Vaccination Week in the Americas reaches populations with otherwise limited access to regular health services and at heightened risk of contracting vaccine-preventable diseases

The global health challenge

Achieving the ultimate goal of health for all requires equitable health systems, clear and coordinated spending policies and effective global health governance

By Mirta Roses Periago, regional director, Pan American Health Organization/World Health Organization

The 2010 meetings of the G8 and G20 present world leaders with a renewed opportunity to pursue a coordinated agenda of social and economic policies that place countries on a path to universal and equitable healthcare. Rising inequalities are increasingly affecting both developing and developed countries undermining prospects for sustainable growth and social stability. No country or region, regardless of size, level of development or geographical location, can face these challenges in isolation. The ever more visible characteristics of globalisation have blurred the boundaries between local and global, individual and collective issues.

Health profiles have shifted due to demographic, epidemiologic and technological changes, requiring care and services over a much longer lifespan. The results are higher costs of health services and more healthcare expenditures. These changes co-exist with a historically accrued social debt in access to timely and quality healthcare services and to conditions essential for hygienic and decent living.

In the lower and middle income countries of Latin America and the Caribbean, the main economic and fiscal impact comes from preventable chronic diseases, the health consequences of injuries and violence, and mental health problems, including substance and alcohol abuse. These problems contribute significantly to poverty throughout the region.

Globally, 33 million people have HIV, and almost 300 million people have diabetes and will suffer disability, high-cost treatments and premature death. More than 1 billion men, women and children are overweight or obese. While 1.7 million people die each year from tuberculosis, deaths related to tobacco use account for more than 5 million each year – expected to rise to 6.5 million per year by 2015.

The global community has already experienced the rapid spread of communicable diseases linked to globalisation such as the influenza virus H1N1, severe acute respiratory syndrome (SARS), avian influenza and multi-drug-resistant tuberculosis. A higher frequency of devastating natural phenomena related to climate change further illustrates the challenges confronting the stability of healthcare systems and communities.

These staggering statistics confirm the predicament of public healthcare systems as they still cope with innumerable communicable diseases that disproportionally affects the most vulnerable – mothers and children, the elderly, the disabled and indigenous populations.

A social and economic compact

As the leading forum for international economic cooperation, the G20 has focused on improved coordination and resilience of the world's financial and economic systems. For more than a decade, the global health community has welcomed the G8's sustained attention to global health issues. The pledge for shared responsibility and collaborative efforts by the world's leading economies has accelerated efforts in HIV/AIDS, tuberculosis, malaria and neglected tropical diseases. G8 leaders recently embraced the role of comprehensive approaches to address the strengthening of health systems including social health protection, while acknowledging the need for more widely accessible sexual and reproductive health services.

> "Globally, 33 million people have HIV, and almost 300 million people have diabetes and will suffer disability"

In a globalised world, harmonising policy orientations on global health at the G8 summits with those on financial and economic issues before the G20 is a matter of urgent concern. Bridging the agendas of the G20 and G8 for improved coordination and resilience in social sectors can finally allow societies to address entrenched health disparities. The Commission on Social Determinants of Health of the World Health Organization (WHO) found that economic growth without appropriate social policies that strive for fairness in distributing benefits will bring little benefit to health equity. This, in turn, will negatively affect the world's stability and security, generating further economic losses. It becomes a vicious cycle.

In the Americas – the most inequitable region in the world – out-of-pocket financing of healthcare costs is increasingly becoming the norm rather than the exception. These expenditures represent a higher proportion of the total income of poor families, mostly for medications, causing impoverishment for families, particularly when chronic or life-threatening diseases turn into a catastrophic situation.

Disparities hide behind averages and national aggregates. To fight inequity we need to expose it.

Preparing the H1N1 vaccine: communicable diseases linked to globalisation, such as influenza H1N1, are spreading across the world

Inadequate and insufficient data that can reveal financial and geographic differences among population groups remain a challenge.

The commitment of the G8 and G20 leaders to developing and coordinating pro-equity policies across sectors in a highly interdependent world is most welcome. The stakes are high: success will empower countries to tackle the structural conditions that shape health inequities. The ministers of the members of the Organisation for Economic Co-operation and Development (OECD) understood the risk of reversing positive development outcomes and the real potential of social-political crisis. In 2008 they stated that successful poverty reduction requires mutually supportive policies across a wide range of economic, social and environmental issues. They called for a vigorous agenda that promotes policy coherence for development in both member countries and partner countries.

The financial and economic crisis has shown the need for global and national collective action on several key public policies that will cast a protective safety net on vulnerable groups already in a desperate situation. An additional 100 million people worldwide have been thrown into poverty, reversing hard-fought gains. The crisis will slow down efforts in solving today's global health challenges. The Pan American Health Organization (PAHO) and the WHO have approached the crisis as an opportunity to design more inclusive and equitable health systems for more just societies.

Canada's announcement of maternal and children's health as a priority theme at the 2010 G8 Muskoka Summit has energised the global health community. Each year more than half a million women die in pregnancy. Nearly nine million children die before their fifth birthday. Today, with only five years left to reach the Millennium Development Goals (MDGs), it appears the target of reducing the number of pregnancy-related deaths by 75 per cent might not be met. Canada is committed to increasing global spending and to raising additional resources from G8 governments, non-governmental organisations (NGOs) and foundations to ensure the goal is achieved.

Simple and affordable solutions have been targeted. These include training healthcare workers, vaccination, improved nutrition and clean water. These measures will bring progress. Canada's call to action represents an opportunity for G8 leaders to advocate a rights-based approach to address the underlying causes of maternal mortality, such as gender inequities, education and empowerment, favouring coherent multi-sectoral responses.

The MDGs are a clear example of the need to optimise the links across sectors and to press for systematic policy coordination among developed and developing countries. The slow pace in meeting the MDGs shows how the structural forces of exclusion and disparities can be formidable adversaries to progress. A great deal of responsibility has been placed on the leaders of developed and developing countries to steer the powerful economic and business forces to shape successful global and national public polices.

This responsibility must also be shouldered by the international community as a whole. Global health is receiving unprecedented attention. Development assistance for health to low-income and middle-income countries increased from $5.6 billion in 1990 to $21.8 billion in 2007. These resources come from a far greater number of organisations in both the public and private sectors. Regrettably, more often than not they generate their own funding mechanisms and development schemes, placing a heavy burden on the governance structure of global health and the implementation capacities of countries.

Equitable and universal healthcare systems

A healthcare system can be a powerful driver of inequities.

TBVI

TuBerculosis Vaccine Initiative

New vaccines urgently needed to move to a TB free world

Every second someone worldwide is infected with the bacterium that causes tuberculosis (TB) and at risk of developing the disease. Every year almost 2 million people die of TB, equaling one death every 18 seconds. Although poverty-related and mostly affecting developing countries (Africa and Asia), tuberculosis is prevalent in all continents.

Multidrug resistant (MDR) and extensively drug resistant (XDR) TB are on the rise and also threatening developed countries. TB is a leading killer among people living with HIV. The situation is turning serious in Europe, is alarming in Africa and extremely worrisome in Russia, China and India.The burden of the disease, affecting economies worldwide, is estimated at hundreds of billions of dollars annually.

Studies show that without new vaccines TB can never be eliminated. BCG, the only available TB vaccine, is insufficient in its ability to protect adolescents and adults from pulmonary (lung) TB – the most common form of TB. TuBerculosis Vaccine Initiative (TBVI), an independent nonprofit organization, strongly encourages research and discovery and pushes forward their translation into new, effective and safe vaccines that are globally accessible and affordable.

TBVI aims to reach these objectives through financial and practical support to an integrated pan-European network of more than 40 of the best universities, institutes and industries. TBVI's outstanding track record shows that the urgently needed vaccines can be developed. If, collectively, we can leverage the resources of public, private, academic and philanthropic sectors, we can successfully eliminate TB.

www.tbvi.eu

Access to healthcare is greatly influenced by factors that include gender, education, occupation, income, ethnicity and place of residence. How a health system is organised influences health outcomes. Steering health systems to guarantee universal and equitable access of healthcare, in particular for those in greatest need, is the unquestionable responsibility of the health sector.

Insufficient and inadequate distribution of public spending on health is challenging the pursuit of universal healthcare. Most countries fail to reach the levels of public spending on health needed to achieve universal access to healthcare services (6 per cent of gross domestic product. Those countries that do spend enough on health face problems in ensuring that these resources are adequately distributed and produce the highest possible level of health for every dollar spent. Effective regulatory mechanisms are still required to direct public spending on health to the most disadvantaged groups in society.

The interest in defining a well-functioning health system has grown in recent years. A health systems agenda is being adopted by a wide number of actors in global health, including foundations, leading international financial institutions and NGOs. The 2008 G8 Hokkaido-Toyako Summit recognised the critical role of health systems in achieving health outcomes.

A country's historical, political, epidemiological and socioeconomic context ought to shape the appropriate configuration of its health system. The policy mix guiding a health system's structure and operations, however, ultimately influences its likely contributions to equity, solidarity and universality. This is the purpose of the primary healthcare approach promoted by PAHO/WHO. Evidence continues to show that a health system oriented toward primary healthcare is the best approach for producing sustained and equitable improvements in the health of populations. It provides a stronger sense of direction, favouring a whole-of-government approach to health.

Four reforms to refocus health systems toward health for all and reduce exclusion and social disparities were brought forward in the WHO's *2008 World Health Report: Primary Health Care – Now More Than Ever*. These address universal coverage, people-centred care, leadership and healthy public policies across sectors.

> "Progress in reaching health outcomes is tied to effective cross-sector policy coordination"

The evolving role of PAHO and the WHO

The changing landscape is placing constant demands to revisit the international community's role in global health. Increasingly, progress in reaching health outcomes is tied to effective cross-sector policy coordination. Mixed health systems are becoming the norm. They require careful steering and a wide network of relationships among those that influence and inform national and global health policy.

The recent prominence given to national health planning is a step in the right direction. This policy orientation goes hand-in-hand with the mandate of PAHO/WHO to build and strengthen national capacities in the health sector. Much work remains in bringing countries up to speed in designing their own strategies and priorities. Support is coming from new sources, with a larger input from countries in the developing world. Opportunities for solidarity and cooperation are already taking place among the six WHO regions. They are likely to expand.

Perhaps the greatest test to the effectiveness of the international health community remains solving the complex structure of global health governance. Deliberations continue on the possible design of new international public policy frameworks that reflect the participation of multiple actors in a basically borderless world. The WHO's International Health Regulations and the Framework Convention on Tobacco Control represent two legal instruments than can show the way in complex interactions across policy areas. They constitute a globally accepted set of rules for protecting people's health and moving the world forward to achieving the ultimate goal of health for all. ◆

Nutrition counselling at a primary health centre, India. An emphasis on primary healthcare seems to provide sustained improvement in the health of a population

End the neglect – MDGs and tropical diseases

There are 13 parasitic and bacterial infections that affect over 1 billion of the world's poorest people. They are most prevalent in remote rural areas, urban slums and conflict zones. Some of them kill, others cause severe physical impairment. Many particularly affect women and children. They reduce income, limit access to education and cause social stigma and exclusion. They are diseases of poverty that constrain development and the achievement of the Millennium Development Goals (MDGs). They are known as the Neglected Tropical Diseases (NTDs).

Strategies for controlling them are deliverable, tested, cost-effective and hold a strong track record of success. For example, the Community-Directed Treatment approach has led to nearly 60 million Africans being treated for onchocerciasis (river blindness), significantly advancing the elimination of this disease.

Over the last few years, responses to some of these diseases have been combined and more strongly integrated within health systems, further improving the numbers of people treated or protected.

Yet, despite the clear need and an effective combination of proven approaches and established partnerships, the NTDs receive a fraction of the development expenditure made on health and are not explicitly recognised within the MDGs.

This year provides a unique opportunity. The G8 in 2009 stated that "we will work to support the control and elimination of (these) diseases". At the UN MDG Summit in 2010, G8 members can ensure at-risk populations receive the highly cost-effective support and attention they need, through:

- Explicitly incorporating the NTDs in Goal 6 by including indicators on prevalence, incidence and numbers of people treated for these diseases in Target 6c
- Ensuring that support for improved water and sanitation under Goal 7 is linked to NTD programmes as water and sanitation play a key role in, for example, trachoma and schistosomiasis
- Ensuring continued support to NTD drug administration in line with Goal 8, Target 4: In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries.

A billion thanks…

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The research-based pharmaceutical industry is at the forefront of bringing hope and healing to the developing world through partnerships between governments, industry, and NGOs. Partnerships that enable research into treatments and cures for diseases such as HIV/AIDS, Malaria, Dengue Fever and Sleeping Sickness. Partnerships that improve access to medicines and vaccines. Partnerships that strengthen health care systems and save lives. Together, we have already made a difference.

Working together, we can make it better yet.

Canada's Research-Based Pharmaceutical Companies
R&D
Les compagnies de recherche pharmaceutique du Canada

Russell Williams, President, Canada's Research-Based Pharmaceutical Companies (Rx&D)

Disease knows no borders. Neither does our Research

G8 leaders are faced with a stark reality as they consider measures to improve child and maternal health. Fully one-third of the world's population does not have access to even basic health care and an estimated 10 million children will die this year, mainly from preventable or treatable diseases.

These global health problems would be insurmountable if not for the partnerships that have brought governments, non-governmental organizations and industry together in a common cause: to combat disease and poverty and give mothers around the world a chance to see their children grow up healthy and strong.

We saw with the H1N1 pandemic how disease can spread rapidly from one country to another. And we also saw how a rapid, co-ordinated response from governments, health providers and research pharmaceutical companies managed to contain this global threat. I am proud to say that Canada was at the forefront of this response.

Our struggle against disease in the world's least developed countries has been far more challenging. Sub-Saharan Africa alone accounted for nearly three-quarters of HIV/AIDS related deaths in 2008.

The global research-based pharmaceutical industry has responded by building partnerships which address many of the priorities set at past G-8 meetings to fight HIV/AIDS, malaria and tuberculosis while expanding global access to anti-retroviral and other medicines

Success depends not only on access to affordable medicines but also on access to better health care. As Bill Clinton observed in an address to a United Nations forum, "My experience has been that almost no one in the world will die this year because of the cost or the lack of availability of AIDS medicine. Still, many people will die of AIDS this year because of the absence of effective health care systems in rural areas of the poorest countries."

That is why our industry is working with the Clinton Foundation and other non-government organizations to train health professionals, build clinics, prevent disease and supply medicines and vaccines at low cost or no cost. Together, we are saving lives every day.

For example, an agreement to supply pneumococcal vaccine under the Advanced Market Commitment involving Canada and other G8 countries as well as GAVI, the Bill and Melinda Gates Foundation and research-based pharmaceutical companies will save an estimated 7 million lives over the next two decades.

Globally, our industry has invested over $9 billion (U.S) over the past decade to support hundreds of partnerships under the United Nations Millennium Development Goals including efforts to prevent mother to child transmission of HIV/AIDS.

In Canada, our member companies have donated more than $250 million in medicines and health supplies through Health Partners International of Canada, providing hope and healing to places like Haiti after the recent earthquake.

World Health Organization Director General Dr. Margaret Chan recently observed that there are "many bright and motivating examples of success everywhere."

But no one can underestimate the challenges that remain.

Disease knows no borders. Neither does our research. Whether we are talking about cancer, diabetes, HIV/AIDS or the so-called "neglected diseases" of the developing world, researchers working for the global pharmaceutical industry are determined to find new treatments and new cures.

Patents are not a barrier to access; they are part of the solution because intellectual property safeguards help fuel discovery and innovation. Furthermore, over 90 per cent of the 319 medicines deemed by the World Health Organization (WHO) to be essential for human health in developing countries are not protected by patents.

We will succeed by continuing to build partnerships that improve health care systems and provide patients world-wide with access to safe and affordable drugs.

R&D

www.canadapharma.org

AIDS in Africa: challenges and complacency

Winning the fight against AIDS will take more than just finance. Aid strategies need continued support and to overcome cultural and political hurdles, too

By Sophie Harmon, Department of International Politics, City University

Now is not the time to be complacent about AIDS. A decline in global prevalence rates show that interventions are beginning to work. Newly established systems and interventions to combat AIDS in Africa are overcoming bureaucracy and inertia, but still require sustained support. A lack of continued support would see a global rise in the numbers of new infections and a reversal of any advances made in the war against AIDS.

The challenge: what are the priority health needs of Africans now?

AIDS remains a day-to-day nightmare for millions of people living in Africa. People still lack access to antiretroviral treatment. Treatment has been made more widely available by bilateral and multilateral initiatives; however, those in the greatest need lack the transportation to access health centres, food and nutrition, and support structures. Localised health centres and working health systems that provide basic services are desperately needed. These services must be gender sensitive and responsive to the different and multiple needs of all members of the community.

People living with HIV/AIDS continue to be cast out of their family and local communities. Stigma continues to restrict employment opportunities and personal relationships. Efforts to sensitise and educate people about HIV/AIDS are essential. These efforts need to be continuous and evolving, not stagnant one-offs.

Legions of grandmothers are the sole breadwinners and carers of extended families that have lost one, both or multiple parents and siblings. Girls are taken out of school to care for siblings and help around the home. Husbands continue to leave wives who are confirmed or suspected to be HIV positive. Women remain dependent on men for financial support and access to social and economic rights.

HIV/AIDS is both a driver and outcome of poverty. AIDS stifles local economies and impedes growth. It restricts investment opportunities as companies and markets stigmatise those states with high prevalence rates. Socioeconomic development in Africa will not be achieved unless HIV/AIDS is combated: it is not only a challenge faced by Africans, but a challenge for us all.

Meeting the challenge: how well have these needs been met?

Multiple global initiatives have risen to this challenge. The last 10 years have seen the introduction of the Global Fund to Fight AIDS, Tuberculosis and Malaria, the World Bank's Multi-Country AIDS Program and the US President's Emergency Plan for AIDS Relief (PEPFAR). These initiatives have shown considerable success in the number of people on treatment, a rise in AIDS awareness, increased global support and an end to state silence and denial. However, the multi-sectoral approach to combating HIV/AIDS pursued by these institutions has its drawbacks.

First, states do not 'own' national interventions against

> National strategic plans across Africa are often identical despite the different cultures, societies, economies and political systems

HIV/AIDS. Political will is constructed by the financial incentive of international aid. National strategic plans across Africa are often identical despite the different cultures, societies, economies and political systems these states have. There is little room to manoeuvre, with states often having to accept intervention strategies developed in Washington and Geneva as a means of securing support for eradicating the disease. World Bank and Global Fund initiatives have introduced new governmental structures in the form of the national AIDS councils that often exist in competition and confusion to ministries of health. This leads to mistrust, additional bureaucracy, tension over mandate and priorities of health interventions and, in effect, the development of two parallel systems.

Second, interventions have been driven by funding that has led to an upsurge in civil society actors. While community-led initiatives are generally promising and responsive to local needs, the increased amount of funding also creates 'briefcase NGOs' with no base, little experience of HIV interventions and minimal outcomes for those they claim to help.

Third, good governance of international institutions remains a problem. There is little transparency and accountability of the World Bank, Global Fund or new actors such as the Bill and Melinda Gates Foundation.

HIV orphans at the Mildmay HIV Centre in Kampala, Uganda

People know these funding bodies are active and money is available, but complain they do not see the money reaching the community, do not know how to access these funds, and do not understand what they are doing and how they affect their everyday lives. The Global Fund particularly lacks an in-country presence and, similar to the World Bank, is only seen as lining the pockets of governments.

Fourth, prevention has increasingly taken a backseat to more costly treatment interventions and vaccine-based eradication strategies. Strategies emphasise abstinence and being faithful as prevention, with less focus on condoms and eradicating the stigma surrounding their use.

The challenge ahead: what can the 2010 G8 Muskoka Summit best do to help?

To meet these outstanding challenges it is imperative that the G8 does not cut funding on HIV/AIDS and comes good on the commitments made in 2005. This will enable those policies and structures that are beginning to work well work better, plug the gaps and continue treatment support that allows people living with HIV in Africa to lead productive lives.

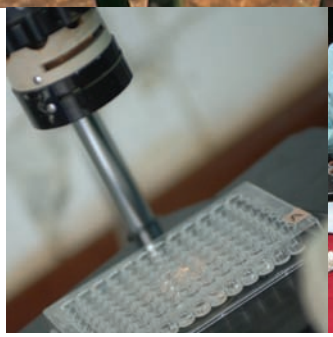
Should cuts in international aid be unavoidable, the following areas should be ring-fenced: universal access to free treatment, provision of free condoms alongside other prevention strategies and the introduction of more rural healthcare centres. Community-led initiatives must continue to be the focus of activity where they are able to show tangible outcomes. Donor programmes must be adaptable and flexible in measuring such outcomes.

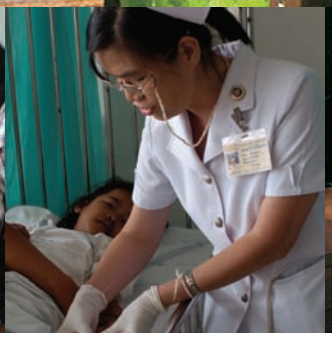
> "AIDS stifles local economies and impedes growth. It restricts investment opportunities as companies and markets stigmatise those states with high prevalence rates"

Vaccine development needs continued support but not at the cost of basic front-line services. Data on the disease must emphasise the number of deaths and new infection, as well as prevalence rates to allow a more accurate comparison of success and failure. This will reduce the ability to manipulate data for political gain.

African states should be encouraged to tackle AIDS head on and to confront contentious issues of homosexuality and the role of women. Policy and programmes must be cognisant of gender difference in experiencing the impact of HIV/AIDS and the delivery of services. States must not be coerced into accepting blueprint AIDS strategies from Geneva and Washington, but must have space to design responsive programmes appropriate to the country in which they are implemented. The role of the national AIDS councils and health ministries should be harmonised to decrease the level of overlap and distrust between the institutions and to allow for state-based interventions to be based on one organising system.

The global financial crisis will make finding money to combat HIV/AIDS a problem. But basic interventions that have proven successful will show that the challenge of combating AIDS in Africa can be met. ◆





EXAMPLES OF TDR WORK

- **New drugs and control methods** for global and regional disease control and elimination programmes (developed in partnership with private industry, national governments and others), including malaria, leprosy, onchocerciasis (river blindness), Chagas disease, lymphatic filariasis and visceral leishmaniasis.

- **Identifying equitable research priorities** by bringing together national, regional and global stakeholders to assist donors and policy makers make their decisions (a global report covering infectious diseases of poverty is due in June, 2011).

- **Increased research capacity and development** through empowerment, mentorship, training and the development of new networks and partnerships, such as the African Network for Drugs and Diagnostics Innovation (ANDI).

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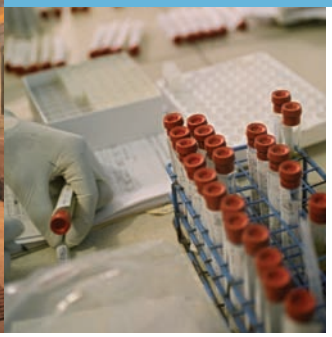

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Investing in maternal, newborn and child health

To achieve Millennium Development Goals 4 and 5 – reduce the number of deaths of children and mothers – G8 countries must be substantially committed to an initiative to reach mothers and children in the communities where they live

By Nigel Fisher, president and CEO, UNICEF Canada, and Meg French, director, International Programmes, UNICEF Canada

When world leaders gather in Muskoka for the G8 Summit in June 2010, they will turn their attention to the large numbers of women, newborns and children who are dying around the world everyday from preventable causes. This focus from the world's largest donor countries comes at a critical time. At this late point in efforts to achieve the Millennium Development Goals (MDGs), the world is seriously off track in achieving Goals 4 and 5 to reduce the number of deaths of children and mothers. While child deaths from preventable diseases are declining and there has been a steady increase in international funding, a surge of support is needed if the MDGs are to be met. This year the G8 has a real opportunity to show leadership and provide critical investment in an area that desperately needs it. Success is within reach, given the right focus and sustained commitment.

About 8.8 million children and hundreds of thousands of women continue to die each year, mostly of preventable causes. It is particularly frustrating that the solution to end these deaths is well known.

In recent decades highly effective interventions have improved the health and nutrition of women and children and prevented and treated many of the main causes of their deaths. Many interventions involve community-centred strategies such as exclusive breastfeeding (feeding with only breast milk with no supplements or water), micronutrient supplementation and family planning. Others involve strengthened facility-based provision of skilled birth attendants, basic obstetric care and antibiotics, and innovations such as new vaccines to prevent pneumonia and diarrhoea, simple drugs to treat and prevent malaria, and highly effective methods to prevent the transmission of HIV from mother to child. The challenge has been to ensure that these interventions reach all women and children. Bottlenecks in accessing health services have meant that coverage rates for these interventions remain low and children and mothers continue to die.

This is where the G8 countries can play a catalytic role. By addressing these bottlenecks through the commitment of sufficient funding to strengthen health systems, support innovation and train community-level workers, the G8 can help galvanise the movement to achieve MDGs 4 and 5. The G8 Muskoka Summit comes in time to make an important contribution in support of the United Nations Joint Action Plan for accelerating progress on maternal and child health ahead of the UN Millennium Development Goals Review Summit in September 2010.

One element critical to the solution for ending preventable maternal and child deaths is the ability to reach mothers and children in the communities where they live. The poorest and most marginalised have little or no access to health facilities. Any initiative hoping to see results in the short to medium term must reach directly into communities themselves. To strengthen the lower levels of the health system, the G8-funded initiative must focus on going to scale with a package that includes the following interventions:

> "Now is the time to invest in maternal, newborn and child health. It makes good economic and political sense"

- community-based curative interventions, including policies that permit the administration of antibiotics by community health workers;
- family and community health promotion interventions, to encourage breastfeeding and healthy hygiene and sanitation practices; and
- preventive interventions, such as new vaccines, vitamin A and zinc.

Constraints related to the social, economic, political and epidemiological contexts of countries influence what type of investment can and should be made. By examining the constraints faced by the 40 countries in Asia and sub-Saharan Africa, which represent three-quarters of global child and maternal deaths, it is possible to determine which investment option is most feasible for each country. Three options for investment would have the highest

A mother and her newborn baby at a maternity clinic in Manila. A large number of women in the Philippines die from complications from pregnancy and childbirth

proven impact on the main causes of deaths of women and children.

The first option would involve investments in preventive services, promotion and community-based curative care. This would result in a decrease in the number of deaths of children under five by 42 per cent and of mothers by 6 per cent.

The second option would build on the first and also include additional investments to provide essential packages of maternal and newborn health services, such as basic emergency obstetric care, and selected high-impact curative services for older children, such as treatment of severe acute malnutrition. Under this option child deaths would be expected to fall by 55 per cent and maternal deaths by 34 per cent.

The third option would build on the first two but see them taken more fully to scale. It includes strengthening the referral system to higher levels of the healthcare system in order to provide additional curative care. Such an investment would be expected to reduce child mortality by 59 per cent and maternal mortality by 44 per cent.

Investment in the most appropriate funding option for each country would require donors to invest a total of $20 billion – $81 billion between 2011 and 2015 depending on the size of the investment available from national governments.

As part of the G8's catalytic role in improving maternal, newborn and child health, the investment should be used to leverage additional funding from a fully resourced Global Fund to Fight AIDS, Tuberculosis and Malaria and from the GAVI Alliance. G8 governments should meet the commitments they made at Gleneagles in 2005 to double aid. All donors should be encouraged to invest further in maternal, newborn and child health. Governments of high-burden countries should be encouraged to meet their global financing commitments to health responses such as the Abuja targets. By investing together and developing common platforms for monitoring the quantity and effectiveness of aid, both donor and national governments build on the concept of mutual responsibility for outcomes.

Now is the time to invest in maternal, newborn and child health. In this age of financial crises and political instability, it makes good economic and political sense. Investing in prevention and promoting good health reduces the cost of curing people when they get sick, a saving of up to $700 million globally per year for child survival alone. Good health and nutrition can also generate huge economic returns, because people can work more productively. This helps to improve their lives and contributes positively to the wider economy. It has been estimated that current maternal and newborn mortality rates directly result in $25 billion in lost potential productivity every year.

Thus mobilisation of the required resources can show a very effective return on investment, as well as contribute to improved governance and stability. Effective delivery of services reinforces trust in institutions and governments. Expanding access to previously excluded populations nurtures equity and social integration.

But most importantly, there is a moral obligation to make these investments. It is the basic human right of all people to survive. Mothers and children who die of preventable diseases or who face illness or disability are denied this right.

Now is the time for a substantial commitment by the G8 in an initiative to reach mothers and children in the communities where they live. The impact of such an investment and leveraging could mean the difference between life and death for millions of mothers and children around the world. We know what to do. The leadership and political will of G8 leaders can turn that knowledge into millions of lives saved and lives improved. ◆

WHY DO G8/G20 LEADERS NEED TO STAND UP?

- 50% of mother and newborn deaths at childbirth occur in sub-Saharan Africa
- Africa has one midwife for 345 women giving birth; the WHO recommends one midwife for every 20 women giving birth
- 80% of maternal deaths can be averted with increased access to skilled delivery
- African governments have not delivered on their commitment to allocate 15% of public budget to health
- African wage bills for health remain restricted and underfunded limiting recruitment and retention of health workers

SIMAMA

STAND UP FOR AFRICAN MOTHERS

AMREF

Better Health for Africa

www.amref.org

AMREF ASKS G8/G20 LEADERS TO TAKE A STAND AND ENSURE ACCESS TO SKILLED DELIVERIES TO STOP THE DEATHS OF AFRICAN MOTHERS AND CHILDREN. THE G8/G20 SHOULD:

- Invest in programme support to recruit and retain midwives and other health workers in sub-Saharan Africa
- Support a 100+% increase in the number of midwives, community and midlevel health workers to reduce maternal deaths by 75% (MDG 5)
- Support African governments to remove financial barriers such as user fees to increase access to health services for mothers and children

Blindness causes poverty...
...poverty causes blindness

80%
of blindness is avoidable

VISION 2020: The Right to Sight

Main photograph: Abir Abdullah/Sightsavers International. All other photographs courtesy of IAPB member organisations.



VISION 2020
THE RIGHT TO SIGHT


VISION2020.org

WHO & IAPB, working together to eliminate avoidable blindness

831 million people live with blindness or vision impairment*

80% of blindness is avoidable

90% of blind people live in developing countries

Sight restorations are among the most cost effective interventions in health care

VISION 2020: The Right to Sight

VISION 2020: The Right to Sight is the Global Initiative for the Elimination of Avoidable Blindness; a joint programme of the World Health Organization and the International Agency for the Prevention of Blindness (IAPB). IAPB is a worldwide coalition of 111 organisations including NGOs, global peak bodies for ophthalmology and optometry, world-leading academic institutions and multinational corporations.

The Initiative aims to eliminate the main causes of avoidable blindness by the year 2020 by facilitating the planning, development and implementation of sustainable national eye health plans. IAPB member organisations seek to strengthen national health systems, encouraging the integration of sustainable eye care services into existing structures.

VISION 2020 strategies have proven successful in reducing blindness due to cataract, onchocerciasis, trachoma, vitamin A deficiency and other blinding eye conditions. Today, 15 million fewer people are blind compared to 1999 projections.

VISION 2020 Strategies – crucial contributions to MDGs

There is a strong correlation between blindness and poverty, particularly in developing countries. Many of the causes of blindness are directly related to economic and social disparities.

Studies indicate that strategies to eliminate avoidable blindness can help to alleviate poverty in developing countries. Impressive economic rates of return have been cited, including an estimated 19% in the example of the Gambia. In India, it was estimated that treatment of cataract blindness alone, at a cost of $0.15bn could result in savings of up to $1.1bn in annual GNP.

Findings from a recent study by WHO Collaborating Centre International Centre for Eye Health (ICEH), "provide empirical evidence of improved health related quality of life and increased involvement in different daily activities", supporting arguments of economic benefit from eye health interventions.

WHO Action Plan on Blindness and Visual Impairment

With World Health Assembly resolutions in 2003 and 2006, WHO Member States made unanimous commitments to integrate prevention of blindness and vision impairment into their health care systems.

Based on these resolutions in 2009 the World Health Assembly adopted a WHO Action Plan for the Elimination of Avoidable Blindness and Visual Impairment. For the implementation of this plan significant additional financial resources are needed.

Honouring Commitments

The Australian government is leading efforts to eliminate avoidable blindness and vision impairment in Asia Pacific, with a total commitment of A$600 million over 10 years. With this plan, more than 124 million people will have their vision improved or restored. Given that vision impairment in Australia costs $9.85 billion a year, and $66.75 billion a year in the US, the Australian government believes that this strategy will bring significant economic benefits to the region.

The Indian government has also made substantial commitments to eye health, allocating Rs.1,250-crore (over $250 million) to expand the scope of its blindness control scheme to include other causes of blindness such as diabetic retinopathy and glaucoma, as well as cataract.

All governments need to provide funding to support the elimination of avoidable blindness, particularly in low- or middle-income countries.

Please visit www.VISION2020.org for more information and to find out how to help.

**45 million people are blind, 269 million have low vision and 517 million people have impaired near vision or presbyopia*

www.VISION2020.org

VISION 2020 THE RIGHT TO SIGHT

SPONSORED FEATURE

Success within reach – a call for renewed leadership on AIDS

The International Council of AIDS Service Organizations (ICASO) calls on all government leaders to recognise that the decisions they make in 2010 could be the defining moment in history, when world leaders make the difference in turning the tide on the AIDS epidemic.

As we entered the 21st century, G8 leaders recognised that a world with AIDS was a world in which economies and whole generations were shattered and devastated. Governments' commitments globally to universal access (to HIV treatment, prevention, care and support), backed by funding, has literally meant that many millions of lives have been saved.

Yet, while significant progress has been made, a misconception seems to be gaining hold – that enough has been done on AIDS. But AIDS has not gone away. In 2008, 1.7 million adults and 280,000 children under 15 years died due to AIDS, and 2.7 million people were newly infected. The leading cause of death among women of reproductive age is still AIDS. (WHO/UNAIDS 2009).

Investing in AIDS responses has been a good example of how the world can effectively respond to health challenges. Through investments by the Global Fund to Fight AIDS, TB and Malaria to put 2.5 million people on HIV treatment by the end of 2009, it is estimated that "averted deaths in 2011" will correspond to 2 million life years gained. Further estimates have it that 5 million lives overall will have been saved as a result of Global Fund-financed programmes to date. **That is real impact.**

Investing in AIDS responses continues to be a mechanism to reduce other related health challenges. By integrating more successfully relevant maternal and child health programming into HIV and AIDS responses, and funding mechanisms such as the Global Fund, this can both accelerate the existing slow progress on maternal and child health, and also reduce HIV infections and AIDS-related deaths. **That is real impact.**

Investing in AIDS responses has also been reported by WHO to have strengthened health care systems through innovative approaches to service delivery, from standardized drug regimens to improved supply and procurement systems. **That is real impact.**

Yet, despite these gains, we now see donor investments in AIDS slowing – even though we are still far from achieving the commitment to reach universal access by 2010. We can see this in the reported drop-off in donor financing of AIDS responses – the implication being rising rates of morbidity and mortality for those waiting to access HIV treatment in Africa for instance.

As we learn more about the impressive impact that HIV treatment has on preventing the transmission of HIV, to stop access to treatment now will have serious human and financial implications for the future.

ICASO therefore calls for investments in the AIDS response:

1. **By donor governments fully funding the Global Fund third replenishment in October 2010, with at least the necessary minimum of $20 billion for 2011-13.**
2. **By developing country governments honoring their commitment to spend 15% of total government spending on health.**
3. **By all governments committing to delivering on Universal Access to HIV prevention, treatment, care and support by 2015, in line with other MDG commitments.**

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www.icaso.org

ICASO
INTERNATIONAL COUNCIL OF AIDS SERVICE ORGANIZATIONS

The Global Fund has distributed 104 million insecticide-treated nets to prevent malaria since 2004

Credit: Karl Grobl, AMREF

Overcoming AIDS, tuberculosis and malaria

Major investments in health programmes by the Global Fund mean we are closer to winning the fight against AIDS, tuberculosis and malaria

By Michel Kazatchkine, executive director, Global Fund to Fight AIDS, Tuberculosis and Malaria

This year donors will decide if the world will win the fight against AIDS, tuberculosis and malaria and meet the health-related Millennium Development Goals (MDGs). It can be done.

Ten years ago, the world was floundering in its response to AIDS, tuberculosis and malaria in developing countries, causing an unprecedented public health and human rights crisis. Effective HIV treatment had been available in high-income countries since 1996, but was still out of reach for nearly everyone else in need. The spread of malaria seemed unstoppable, and the target of halving tuberculosis prevalence by 2015 seemed unreachable. After United Nations secretary general Kofi Annan issued a call to action, governments from the North and the South, civil society, UN agencies and the private sector met in Brussels in 2001 to create the Global Fund to Fight AIDS, Tuberculosis and Malaria, with the aim of vastly accelerating the response to these three diseases.

