supported in over 30 countries; the COHRED website provides country reports of this work);
- engaging communities in setting national research agendas;
- building capacity for health research management – through workshops and the provision of tools and manuals, but also through providing support for developing capacity development strategies;
- monitoring resource flows for health research (supported studies in 10 countries);
- monitoring and evaluation of national health research systems through: (i) support of studies to define national health research profiles (in over 10 countries); (ii) national consultations (i.e. the consultations prior to the International Conference on Health Research for Development in 2000 in which over 60 country teams participated); and (iii) the development and dissemination of tools;
- supporting networking and coalition building;
- strengthening coordination of health research.

Insert 9.15.2

COHRED's work with countries

Since 1993, COHRED has worked with the following countries in strengthening national capacities to attain effective health research systems:

Africa
Benin, Burkina Faso, Burundi, Cameroon, Egypt, Ethiopia, Ghana, Guinea, Ivory Coast, Kenya, Malawi, Mali, Mauritius, Mozambique, Nigeria, Senegal, South Africa, Sudan, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe

Asia and Pacific
Bangladesh, Cambodia, China, India, Indonesia, Iran, Lao PDR, Malaysia, Myanmar, Nepal, Pacific Islands (i.e. Fiji, Vanuatu), Pakistan, Philippines, Thailand, Vietnam

Caribbean and Latin America
Barbados, Brazil, Chile, Colombia, Cuba, Ecuador, Jamaica, Mexico, Netherlands Antilles, Nicaragua, Trinidad and Tobago

Eastern Europe and Central Asia
Azerbaijan, Hungary, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan