Health, Nutrition, and Population Development Goals

Measuring Progress Using the Poverty Reduction Strategy Framework

Report of a World Bank Consultation
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As this report is being published, half of the available time for achieving the Millennium Development Goals has passed. The challenges for achieving the goals in the remaining years are immense: many countries are currently not making enough progress to reach the child survival, maternal health, and infectious diseases targets by 2015. At the current level of progress, none of the international health goals will be achieved at the global level.

In November 2001, the Health, Nutrition, and Population unit of the Bank’s Human Development Network convened a two-day consultation of technical specialists to assess what is known about the determinants of the development goals in health. The group identified key interventions that, when implemented, can dramatically reduce child mortality, improve reproductive health, and halt the spread of diseases such as HIV/AIDS, malaria, and tuberculosis. They include use of insecticide-treated bednets to prevent malaria, exclusive breastfeeding of infants, immunization to prevent measles, and access to skilled birth attendants. In all of these efforts, we must be judged by result. The consultation identified key measures of progress towards the Millennium Development Goals that will help us determine whether we are succeeding in this challenge.

We have learned from the poverty reduction strategies prepared by low-income countries that we can only achieve enough progress if we focus our interventions where the need is greatest: the poorest groups in society, which suffer from the highest burdens of disease. The work of the consultation has provided an approach for making progress towards the goals, while keeping the focus on the poor.

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This report summarizes the presentations and discussions at a consultation on November 28-29, 2001, at the World Bank headquarters in Washington, D.C. The consultation was organized by members of the Health, Nutrition, and Population unit of the Human Development Department; the consultation report was prepared by Mariam Claeson and Eduard Bos. Important contributions were made by the presenters and discussants at the meeting: Carla Abouzahr, Chris Dye, Hans Troedsson, Jim Tulloch (WHO); Rick Steketee (CDC); Ties Boerma (MEASURE); Martin Vaessen (Macro DHS); Carlos Castillo-Salgado (PAHO); Gareth Jones (UNICEF); Al Bartlett, Philip Harvey (USAID); Hans Rosling (Karolinska Institutet); and by the following World Bank staff: Harold Alderman, Jayshree Balachandar, Enis Baris, Flavia Bustreo, Isabella Danel, Shanta Devarajan, Leslie Elder, Birger Fredriksen, Peter Heywood, Ruth Levine, Jerker Liljestrand, Chris Lovelace, Elizabeth Lule, Margaret Miller, Ok Pannenborg, Alex Preker, Jo Ritzen, Susan Stout, Agnes Soucat, Denise Vaillancourt, Adam Wagstaff, Diana Weil, and Abdo Yazbeck. Charito Hain and Merced Doroteo provided assistance in preparing the materials and made the conference arrangements. The final report was written by Rosemarie Philips, and designed and formatted by Nita Congress. Cover design is by Roberto Quiroga.
Introduction

In November 2001, the World Bank convened a consultation of some 50 operational and technical specialists from U.N. agencies, the World Bank, and other organizations and institutions to examine which indicators are most appropriate for measuring progress on health, nutrition, and population (HNP) development goals. In particular, these experts focused on the internationally agreed Millennium Development Goals (MDGs); they used the Bank’s Poverty Reduction Strategy Papers (PRSP) framework as an organizing principle to examine what indicators can best measure progress in meeting HNP goals.

The objectives of the consultation were to identify key determinants of HNP goals that can in fact be measured regularly and reliably, and to integrate monitoring of HNP goals and measuring of outcomes with the Bank’s and developing countries’ ongoing work on poverty reduction. Specifically, the consultation set out to:

◆ review and reach agreement on the key determinants of the health, nutrition, and population Millennium Development goals;
◆ examine the usefulness of the PRSP framework as a common approach to measuring progress towards HNP goals; and
◆ assess existing monitoring and evaluation tools and products and reach agreement on a limited number of measurable indicators.