What we have achieved

In the past eight years, the Global Fund has proven to be an efficient channel for massively increased funding for health programmes in more than 140 countries, focusing international efforts on achieving ambitious, measurable

Kassi Keita, 3, had been sick for 18 months before being diagnosed HIV-positive. In Africa in 2009, 400,000 babies were born with HIV

targets. Since 2002, the Global Fund has approved grants totalling $19.2 billion, making it the main multilateral contributor to the health-related MDGs. Every dollar given to the Global Fund goes straight to programmes in the country – the Global Fund has no country offices, and its operating expenses are almost entirely covered by interest earned on its contributions. With government budgets under strain and the world's poor facing increased economic hardship, the Global Fund's continuous efforts to improve value for money, increase efficiency and channel resources to where they achieve the best results are more crucial than ever.

At the end of December 2009, Global Fund programmes were providing antiretroviral therapy to 2.5 million people living with HIV. The Global Fund is also the main multilateral funder of measures to prevent the spread of HIV. For example, in 2009 alone, 340,000 pregnant women received a complete course of antiretroviral prophylaxis to prevent transmission of HIV from mother to child through Global Fund grants. Since 2004 the Global Fund provided treatment to 6 million people with active tuberculosis and has distributed 104 million insecticide-treated nets to prevent malaria.

> "Less than half of the people in urgent need can obtain life-saving treatment while access to prevention measures remains limited for many"

Investments are making a major impact

As a result of the Global Fund's efforts and those of its partners, AIDS mortality has decreased in many high-burden countries. The number of new HIV infections is stabilising or falling in countries throughout sub-Saharan Africa. Countries in Africa are reporting up to 80 per cent declines in new malaria cases and in malaria mortality. Prevalence of tuberculosis is also declining worldwide. It has been estimated that Global Fund programmes have saved at least 4.9 million lives in the last six years alone. Every day, another 3,600 lives are saved.

Global Fund investments to combat HIV, tuberculosis and malaria are also having a much wider impact – beyond individuals, their families and communities. They are major investments in health systems – bolstering infrastructure, strengthening laboratories, expanding human resources, augmenting skills and competencies of health workers, and developing and supporting monitoring and evaluation activities. These investments, in turn, improve the sustainability of services, increase national capacity to expand programmes further and increase countries' ability to improve services for other health issues.

Global Fund investments are also making a substantial contribution toward reaching MDGs 4 (reduce child mortality) and 5 (improve maternal health).

The Global Fund is contributing to reducing under-five mortality by supporting activities for the prevention and control of malaria, increasing access to pediatric HIV treatment and funding programmes to prevent HIV transmission from mother to child.

The Global Fund is also contributing to improved maternal health through programmes that are scaling up prevention and treatment of HIV, tuberculosis and malaria. These programmes are reducing the largest causes of mortality among women of childbearing age, as well as reducing major causes of maternal deaths.

Worldwide, maternal mortality rates have declined, but progress has been slowed by the HIV epidemic. Providing greater access to treatment and care for HIV-positive pregnant women must therefore be an essential component of efforts to reduce maternal health risks.

The Global Fund has also been facilitating the integration of HIV and sexual and reproductive health services, thus contributing toward the second target under MDG5: universal access to reproductive health. Almost all Global Fund–supported HIV programmes provide sexual and reproductive health-related services.

A decisive year

The year 2010 will be a decisive one in the fight against the three pandemics and for maternal and child health. The world will review progress on the MDGs. But 2010 is also the year of the replenishment of the Global Fund for 2011-13. The outcome will decide where the world will be in 2015 with regard to the health-related MDGs.

Even today, more than four years after G8 leaders at Gleneagles pledged to provide HIV prevention, treatment and care to everyone who needs it, less than half of the people in urgent need can obtain life-saving treatment while access to prevention measures remains limited for many. In Africa alone, 400,000 babies were born with HIV in 2009 – a moral outrage and a public health and human rights disaster. The gains made in the fight against HIV, tuberculosis and malaria are impressive, but they remain fragile. A reduction – or even stagnation – of funding at this point in the fight would lead to reversals of recent progress and put the MDGs out of reach.

Instead, if donors, led by the G8 countries, contribute the resources that would allow the Global Fund to continue scaling up HIV, tuberculosis and malaria programmes and interventions rapidly, by 2015 malaria could be eliminated as a public health problem in most countries where it is endemic; millions more HIV infections may be prevented and lives otherwise lost to AIDS saved; further significant declines in tuberculosis prevalence and mortality could be achieved; the growing threat of multi-drug resistant tuberculosis may be contained; the transmission of HIV from mother to child may be eliminated; health systems could be strengthened; and maternal health and reduced child mortality could be improved.

We must rise to this challenge

HIV, tuberculosis and malaria prevention and treatment can be scaled up cost-effectively and at unprecedented speed in poor countries, helping to strengthen health systems, reduce child mortality and improve maternal mortality. This is no time to slow down our efforts. Rather, we should all redouble them. ◆

Tuberculosis Control: a wise investment

By Marcos Espinal, Executive Secretary

Great progress has been achieved in the fight against tuberculosis - the proportion of the world's people becoming ill with tuberculosis each year is declining slowly. Some 36 million people have been cured of TB over the past 15 years through DOTS, a rigorous approach to case management endorsed by the World Health Organization (WHO). Since the launch of DOTS in 1994, the number of people being cured has increased regularly and up to 8 million TB deaths have been averted.

Still, tuberculosis causes more deaths among young people and adults worldwide than any other single infectious disease, apart from HIV. The enormous economic impact of tuberculosis is driven by both the size of the problem - with nearly two million deaths per year, including half a million deaths from HIV-associated tuberculosis[1] - and the fact that in developing countries the majority of people affected by tuberculosis are in their prime working years.

"Great progress has been achieved in the fight against tuberculosis"

Health investments are essential to the well-being of nations and a pre-requisite to good social and economic security. We must not allow the gains that have been made to be lost or allow the situation to deteriorate further - something that we risk doing if we fail to respond to the new and emerging TB threats of drug resistance and the deadly combination of TB and HIV.

To fight tuberculosis effectively and accelerate further the achievement of its control and elimination, we need bold new political leadership and broad legislation on matters that go beyond the normal and narrow remit of the health sector: social protection, laboratory services, quality assurance for all drugs and public sector human resources. We also need leadership, funds and commitment for an invigorated research agenda to develop and bring to market urgently needed new diagnostic methods, new drugs and a new vaccine.

Tuberculosis is widely viewed as a disease of the poor, but many of those affected have considerable education and earn good incomes. The World Bank has acknowledged that investing in tuberculosis control is one of the most cost-effective public health investments. A recent report found[2] that scaling up control of tuberculosis according to the Stop TB Partnership's Global Plan to Stop TB 2006-15 would not only prevent unnecessary sickness and death but that it would actually be cheaper than maintaining the status quo. In Africa, the economic benefits of fully funding and implementing the Global Plan, which is underpinned by the WHO Stop TB Strategy, exceed the costs by a factor of nine.

This year represents an important benchmark towards the Millennium Development Goals. There has been a recent upsurge of support from civil society, progressive leaders and private citizens for a financial transaction tax and a currency transaction levy targeting development challenges. Fighting TB is a wise investment and must be viewed as a critical aspect of any development agenda. As G20 leaders deliberate this year about innovative financing solutions, we urge them to give global health challenges, including TB, sufficient weight.

1. World Health Organization. Global tuberculosis control 2009: epidemiology, strategy and financing. WHO report 2009. WHO/HTM/TB/2009.411
2. Laxminarayan R, Klein EY, Darley S, Adeyi O. Global investments in TB control: economic benefits. Health Affairs 2009;28; w730-w742 (published online 30 June 2009; 10.1377)

Stop TB Partnership | World Health Organization | www.stoptb.org

mondofragilis group: Design: messaggio.studios / ©Evelyn Hockstein

Defeating malaria together

This year, 2,000 young children will die daily from malaria unless they receive treatment that can cure them. By developing new effective and affordable antimalarials, Medicines for Malaria Venture is working to give these children a better chance of survival.

New and more effective medicines for malaria are urgently needed. Why? Because although medicines for malaria do exist, the most popular ones, such as chloroquine, no longer cure the disease. The ever-present threat of resistance to current medicines looms large. Effective high-quality medicines are an essential weapon, which, with preventive measures such as insecticide-treated bed nets, indoor residual spraying and a future vaccine, will help to ultimately defeat malaria.

Medicines for Malaria Venture (MMV), a leading public-private-partnership, is dedicated to finding innovative treatments for malaria. With over 130 partnerships in 44 countries, MMV now manages over 50 projects in the world's largest antimalarial research portfolio and is a proven success.

In early 2009, working with partners, MMV developed and launched its first product – a sweet-tasting, cherry-flavored, dispersible antimalarial for children: Coartem® Dispersible. MMV plans to launch two more products by 2011. With malaria eradication at the top of MMV's agenda, its research focuses on new treatments to tackle emerging drug resistance, defeat all species of the parasite, and block transmission of the disease.

Critical though it is, however, research is not enough. People must also have access to these novel life-saving products. This is not as easy as it sounds. MMV is helping to design and implement innovative strategies to radically improve access to its medicines for those most at risk of malaria. It is also helping to build an evidence base on the antimalarials' market in several African countries.

MMV's work is possible thanks to the support of governments, foundations, corporations, and individual donors. Typically, hundreds of millions of dollars are needed to develop a new medicine. MMV can do this at a fraction of the cost with the help of generous in-kind contributions from our partners, e.g., facilities and expertise, which equals the input from our donors.

We are actively striving to expand and develop current and new donor partnerships, solicit more in-kind input from partners and build MMV's global network to achieve our mission.

Help us discover, develop and deliver new medicines that will cure and protect vulnerable and neglected populations at risk of malaria. Please contact Julia Engelking at engelkingj@mmv.org with any ideas or philanthropic investment queries.

Medicines for Malaria Venture (MMV) is a not-for-profit organization dedicated to reducing the burden of malaria in disease-endemic countries by discovering, developing and facilitating delivery of new, effective and affordable antimalarial drugs. Our vision is a world in which these innovative medicines will cure and protect the vulnerable and under-served populations at risk of malaria, and help to ultimately eradicate this terrible disease.

www.mmv.org | ***info@mmv.org***

Giving Them Back Their Future

More than 2,000 children die from malaria every day because their caregivers cannot access effective antimalarials

Medicines for Malaria Venture and partners are working to **discover, develop and deliver effective and affordable medicines** to give vulnerable populations the hope of a future

Defeating malaria together

MMV
Medicines for Malaria Venture

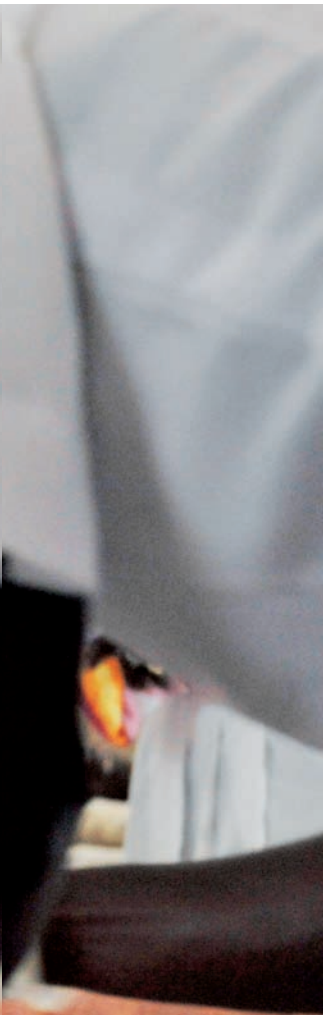
Cutting and tearing

Médecins Sans Frontières (MSF) has published Writing on the Edge, *a collection of first-hand accounts of life inside conflict zones where MSF provides emergency medical care. In this abridged excerpt, crime writer Minette Walters recounts MSF's efforts to reduce maternal and infant mortality in Sierra Leone*

It's eleven o'clock at night, and I'm in a medical operating theater in Kambia, a remote town in Sierra Leone. I'm using my weight to hold a pregnant seventeen-year-old girl to the table because there's no one else to do it. She lies in the crucifix position with each hand anchored to a wooden board, but her unfettered legs keep jerking and sliding toward the floor. A Dutch doctor and an Irish nurse are scrubbing up in another room, while two Leonean nurses hurriedly assemble the necessary anesthetic and equipment for an emergency C-section.

I try to look intelligent when Dr. Anne-Maria explains that the patient's suffering from eclampsia, but the only "eclampsia" I know is pre-eclampsia. Heads would roll in England if a consultant saw a seventeen-year-old in this state.

Her seizures have caused her to bite through her tongue, and it's so swollen that it's protruding from her mouth. To stop further damage, the nurses have jammed a stick between her teeth but, coupled with the crucifix position, it looks like a grotesque form of torture. Her name is Wara, and her husband brought her to the hospital half an hour ago. One of the nurses asked him why he waited so long but she knew the answer already. It took him twelve hours to borrow enough money to make the six-mile drive from their village. Sierra Leone is the third-poorest country in the world and, with no public transport, vehicle owners exploit the needy.



The closer a patient is to death, the higher the price demanded.

Wara will die of system failure unless her baby is removed. The good news is the baby is still alive; Anne-Marie has picked up a heartbeat. The bad news is she knows nothing about this patient except that it's her first pregnancy. Wara's never been to a clinic, has never had her blood pressure checked or treated, and her husband's unsure when the seizures started because in this society men do not attend births. He can only repeat what Wara's traditional birth attendant (TBA) told him, and that information is unreliable.

TBAs have worked in Sierra Leone for centuries. They have herbs, containing active ingredients similar to Western medicines, which can stimulate contractions; but most of them use these herbs indiscriminately, without any real understanding of a mother's condition. The results of misuse can be horrific (excessive bleeding, ruptured placentas, retained placentas, obstructed labor, untreated eclampsia), which may explain why women in Sierra Leone have a one in fifty chance of dying every time they get pregnant, and why one in five of their babies is stillborn. As ten pregnancies per woman is common, death and childbirth are closely linked.

Kambia Hospital was destroyed during Sierra Leone's eleven year civil war. The war was declared over in 2002 after deployment of a large UN peacekeeping force and the deployment of British troops—a military intervention that, for the moment, Tony Blair can count as a success. The Revolutionary United Front surrendered its arms in exchange for money, and a desire for peace and reconciliation seems to pervade the country. Certainly, Leoneans are some of the friendliest people I've met in Africa. With the hospital destroyed, MSF rented the largest available house and turned it into a sixty-eight-bed inpatients' department by building an extension and erecting a tent in the garden. There's no running water (medical staff scrub up under a tap connected to a plastic water container) and only intermittent electricity. Every bed is full, and each patient has one or more caretakers to cook and clean for them.

In a country like Sierra Leone with high mother/baby mortality rates, specialist maternity care is essential. I'm shocked at how devastating full-blown eclampsia is and look up with relief when Anne-Marie and Marion return, fully gowned and gloved, to start the operation. I have no medical pretensions at all. I may write about murder but I'm not that keen on blood. I'm in Sierra Leone to observe MSF's Mother Child Health initiatives, not to participate in emergency C-sections.

With two professionals in charge, everything takes on a new urgency. A cordon of sterility is established, anesthetic's administered, and everyone starts barking instructions at me as if I'm part of the team.

Suddenly a tiny boy, weighing just over three pounds, emerges through the incision. He has virtually no color, he isn't crying or breathing, but he does have a heartbeat. One of the Leonean nurses scoops him into a green sheet and, together, she and Anne-Marie attempt to revive him with oxygen. We wait in silence until a thready cry and a sudden fluttering in his chest tells us he wants to live. It's an amazing moment that turns all too quickly to tragedy. Marion, who's removing the placenta, has discovered another foot. This time it's a little girl, and she's half a pound lighter than her twin brother. Briefly, Anne-Marie tries to revive her but, with no heartbeat and only one oxygen set, she instructs all efforts to be concentrated on the viable baby. Later, I ask her what would have happened if the second baby had responded. "The same," she says with a sigh. "With only one oxygen set I have to choose the twin with the best chance of survival."

It's seven hours later. I'm in a 4 x 4, traveling north to Tombo Wallah with Isabel, a volunteer from Germany, and her Sierra Leonean colleague, Emmanuel.

All MSF staff cite the difficulty of travel as a major cause of mother and infant mortality. Apart from the exploitative cost, the roads are so bad that only lorries and 4 x 4s can negotiate them successfully. In places, we see some road-flattening and hole-filling but new ruts open up as soon as the rains come. The only tarmacked roads in the north of the country were given and constructed by Germany in the 1970s and France in the early 1990s. I'm impressed by this sensible use of donor money in a country where corruption is rife. Finished roads don't disappear into government pockets.

Isabel and Emmanuel are MSF outreach nurses, and their job is to support the Ministry of Health primary-care clinics in the isolated communities around Kambia. Their focus is maternal and child health, and they train local teams to go around the villages with information on family planning, malaria, AIDS prevention, the importance of clinic visits during pregnancy, and safe delivery in the hospital.

Their target patients are women like Wara, whose tragedy could have been avoided with free antenatal care, but access to outlying communities is difficult and MSF workers believe they reach only a percentage of mothers at risk. That percentage keeps rising with 160 new consultations a month, but I hear numerous horror stories about what happens to women in the bush. Certainly Wara's experience suggests that if the drive to Kambia had been twice as long, she would never have reached the hospital. The life of a sick woman has less value than a man's, while the life of a sickly child has none.

> "Sierra Leone has the highest infant mortality rate in the world, with one in three children dying before their fifth birthdays"

We approach Tombo Wallah by water, keeping a wary eye out for crocodiles. Wooden boats line its muddy, estuary beach, and tropical jungle sweeps the banks on either side. Single-story houses with rusted corrugated-iron or thatched-palm roofs border a yellow dirt road, and the vibrant mix of colors against a clear, blue sky is breathtaking.

The clinic serves a wide area, and there's a queue of patients waiting. Most can be treated by the MOH nurses who run the service, but serious cases are referred to Isabel and Emmanuel for possible admission to Kambia Hospital. Emmanuel takes the lead.

His first patient is Amie Turay. She's thirty-eight weeks pregnant and has been brought to the clinic by her elderly husband after complaining of pains in her abdomen. They've walked an hour to be here. She's an epileptic with a withered left hand and some paralysis of her left leg.

Amie is Mr. Turay's second wife, and this is her sixth pregnancy. She has two surviving children. Of the other three, the eldest was lost during the war, one was stillborn, and another died at two months old, probably of malaria.

Sierra Leone has the highest infant mortality rate in the world, with one in three children dying before their fifth birthdays. Malnutrition and respiratory diseases such as

MSF provides its services free, relying on volunteer doctors and nurses from around the world to work six- or nine-month tours

TB and pneumonia are common, but the major killer is malaria. In sub-Saharan Africa 2,800 toddlers die each day from the disease, and Sierra Leone, the worst affected, is still using chloroquine, a first-generation remedy that no longer works because malaria parasites have developed a resistance to it.

Lengthy discussions between the Ministry of Health, the World Health Organization, and MSF to persuade the government to adopt ACT (Artemisinin-based Combination Therapies) in place of chloroquine have finally reached agreement, although the government can't implement the change until the end of 2006. MSF is ready to introduce the new drug into all of its clinics and hospitals as soon as it receives approval.

Mr. Turay agrees that Amie should return to Kambia with us, although he claims he won't be able to find a caretaker for her. I look at Amie and wonder what's frightening her. Does she think her husband will abandon her? I learn later that she's worried about the journey. She's never been farther than Tombo Wallah in her life and she doesn't know where Kambia is.

The next woman has edema (bloated legs and abdomen) and she's advised to come to the hospital as soon as she can arrange caretakers for herself and her five children. Her name's Asatu and she's very assertive. She tells Emmanuel that she doesn't like her husband, and she'll only admit herself to Kambia if the doctor will sterilize her without asking his permission. Otherwise she'll make a three-hour boat trip on the open sea and find someone in Freetown to do it. She's thirty-five years old, she's on her eighth pregnancy, and she doesn't want anymore children. With Emmanuel's reassurance, she agrees to come in on Saturday.

I wander down to the riverside with a troop of children in tow, and find Mr. and Mrs. Turay waiting patiently in the shade of a tree. We can't communicate because they don't understand English, but as I hand out baby wipes to the youngsters, the couple draws close out of curiosity. I offer a wipe to each of them. Amie takes hers to clean her hands, and Mr. Turay tucks his surreptitiously into her bag so that she can use it later. I like him for that and hope it means he'll find a caretaker for her. When we finally board the boat, he stands in the shallows and waves goodbye until we're out of sight.

No one who travels in an MSF vehicle can be in any doubt of the charity's high standing. Everywhere we go, people wave and chant: "Em-ess-eff . . . em-ess-eff."

I spent a week in Sierra Leone, talking to patients at Kambia and Magburaka, where MSF provides free health care for mothers and children in a one-hundred-bed MOH hospital. Under the supervision of Sarah Bush, an MSF midwife from Sheffield, all staff are now trained to record patients' histories, with numbers of pregnancies, stillbirths, and infant deaths. The figures bear out the WHO and UN mortality statistics for Sierra Leone, although records only exist for patients who seek help. No one knows how many deaths go unreported.

While I was at Magburaka, there were six emergency C-sections in one twenty-four-hour period. This is not unusual. Women can be left to struggle for two or three days before they're brought to hospital, which is why MSF places so much emphasis on its outreach programs.

MSF provides its services free, relying on volunteer doctors and nurses from around the world to work six- or nine-month tours.

Tragically, Wara's little son died after three days because he couldn't suck. His grandmother tried to keep him alive with milk from a spoon but, without specialist care in a premature baby unit, his chances were negligible. Wara recovered well from her surgery but it was a long time before her tongue healed. Her husband still has to repay the money he borrowed to get her to the hospital.

Mr. Turay surprised everyone by coming to Kambia himself to act as Amie's caretaker. Anne-Marie tells me he's looking after her well, and they seem happy together. I have a huge soft spot for Amie. Through a translator, I asked her the next day how she felt about her ride in the 4 x 4. She giggled. "I liked it," she told me. "It's the most exciting thing I've ever done."

Me too, I thought. ◆

Writing on the Edge *is published by Rizzoli International*

A global call to action: strengthen midwifery to save lives and promote health of women and newborns

Maternal mortality: still the greatest health and gender inequity in the world

We, midwives and other health professionals of the world and development partners, gathered here on the occasion of the Women Deliver Conference in Washington DC, June 2010, share the view that bold and unprecedented action is required to achieve Millennium Development Goal (MDG) 5: *Improve Maternal Health* and the newborn component of MDG 4: *Reduce child mortality*. Today 99 per cent of maternal and newborn deaths occur in developing countries. Each year more than two million women and newborns die needlessly due to preventable causes related to pregnancy, childbirth and post-partum conditions. Millions more suffer disabilities. When a woman dies, her children are less likely to receive nutritious food and education. Saving women's lives and improving their health are key to achieving all of the MDGs.

We know what to do – it is a cost-effective investment

There is international consensus on the set of evidence-based and cost-effective solutions required to ensure that *every pregnancy is wanted, every birth is safe and every newborn is healthy*. Central to these interventions is a high quality workforce supported by a functioning health system. Midwives, as part of this workforce, provide the continuum of care needed by pregnant women and their newborns from the community to the hospital level.

Midwives and midwifery services save lives and promote health

Up to 90 per cent of maternal deaths can be prevented when midwives and personnel with midwifery skills are authorized and supported by the health system to practice their full set of competencies, including basic emergency obstetric and newborn care. In addition midwives improve the sexual and reproductive health of individuals and couples, including adolescents, by providing family planning services and counseling, and HIV prevention, including the prevention of mother-to-child transmission of HIV. According to the World Health Organization (WHO), some *334,000 midwives* are needed to fill the gaps in high-mortality countries by 2015.

A call to action to strengthen midwifery services

We pledge to join forces with governments, civil society, and other partners to continue supporting implementation of World Health Assembly Resolution 59.27 on Strengthening nursing and midwifery and initiating a global movement to strengthen midwifery services. This will ensure rapid progress in achieving MDG 5 and contribute to the achievement of MDGs 4 and 6 (to reduce child mortality; and combat HIV/AIDS, malaria, and other diseases). In response to the UN Secretary General's Joint Action Plan for Women's and Children's Health, we call on all governments to increase investments in midwifery services now and to make this a high priority at the UN Summit on the Millennium Development Goals in September 2010 and beyond.