The Development Goals

The Millennium Development Goals are a set of internationally agreed goals that countries and institutions have committed to trying to reach during the first part of the 21st century. They are ambitious and, for some countries, quite reachable. For other countries, they may represent a long-term target for which less ambitious interim targets need to be determined. The goals have grown out of a series of agreements and resolutions reached at numerous international conferences throughout the 1990s, and were most recently formulated at the Millennium Summit in September 2000, at which leaders from every country met to discuss some of the world’s most pressing problems. The MDGs represent a broadly shared agreement and have been commonly accepted as a framework for measuring development progress.
There are eight broadly stated Millennium Development Goals, with 18 specific targets (see Annex A). Six targets are in—or directly related to—the health, nutrition, and population sector:

- Reduce poverty.
- Reduce malnutrition.
- Reduce infant and child mortality.
- Reduce maternal mortality and improve access to reproductive health services.
- Stop, then reverse, the spread of HIV/AIDS.
- Stop, then reverse, the spread of tuberculosis, malaria, and other major diseases.

Of course, success in many of the other goals will have positive HNP impacts, just as progress in health, nutrition, and population will help further the goals in other sectors. But these six specific targets are central to the health, nutrition, and population sector.

The World Bank has made achievement of the Millennium Development Goals a central focus of its activities. But commitment must not stop with an agreement on goals. Rather, the commitment to global and national targets must be translated into achievable and measurable indicators at national and sub-national levels. Attention must be given to the interventions and actions that determine whether the goals will be achieved as well as to determining whether progress is being made. The development goals consultation set out to examine these issues in the health, nutrition, and population sector in the context of the Bank’s overall focus on poverty reduction.

**Poverty Reduction Strategy Papers**

In December 1999, the World Bank and the International Monetary Fund approved a new approach to the challenge of reducing poverty in low-income countries. Countries develop Poverty Reduction Strategy Papers through a participatory process involving not only various government agencies but also civil society and development partners. These papers describe a country’s macroeconomic, structural, and social policies to promote growth and reduce poverty.

Six core principles underlie the development and implementation of poverty reduction strategies. The strategies should be:
◆ **country-driven**, involving broad-based participation by civil society (especially the poor themselves) and the private sector in all operational steps;
◆ **results-oriented** and focused on outcomes that will benefit the poor;
◆ **comprehensive** in recognizing the multidimensional nature of poverty;
◆ **prioritized** so that implementation is feasible in both fiscal and institutional terms;
◆ **partnership-oriented**, involving bilateral, multilateral, and nongovernmental development partners; and
◆ based on a **long-term perspective** for poverty reduction.

There is no single format for developing a country’s PRSP; rather, the process should reflect a country’s individual circumstances and characteristics. However, three key steps characterize the development of effective strategies.

◆ **Develop a comprehensive understanding of poverty and its causes.** Beginning with an understanding of who the poor are, where they live, and their main barriers to moving out of poverty is key. Further, the multidimensional nature of poverty (low income, poor health and education, gender, insecurity, powerlessness, etc.) needs to be carefully considered.

◆ **Choose the mix of public actions that have the highest impact on poverty reduction.** A solid understanding of the nature and causes of poverty makes it possible to select and prioritize macroeconomic, structural, and social policies based on their expected impact on achieving a country’s poverty targets.

◆ **Select and track outcome indicators.** An appropriate framework for selecting and tracking measures to indicate progress in reducing poverty is needed to test the effect of policies and programs and then adjust as needed.

The PRSP approach is gaining acceptance, and the Bank is now in the process of helping some 60 countries develop either interim or final PRSPs. Without an intense focus on poverty reduction, the current rate of progress is too slow to improve the lives of the poor significantly in the next 15 years. Unless current trends are reversed, the Millennium Development Goals—including reducing by half the proportion of people living in extreme poverty (less than US$1 per day) by 2015—will not be met. The health, nutrition, and population sector targets are unlikely to be achieved if they do not include a focus on poor people, who almost always have worse health than the rest of the population.
The Consultation

The consultation used the PRSP framework to examine the best means of measuring progress towards the HNP Millennium Development Goals. It examined what impact various determinants actually have on the desired outcomes. It looked most specifically at household and community behaviors and health services, but also discussed the impact on health of other sectors and government policies and actions (Figure 1).

The goal of the consultation was to develop a common list of HNP indicators and a common framework for translating the commitment to health targets into achievable and measurable indicators. The PRSP approach keeps the need for poverty reduction front and center.