We call on governments to address the following vital areas:

1. **Education and training – Provide** education and training in the essential competencies for basic midwifery practice. Build institutional capacity, including strengthened clinical training, post-graduate programs and research. Increase South-South collaboration to expand the production of midwives with evidence-based quality training.
2. **Legislation and Regulation – Strengthen** legislative and regulatory frameworks to ensure midwives have appropriate standards of practice and are regulated to practice their full set of competencies as defined by the WHO and the International Confederation of Midwives (ICM). Also, ensure immediate notification of maternal deaths.
3. **Recruitment, retention and deployment – Implement** national, costed health workforce plans and strengthen management capacities of Ministries of Health regarding training, recruitment, retention and deployment of the midwifery workforce, as per The 2008 Kampala Declaration and Agenda for Global Action on Health Workers and which is vital to increasing access to midwifery services for poor and marginalized women.
4. **Association – Strengthen** national professional midwifery associations to promote the profession, improve standards of care, participate in policy making at regional and national levels, and establish closer collaboration with other professional organizations, especially obstetric and pediatric societies.

Finally, we call on development partners – particularly the G8 and G20 – to provide long-term support to countries seeking to strengthen midwifery services by investing in a midwifery workforce as a fundamental step towards a functioning primary health care system that can deliver for women and newborns, fostering a healthier future for all.

AstraZeneca: working with others to improve patient health

AstraZeneca is a global, innovation-driven biopharmaceutical business with a primary focus on the discovery, development and commercialisation of prescription medicines. Our goal is to make the most meaningful difference to patient health through great medicines. Backed by our 70-year track record of pharmaceutical innovation, we have a broad range of marketed medicines that continue to make a positive difference in important areas of healthcare. We are a leader in gastrointestinal, cardiovascular, neuroscience, respiratory and inflammation, oncology and infectious disease medicines.

Building relationships

Our medicines are testament to the combined skills of our people, our partners and our commitment to working closely with physicians, patients and others to understand what they need and what they value. Such relationships have helped us develop families of medicines, generation by generation. These include our hormone-based cancer treatments which have played a part in increasing the five year survival rate for women with breast cancer from under 70% 50 years ago to around 90% today.

Our collaborations are crucial to what we do and how we do it. Sharing skills, ideas and resources with our partners

increases the potential for successful innovation. For example, our programme of externalisation as well as internal project work has been at the heart of our efforts since 2006 to develop a world-class portfolio of diabetes medicines. From a position where we had no clinical projects, we now have a portfolio of medicines in development, including compounds we are developing in collaboration with Bristol-Myers Squibb. In 2009, this collaboration resulted in the approval of Onglyza™ for the treatment of Type 2 diabetes.

Maintaining a flow of innovation

We are committed to combining the best science with commercial excellence to deliver a flow of new medicines that meet patient needs and build value for our stakeholders. Breakthroughs in science are resulting in more new drug targets than ever before and globalisation is bringing millions more patients into the market for our medicines. In addition, ageing populations throughout the world mean an increased demand for healthcare.

Our focus is on identifying those research projects that offer the greatest chance of technical and commercial success. For example, by enhancing our predictive science capabilities on efficacy and safety, we can make decisions more quickly about which compounds to eliminate and which to progress as having the highest potential to become effective new medicines.

We are also strengthening other important capabilities, such as personalised healthcare, matching medicines to patient characteristics, often using diagnostic testing. This is good for the patient, good for the doctor and good for the people who pay for healthcare because it allows them to focus on those patients most likely to benefit and may also bring associated cost benefits.

Looking forward

Successful innovation and strong relationships have helped us deliver our goal of making a real difference to patient health. Looking ahead, our challenge is to ensure we continue that innovative drive: the drive both to explore new science and technology for opportunities to develop better medicines, and also to explore new ways of working together and with others.

AstraZeneca

www.astrazeneca.com

Climate change and global health: the time is now

From food insecurity to a decline in global health, climate change is having a severe knock-on effect for billions of people around the world

By James Orbinski, co-director, Global Health Diplomacy Program, and Jenilee Guebert, director of research, Global Health Diplomacy Program

In 2009, one in six of the world population went to bed hungry each night

According to the world's leading medical journal, *The Lancet*, "climate change is the biggest global health threat of the 21st century." The primary and secondary effects of climate change – extreme climatic events, population migration, changing patterns of disease, water and food insecurity, vulnerable shelter and human settlements – are putting the lives and wellbeing of billions of people at increased risk.

Catastrophe denotes a reversal of what is expected and marks the end of a story. It overturns the social frameworks on which we depend for security, through which we make sense of the world, through which we imagine possibility and a future with one another. Add to the climate change crisis the triple global crises of food, fuel and the economy, and the perfect storm may still come, where the wrong kind of leadership could well be catastrophic.

Today's crises are complex and interdependent, have unexpected ramifications and pose real threats – perhaps also to humans' viability as a civilization or even as a species. Risks and events seem to defy control, old answers to new questions no longer suffice and yesterday is no longer a baseline for tomorrow. If nothing else, they reveal the tenuousness of the myth-story that we have used to explain ourselves. It can seem, to quote Yeats, *The Second Coming* – writing in the aftermath of the First World War – that as "things fall apart, the Centre cannot hold".

There is little doubt today that catastrophe looms large in the popular imagination, and not without reason. The world is not as it was. In 2008, the World Health Organization's Commission on Social Determinants of Health argued that "social injustice is killing people on a grand scale". In 2009, more than 100 million were added to the already 1 billion people – more than one in six on the planet – who go to bed hungry every night. On 19 June 2009, the World Food Programme's Josette Sheeran said that "a hungry world is a dangerous world. Without food, people have only three options: they riot, they emigrate or they die."

Climate change is happening with greater speed and intensity than initially predicted. The West Nile virus, never seen before 2000 in Canada and the United States, has already killed more than 800 people and infected more than 21,000. The consequences of climate change for the global economy, political stability and poverty reduction efforts are uncertain at best. It is climate change that drives competition for access to water and arable land in Darfur, and that leads to war crimes, crimes against humanity and to slow-motion genocide. The consequences of climate change will certainly worsen as the number of cars, for example, increases from today's 700 million to the 3 billion predicted by the International Monetary Fund by 2050. A decade from now, crop yields in some parts of Africa are expected to drop by 50 per cent, and water stress could affect as many as 250 million Africans. Globally, not only will the number and severity of droughts, floods and hurricanes increase, but, as climate change worsens, wars over water and arable land will also worsen. A June 2009 report by researchers at Columbia University warned of the largest migration in human history, with up to 700 million climate migrants by 2050.

Human beings are capable of extraordinary and yet always imperfect things. The same kind of bold leadership that has been marshalled to respond to the international financial crisis is required for a sustainable human and humane future. A coherent effort to address the multi-issue challenges of global health, climate change, food security, and economic and financial stability is mission-critical to a sustainable human future. This will require effective governance.

The world is searching for new and authentic forms of governance that are both legitimate and effective – that will not only rise to those complex challenges, but will seize the opportunity for a more just, fair, equitable world. More broadly, effective governance is able to identify the interdependence of cause-and-effect factors that cross traditional policy silos in order to frame morally acceptable, integrating strategies that emerge from policy convergence – rather than support continued divergence. This is the governance challenge for both the G8 and the G20. The G8 first acknowledged the "unacceptable impacts" of climate change on health at its Denver Summit in 1997. At the G20 Pittsburgh Summit in 2009, the G20 noted the importance of combating climate change, even in the face of the global economic crisis. We have had the words. Now we need to see the action.

The political failure of the United Nations Copenhagen conference must not be repeated at Cancun at the end of 2010. In Huntsville and Toronto, the G8 and the G20 must prepare the way for a viable and effective post-Kyoto strategy to radically reduce carbon dioxide emissions and to mitigate the effects of climate change on health. This must also mean bringing the climate and health policy constituencies together to formulate a strategy for establishing global public health systems that can adequately deal with the adverse outcomes of climate change.

The leaders must commit to bold, transformative initiatives to fund the necessary policy actions. Revenues from the proposed global levy on banks could be used to fund global health and climate change policy initiatives. Alternatively, or simultaneously, a global currency transaction tax could be similarly used, and would, in the words of former French president Jacques Chirac, be a "tax on the benefits of globalization". A 2008 study produced by the North-South Institute found that, if properly implemented, the currency transaction tax could generate a minimum of $33 billion per annum for the Millennium Development Goals without affecting foreign exchange markets. In 2006, France and many other governments launched an airplane ticket tax, with proceeds now going toward an international drug purchase facility to assist the campaign against pandemics. In 2004, more than 100 countries endorsed a proposal urging a similar type of financing. The time has come for this small levy on foreign exchange transactions.

> "It is climate change that drives competition for access to water and arable land in Darfur, and that leads to war crimes, crimes against humanity"

The very real health effects of climate change are sparking a global public health movement. This offers unprecedented opportunities to address myriad issues such as inadequate and inequitable access to healthcare, unsafe water, poor community sanitation and hygiene, air pollution, industrial and workplace safety, housing and land-use management, and poor urban design and environmental design of transport systems.

Today, necessity must be the mother of invention. It is time for bold leadership. For the G8 and the G20, the time is now. There may not be another. ◆

BASF uses smart initiatives to address multiple Millennium Development Goals, including poverty reduction.

From the simple to the sublime

There are times when resolving the most complex challenge starts with the simplest initiatives.

The UN Millennium Development Goals seem to pose an intractable challenge and serve as a case in point. Each goal is global in scope and complex in its own right. Yet the challenges posed by these eight goals overlap in a rippling cascade of cause and effect. Nonetheless, BASF has found that successfully addressing a linchpin issue can resolve numerous problems at once, effectively creating a reverse domino effect of positive consequences.

Consider the failing literacy program in the Jabote community in the Brazilian Amazon. For three consecutive years, malaria, which is endemic to the region, prevented children from attending class. In August 2007 alone, there were 64 registered cases of malaria in a community of 172 residents. A year later, there were only seven registered cases and, within six months, the school had achieved its literacy objectives.

The difference was a collaborative effort between a local government agency and BASF. The partnership distributed **Interceptor**® long-lasting, insecticide-treated mosquito nets (LLIN), developed by BASF, that prevented the mosquito-borne disease from afflicting children as they slept. With disease at bay, the children's attendance improved and literacy increased.

For more information, visit www.publichealth.basf.com

As a result of a collaborative public-health initiative, BASF helped a community to move forward in its efforts to mitigate a devastating disease and improve primary education, a key step towards the larger but often neglected goal of poverty reduction. In effect, a single, focused initiative moved a community along the path to fulfilling four Millennium Development Goals: goal 1) Eradicate extreme poverty and hunger, goal 2) Achieve universal primary education, goal 4) Reduce child mortality and goal 6) Combat HIV/AIDS, malaria and other diseases.

BASF works hard to ensure that communities like Jabote are not alone in their efforts to improve their quality of life. Working with local leaders and global partners, BASF has established extensive insect-control programs throughout Africa, South/Central America and Asia, seeking to eradicate malaria, dengue fever and guinea worm, diseases that are central elements in the vicious circle of poverty. As a result of such efforts, guinea worm disease is on the brink of eradication.

Adopting the right scale is critical to such success stories. In Myanmar, dengue fever afflicts both rural and urban dwellers and, like malaria, is spread by a mosquito vector. In two Myanmar townships, 2,000 Dengue Prevention Assistants and an extensive educational campaign have helped curb the disease.

Using **Abate**® larvicide from BASF and armed only with a metal teaspoon, a plastic cup and two plastic bags, the assistants have prevented literally millions of insects from proliferating. These simple tools are appropriate for the project and the locale, avoiding unnecessary logistic and technical challenges. At the same time, using the indoor residual spray **Fendona**® insecticide, the assistants have protected people in their homes by effectively controlling mosquitoes 24 hours a day for several months. The net result is fewer sick people, a workforce better able to sustain itself, and healthier students prepared to learn and a brighter future.

Of course, the ultimate challenge is to ensure that the achievement of the Millennium Development Goals is a sustainable achievement. Here, too, BASF is looking ahead.

Working with with Professor Muhammad Yunus, Nobel Peace Prize Laureate and Managing Director of Grameen Bank, BASF established a joint venture called BASF Grameen Ltd. The goal of this social-business venture is to enable local entrepreneurs to sell public health products – initially, BASF **Interceptor** LLIN and dietary supplements. The result will be improved public health and sustainable business enterprises that foster community development and capacity, all critical pillars in the elimination of poverty.

The result will be improved public health and sustainable business enterprises that foster community development and capacity, all critical pillars in the elimination of poverty.

BASF recognizes that social responsibility is central to its own long-term growth. And it has been recognized, in turn, for its social leadership. For the ninth consecutive year, BASF was included in the Dow Jones Sustainability World Index, and in the Global 100 listing of the world's most sustainable companies for the third year running. For BASF, these accolades are not an end in themselves, but a validation of its commitment to achieving the eight UN Millennium Development Goals.

BASF
The Chemical Company

Always read and follow label directions.

Development innovation: Grand Challenges Canada

Science, finance and innovation – Grand Challenges Canada's answer to a better world

By Peter A. Singer, chief executive officer, Grand Challenges Canada, director, McLaughlin-Rotman Centre for Global Health, and David Crane, consultant

Fighting disease, improving health and meeting the Millennium Development Goals (MDGs) in the developing world, where some 9 million children die each year before their fifth birthday, poses an enormous challenge. But there is also great potential to find solutions by giving science and innovation a major new role in international development assistance.

This is what Grand Challenges Canada is trying to do. It represents a new way to help create a better world, using wealth, knowledge and human energy to find new solutions to the costly and debilitating diseases that destroy lives, weaken economies and impose costly burdens in the developing world.

Grand Challenges Canada, a new not-for-profit corporation launched by Jim Flaherty, Canada's minister of finance, on 3 May 2010, is funded at $225 million over five years out of the Government of Canada's Development Innovation Fund, which was unveiled in the 2008 budget. As the budget stated: "Scientific innovation has the potential to improve the lives of the world's poor. For example, new vaccines and cures could save millions of lives lost to tropical diseases."

Grand Challenges Canada, which is working with the International Development Research Centre and the Canadian Institutes of Health Research and based at the McLaughlin-Rotman Centre for Global Health, is the instrument that will deliver this commitment of

Canada to the people of the developing world. It operates independently but is linked to Canada's international development assistance strategy.

This new organisation aims to improve the health and wellbeing of people in the developing world not only by pursuing good science, but also by focusing on ways to effectively commercialise, distribute and implement new scientific solutions to disease. It is not enough to achieve successful science to combat malaria and other diseases. All the other necessary ingredients for effective results must be delivered – how to commercialise scientific results into marketable products, how to ensure that health systems take up these solutions, and how to be certain that these new technologies will actually reach those who need them.

This is integrated innovation, meaning that all of the necessary steps – from the lab to the village – must be considered if there is to be a real difference to human health and improvement in the life chances in the developing world. Integrated innovation is not only about scientific and technological innovation, but also business and social innovation, which are essential to delivering not simply inventions, but solutions and results as well.

Grand Challenges Canada is also strongly committed to working with scientists, policymakers, entrepreneurs and health agencies in the developing world. The goal is to draw on the talents in the South to develop solutions to their own health problems. Innovators in the developing world have a rich understanding of the challenges they face and the conditions and culture that will determine success. They also have great potential for innovative solutions. That is why the Scientific Advisory Board of Grand Challenges Canada has strong participation from the developing world.

Canada's finance minister Jim Flaherty receives a microscope from Grand Challenges Canada CEO Peter Singer after announcing the Government of Canada's support to the programme

> "Innovation saves lives, and domestic innovation is how developing countries escape poverty"

By working in partnership, the organisation's goal is to help energise that potential. In this way, by developing local capabilities and solutions, dependency can be reduced and a path out of poverty can be charted.

Five grand challenges will be identified and supported during the next five years. A grand challenge is one that presents a big barrier that, if overcome, would help solve an urgent health problem in the developing world with the likelihood of global impact through widespread implementation.

In fact, the first grand challenge has already been identified: to develop point-of-care diagnostics that can significantly improve the ability of health workers to rapidly, accurately and affordably identify diseases that individuals may have. In 2006, *Nature* magazine reported that more than 100,000 deaths a year from malaria could be prevented through point-of-care diagnostics and 365 million unnecessary treatments for the disease could be avoided. These unnecessary treatments represent a waste of scarce medical resources and also build drug resistance in patients.

Grand Challenges Canada will be working with the Bill and Melinda Gates Foundation on its first endeavour. This grand challenge, like the others the organisation will pursue, will provide an opportunity for close collaboration between scientists, research institutes and companies in the South and North.

Grand Challenges Canada is an example of how the rich and fortunate countries can play a useful role in the world, in this case by bringing innovation into a central place in development assistance. Innovation – which means doing valued things better – can bring some hope that a decade from now development dollars will not be doing the same thing they are doing today. Innovation saves lives, and domestic innovation is how developing countries escape poverty.

The focus today is on grand challenges in health. But it is clear that innovation has a much greater role to play in creating a more sustainable and equitable world.

With global population projected to reach about 9 billion people in 2050, compared to about 6.7 billion people today, and with the legitimate desire of the developing world for a much higher standard of living, the world will face significant challenges. Health is one. But others include the transition to a low-carbon energy system to avert the harsh consequences of climate change, access to adequate water for human consumption and agriculture, and advances in agricultural productivity to help feed a much larger global population.

In all of these areas, innovation has an essential role to play. Grand Challenges Canada offers a potential model for bringing science and integrated innovation into international development assistance to address many of the grand challenges the world will face in the 21st century. Our hope is that other G20 countries will see the potential of this approach, with different countries from around the world cooperating on specific grand challenges. ◆

In Zambia, young mother Mimi Matibenga was very frightened when her 1-year-old son, Layton, caught malaria. Initially he was given chloroquine, but failed to recover. It was only when he was given the ACT* artemether-lumefantrine that the danger finally passed and he became well again.

This was in 2003, the year that Zambia adopted ACTs as first-line treatment for malaria. Many countries have since followed suit. Zambia is one of the countries that has reported a dramatic reduction in malaria mortality (>60%).[1] The right treatment at the right time is a key success factor in the fight against malaria, in addition to protecting from mosquito bites by sleeping under insecticide-treated bed nets and, where applicable, the use of indoor residual spraying.

*Artemisinin-based combination therapy

1. Chizema-Kawesha E, Mukonka V, Mwanza M *et al.* World Health Organization, Zambia 19–23 January 2009. Impact Evaluation Mission Report.

NOVARTIS

Leading the fight against malaria

Novartis is the leading pharmaceutical partner in the fight against malaria, and has provided more than 320 million treatments without profit to the public sector in malaria-endemic countries since 2001. Novartis is committed to supporting educational initiatives for healthcare workers and their communities, and also hosts biannual Best Practice Sharing Workshops in Africa for National Malaria Control Programme managers.

"Facilitating the exchange of experience between NMCP Heads is essential."

Participant at the 8th Novartis-sponsored NMCP Best Practice Sharing Workshop, Rwanda, 2010

Ahead of a call from WHO for child-friendly medicines, Novartis, working in partnership with Medicines for Malaria Venture (MMV), developed an antimalarial formulation specifically designed for infants and young children.

"The dispersible formulation is easy to administer, gives compliance and effective treatment; and hence facilitates adoption in malaria control programmes."

Abdulla S, *et al. Lancet* 2008; 372: 1819–1827

Novartis Pharma AG, Basle, Switzerland

Health is everybody's business

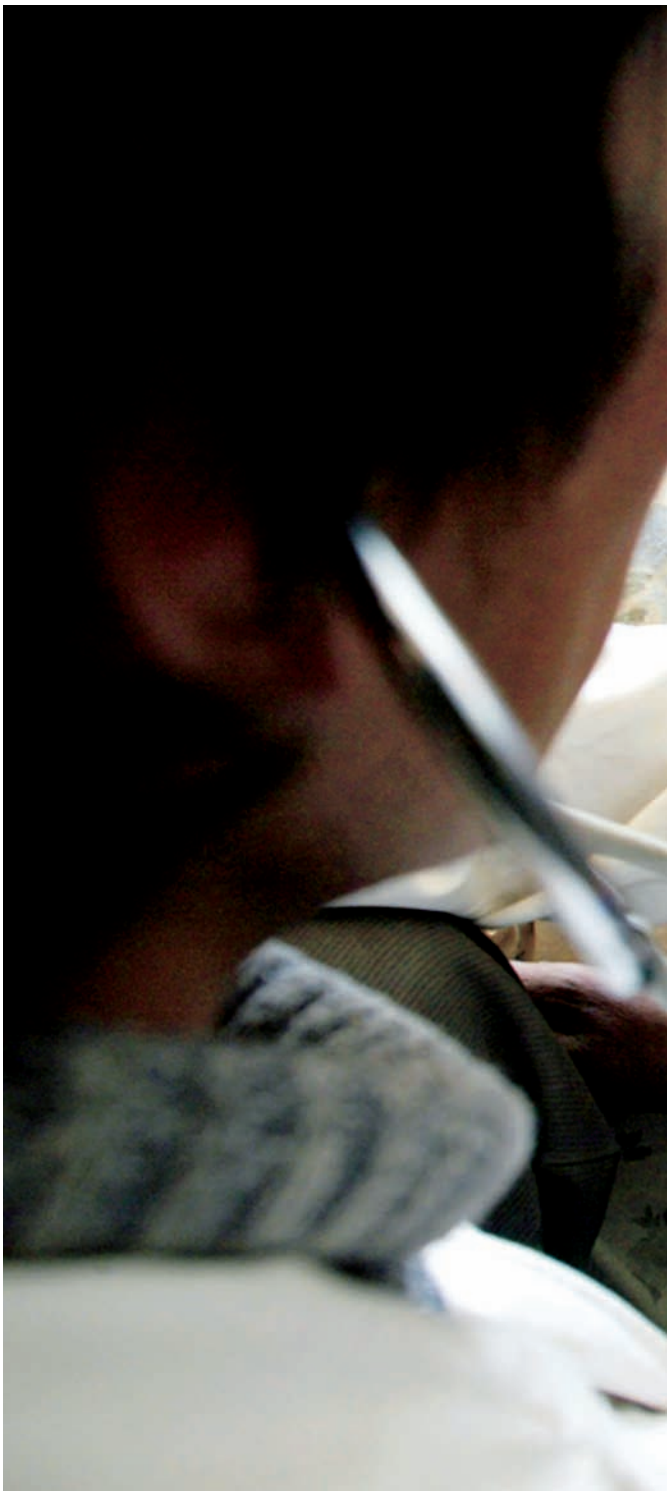
There is much to do to achieve the Millennium Development Goals for health. Both the public and private sectors can make significant contributions

By Jeffrey L. Sturchio, president and chief executive officer, Global Health Council

The private sector is directly affected by trends in global health. It also plays a potentially important role in developing sustainable solutions to the challenges facing the world. Involving the private sector in the global health agenda assists international institutions in accomplishing the goal of improving the health of people living in the least developed countries and emerging markets. What are the best contributions the business community can make to promoting global health?

First, why should the private sector care about global health? As noted in *Health Is Global: A UK Government Strategy for 2008-13*, "improving the health of the world's population can make a strong contribution towards promoting a sustainable and prosperous global economy– and reduce poverty and inequality". Because "disease is destabilising", as Robert Mallett once aptly observed, addressing global health challenges is also in business's own interests. For companies operating in countries with a high burden of disease, the state of health affects employee productivity, expenses of training and development, healthcare costs, the extent and purchasing power of consumer markets, and the infrastructure in which businesses operate. Weak health systems and scarce human resources in health impose costs on multinational corporations. As social partners in these countries, the private sector has a clear interest in working to improve global health – for the benefit of employees and their families, their business partners, and the communities where they live and work.

From the public sector point of view, is there value in business engagement in global health? The answer is clearly yes. The challenges of ill health and poverty are so complex and resource intensive that states and other stakeholders cannot tackle them on their own. Despite progress in some areas, the global community faces a steep hill to climb in achieving the Millennium Development Goals (MDGs) by 2015. Industry can help with the health-related MDGs directly – by providing healthcare for employees and their families, by supporting community-based initiatives, or by helping to enhance public sector programmes with their unique expertise in marketing, communications, distribution and logistics. Companies



can also help by working in global partnerships to bring complementary resources and expertise to bear on global health problems. The private sector has a common interest with the public sector in global health matters – in stopping avoidable illness and death and in improving living conditions for individuals and populations – which will promote economic growth and development, with obvious benefits for the conditions under which firms operate.

As the G8 and G20 leaders converge on Canada for their meetings in June 2010, it is appropriate to reflect on the progress made on their commitments to health, particularly maternal and children's health, which Canadian prime minister Stephen Harper has pledged to make a priority of the G8 agenda in Muskoka. This focus

is not surprising – nowhere is the potential benefit in terms of lives saved more evident than in the case of MDGs 4 and 5, dealing with under-five child mortality and maternal mortality. A child dies unnecessarily every few seconds around the world. Two or three women die every minute from complications during pregnancy or childbirth, 99 per cent of them are in developing countries. The disparity in outcomes is striking and unacceptable: a woman in Niger faces a one-in-seven chance of dying in her lifetime from complications during pregnancy or childbirth, while her counterpart born in Sweden faces only a one-in-17,400 chance of the same outcome.

There is encouraging momentum to implement programmes to improve maternal and children's health outcomes. Thanks to an active global coalition – the Partnership for Maternal, Newborn and Child Health and the Maternal Mortality Campaign, among others – a clear consensus exists on what needs to be done to ensure that "every pregnancy is wanted, every birth safe and every newborn and child is healthy" by 2015. In a nutshell, progress requires political leadership and community mobilisation, effective health systems that can deliver a package of key interventions along the continuum of care, the removal of barriers to care (eg, user fees), skilled and motivated health workers in the right place at the right time and accountability for results throughout the system.

Increasingly, companies outside the health sector are doing more to enhance global health. Philips partnered with the Chinese Red Cross Foundation to launch its Rural Healthcare programme, educating 300 village doctors in Beijing, Shanghai and Guangzhou

Thanks to efforts such as Countdown to 2015, it is possible to measure progress toward MDGs 4 and 5 (to reduce by two thirds the mortality rate of children under five and to reduce by three quarters the maternal

Grolsch is owned by SABMiller, which is one of the many companies already involved in schemes contributing to the improvement of global health

mortality rate, both by 2015). And the focused efforts of the High Level Taskforce on Innovative International Financing for Health Systems (led by Gordon Brown and Robert Zoellick) have produced pledges of an additional $5.3 billion for maternal and child health. However, in the months since the statement of support for 'Healthy Women, Healthy Children: Investing in Our Common Future' at the United Nations General Assembly in September 2009, there has been slow progress toward the additional $30 billion that the experts estimate is needed to meet MDGs 4 and 5. While they have certainly 'talked the talk', the G8 and G20 leaders have not yet 'walked the walk'.

To bridge the gap between the best intentions and effective action, the G8 and the G20 should bring in civil society – including non-governmental organisations, universities and the private sector – as true partners, rather than seeing them merely as supplicants or potential donors. This is fully consistent with new trends in global governance suited to an increasingly interdependent world in which transnational networks of non-state actors play an important role in shaping and delivering the policy agenda.

Businesses are already beginning to work along these lines, and public-private partnerships are important catalysts for action. Successful examples abound, as corporations see and act on opportunities to create shared value. There are more and more efforts by businesses outside the health sector as well, with examples across the globe. Companies such as Abbott, Anglo-American, BD, Bristol-Myers Squibb, Coca-Cola, Chevron, Exxon Mobil, General Electric, Johnson & Johnson, Pfizer, Philips, Procter & Gamble, Merck & Co., Inc., Novart, SABMiller, Unilever and ViiV Healthcare, to name just a few, are engaging with partners in government and civil society on issues ranging from the prevention of rotavirus infection or mother-to-child transmission of HIV, to improving health system infrastructure, to working at the community level to ensure that women do not die unnecessarily from childbirth or its complications.

By doing so in a manner that builds on country ownership and helps to develop country capacity, the private sector indeed has an important role to play in improving global health. Working together, we can make a real difference by bringing together the pieces of a complex puzzle in tackling global health challenges – with important and measurable improvements in the health and lives of people living in poverty around the world. ◆

G8 – say goodbye to malaria

Global decision-makers looking for solutions to the many challenges the world is facing today should remain focused on a historic opportunity. Enormous progress is being made towards the possibility of eliminating malaria, a disease that has thwarted human development for centuries. Whether malaria goes the way of smallpox, or continues to slow economic and human progress indefinitely, however, will depend in large part on the resources that are committed over the next decade to the current global effort to end the disease.

Transmitted by a simple mosquito bite, malaria plagued Europe and the US as recently as 60 years ago. Targeted public health measures were crucial to eliminating the disease and helping those regions achieve growth, prosperity, stability and better life quality.

Controlling malaria today would go a long way towards achieving the same benefits in 108 countries in Asia, Latin America and Africa – home to 3.3 billion people still at risk of the disease.

Increased international funding over the last decade, mainly directed through the Global Fund at Africa, where the majority of global malaria deaths occur, has allowed widespread application of effective measures and has brought about heartening results. Through mass distribution of long-lasting, insecticide-treated bed nets, targeted indoor spraying, effective malaria treatment, and training of community-level health workers, countries such as Eritrea, Ethiopia, Equatorial Guinea, Rwanda, Swaziland, and Zambia have slashed malaria cases and deaths by half.

A continued donor focus on malaria is particularly crucial at a time when malaria-endemic countries, together with the Roll Back Malaria Partnership, are mobilizing unprecedented efforts to provide universal access to prevention, diagnosis and treatment by the end of 2010, as called for by the UN Secretary-General Ban-Ki Moon.

Investing in malaria-control interventions today can produce broad and significant gains in multiple areas of health and human development.

First, malaria places an enormous burden on Africa's struggling health systems, accounting for 40 percent of health spending in some endemic countries. Reducing malaria could significantly strengthen efforts to build and sustain functioning systems to address the multiple health challenges that slow Africa's development.

Second, malaria keeps children out of school, keeps parents out of work, and is a major cause of child and maternal mortality. Recent studies have demonstrated a direct and rapid correlation between increases in international development aid invested in malaria control, and dramatic reductions in maternal and child mortality.

Third, African countries, whose economies loose more than US$ 12 billion every year, cannot make lasting strides towards economic or social prosperity without also making significant progress towards eliminating this life-draining disease from the continent.

All of this suggests that reducing the impact of malaria would significantly propel efforts to reach the Millennium Development Goals. These include not only the goal of significantly reducing the disease itself, but also goals related to women's and children's health, access to education, and the reduction of hunger and extreme poverty.

In the first decade of RBM, there has been unprecedented increase in global financing for malaria control, particularly in sub-Saharan Africa. Malaria-control funding commitments have increased steadily each year from 2003 (approx. US$ 100 million) through 2009 (approx. US$ 1.6 billion)

Achieving this vision, however, requires continued political commitment and financing. While international funding for malaria has increased twenty-fold in the past decade, in 2010, it is hovering under US$ 2 billion, only a third of the US$ 5-6 billion needed annually.

Today, more than ever, political leadership is needed to sustain and multiply the progress that has been made in malaria control in the past few years.

Among the many issues leaders will consider in the coming months, making global progress against malaria is not only an important one – it is also among the most straightforward. The impact of the disease is clear. The tools to control it are in hand. The benefits of taking action are evident. What is needed now is sustained focus to make the centuries-old goal of malaria elimination a reality.

By Professor Awa Marie Coll-Seck, Executive Director, Roll Back Malaria Partnership

ROLL BACK MALARIA

www.rollbackmalaria.org

Lymphatic Filariasis elimination: a public health success and development opportunity

A global public health effort that is:

- Expanding rapidly to achieve global reach.
- Addressing the health of a billion of the poorest.
- Supporting the achievement of several MDGs.
- Achieving elimination goals and strengthening health systems.
- Learning from experience and building on scientific progress.
- Building a solid partnership through representation and constituency building.

Lymphatic Filariasis (LF, often called elephantiasis) is recognised by the World Health Organization (WHO) as one of the world's most disabling and stigmatising diseases. The disease is caused by a parasitic worm infection spread by mosquitoes that can lead to massive swelling of limbs, breasts and genitals. Considered a neglected tropical disease, LF almost exclusively affects the world's poorest people. The disease is found is more than 80 countries throughout the global tropics. Some 120 million people are infected with around one billion at risk of acquiring the infection.

In 1997, the World Health Assembly passed Resolution 50.29 calling for the elimination of LF as a public health problem. This resolution was based on research findings which showed that a combination of two medicines given annually could interrupt transmission between humans and mosquitoes. The drugs used were a co-administration of albendazole and ivermectin for Africa, or albendazole and diethylcarbamazine (DEC) outside Africa.

Following the World Health Assembly resolution, two key events provided momentum to the global elimination effort. The first was the commitment of GlaxoSmithKline (GSK) to donate the drug albendazole to WHO for use by every country that needs it until LF is eliminated. The GSK donation announcement was followed by Merck & Co. Inc., with a commitment to expand the Mectizan Donation Program established for the control of river blindness (onchocerciasis) in 1988 to cover countries that had both LF and river blindness.

Mass drug administration (MDA) of annual treatments has expanded rapidly with spectacular results. WHO reports that over 50 countries have active programmes and some 497 million people were treated in 2008. The total number of treatments delivered now exceeds 2 billion. Several countries and regions — Egypt, Zanzibar, Sri Lanka, Togo, Vanuatu and other Pacific Island nations — have now completed MDA and moved into a post MDA surveillance phase. In the meantime, evaluation of programmes in China, Republic of Korea, Suriname, Costa Rica, Trinidad and Tobago and the Solomon Islands show that previous interventions have successfully reached a stage where elimination has been permanently achieved.

Building a global partnership

During the early part of the LF movement it was recognised that there was a need to create a partnership of the different constituencies interested in the elimination of the disease. This resulted in the formation of the Global Alliance to Eliminate Lymphatic Filariasis (GAELF) in 2000. At the first meeting in Santiago de Compostela, Spanish representatives from endemic countries, international agencies, non governmental development organisations (NGDOs), academia, bilateral donors and the pharmaceutical industry donors endorsed the WHO plan for the first phase of the programme.

The Alliance has met every two years and created a loose governance structure which facilitates representation of all interested constituencies. The Alliance Secretariat, supported by the UK Department for International Development and based in the Liverpool Centre for Neglected Tropical Diseases, works closely with WHO and through an Executive Group to run Alliance affairs on behalf of all partners.

Helping LF patients and preventing disability

A highly important aspect of the Global Programme is the need to address the effects of the disease on those who currently show symptoms. In addition to the strategy of mass drug

administration which interrupts transmission and hence prevents further infection and symptoms, those disabled by elephantiasis and genital deformity require supplementary care ranging from simple washing and hygiene to surgery for hydrocele. In addition, there is some evidence indicating that drugs can alleviate or reduce disease symptoms including the frequency of filarial fevers. Financial and other resource constraints currently constrain the expansion of this component of the programme.

Health impact and economic benefits

Detailed analysis show the overall health benefits since the programme began are remarkable and the annual costs of programme delivery are modest, in light of what even the least developed countries can afford. Costs vary, but in general are less than US$1 per person with costs as low as US$0.10 in Burkina Faso.

A recent analysis of the health impact of the Global Programme indicates that the 1.9 billion treatments delivered to the end of 2007 resulted in some 56.6 million children having been treated with albendazole and 66 million babies having been born into areas protected from LF transmission as a result of the ongoing MDA programmes. Around 560 million individuals have been treated for LF in endemic areas preventing in future 9 million cases of hydrocoele, 5 million cases of elephantiasis and 27 million cases of sub-clinical lymphatic damage.

Worldwide, hundreds of millions of people are infected with intestinal parasites. In addition to playing a role in fighting LF, albendazole and ivermectin can prevent the ravages of intestinal parasites as well. So far over 310 million treatments of albendazole were delivered to women of child bearing age and school age children, providing relief from the consequences of intestinal parasites that include malnutrition, maternal anaemia, low birth weight in newborns, excess infant mortality, stunted growth and development, and diminished cognitive performance.

The LF programme has a much wider reach, therefore, than its focus on interrupting the transmission of one of the most disabling diseases. The programme makes a major contribution to the progress of other Millennium Develop Goals (MDGs) – children's health, maternal health, education, partnership as well as the other diseases of MDG 6.

A public health opportunity

Few interventions in the area of health have this reach and are so cost effective. The LF programme has been described as a best health buy in global health.

What has emerged is that there is country commitment to the programme, that the intervention has wider health benefits in relation to the MDGs, that LF is the key platform for the broader Neglected Tropical Disease agenda as it emerges increasingly as a global health priority, and that it has been the programme with the greatest reach over the past decade in terms of delivering quality drugs to poor people.

With a goal of global elimination of LF by the year 2020, the programme is at the half way point. A future free of LF will reduce poverty and bring better health to poor people, prevent disability, strengthen health systems and build partnerships. The programme is an unheralded global health success story based on country ownership, loose governance of a representative partnership, well monitored programmes and ongoing science related to programmatic needs.

To build on this success now is the time for more donors to join the fight to eliminate LF by 2020 and spare future generations from this disease.

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