This volume summarizes the results of that meeting, looking first at the poverty reduction strategy framework and the evidence for what works in addressing each of the HNP Millennium Development Goals. It presents indicators recommended by consultation working groups for measuring progress towards the goals and discusses other ongoing efforts to measure health progress.
Poverty Reduction and the Health Sector

Poverty is both a consequence and a cause of ill health. Ill health, malnutrition, and high fertility are often the reasons why households end up in poverty or sink even further into poverty if they are already poor. The illness of a breadwinner results in lost income as well as unanticipated health care costs. High fertility not only reduces the available resources for other household members, but also reduces the earnings opportunities for women. Malnutrition contributes to ill health and has serious consequences for both mothers and children.

But poverty is also a cause of ill health. Poor countries—and poor people within countries—experience multiple conditions that combine together to cause greater levels of ill health than in those who are better off. The poor lack the financial resources to pay for health services, food, clean water, sanitation, and other key inputs that help to produce good health. In addition, the health facilities serving the poor are often dilapidated, inaccessible, lacking in even basic medicines, and poorly run. Poor people are also disadvantaged by a lack of knowledge about prevention and when to seek health care. They tend to live in communities that have weak institutions and social norms that are not conducive to good health. In short, poor people are caught in a vicious circle—their poverty breeds ill health, which in turn conspires to keep them poor (Figure 2).

The PRSP Framework

Health is a main goal of development and can make a huge difference in the lives of the poor. Achieving health requires action at a number of levels. It requires government action to set the national budget allocated for health and to put in place policies to ensure that the health resources reach poor households. Figure 2 illustrates the linkages between poor health outcomes and diminished income, highlighting the importance of addressing health as a key component of poverty reduction strategies.
people. It requires action at the health system level to put in place reforms and incentives to get the system to work better for poor people. And it requires action at the micro or service delivery level to implement specific activities to reach poor people.

The process of developing Poverty Reduction Strategy Papers offers an opportunity to bring together these three levels for a common goal. According to the PRSP analysis of the health, nutrition, and population sector, health outcomes and impoverishment are the result of interactions among households, communities, health services, other sectors, and government (Figure 3).

- At the **household** level, health results both from behaviors and risk factors (such as food consumption, sanitary and sexual practices, the use of curative and preventive health services) and from available resources (human, physical, and financial).
- At the **community** level, values and norms influence the use and availability of services, and community involvement can have a large impact on the quality and accountability of health services.
- At the **health services** level, access to services and the cost, availability, and quality of drugs, vaccines, and other key inputs are important determinants of health outcomes.
- **Other parts of the health sector** (e.g., financing) and **other sectors** (education, water and sanitation, transportation, energy, and other infrastructure) are frequently key to achieving health outcomes.
- Finally, **government policies and actions** have a major role to play in financing and regulating health services and other sectors that affect health services.
The PRSP process can be used both to develop policies and to evaluate their effectiveness. Working from left to right in Figure 3 involves diagnostics, analysis, and priority setting, ending with policies and actions on the right-hand side. Working from right to left involves monitoring and evaluating the effects of those policies and actions and helps to make clear the intervening steps between them and improved outcomes. The process of producing the PRSP for health, nutrition, and population creates a means of identifying desired outcomes, actions to achieve those outcomes, and what is required to produce the actions. The process is as important as the final document—the PRSP—in gaining consensus on the key problems and how to address them, what risks have to be managed to succeed, and what needs to be measured to monitor and evaluate performance.

**The Lifecycle Approach to Health Outcomes**

Health as a development goal embraces health status, nutritional status, morbidity, fertility management, disability, and mortality. It includes the health of young children, older children, and adults. It also includes reproductive health—the health of women during and after pregnancy, as well as unwanted pregnancies.

A useful means of assessing the health of individuals and communities is to focus on the lifecycle, which starts in pregnancy and moves through birth, infancy, childhood, the school years, adolescence, adulthood, and aging (Figure 4). In the reproductive period, the lifecycle comes full circle, with pregnancy and the birth of a new generation. Use of the lifecycle highlights four principles.

- Health interventions have a cumulative impact—the benefit, nature, and cost of interventions at a later age is partially dependent on earlier interventions.
- To sustain improvements, priorities must be set at several points across the lifecycle.
- Interventions in one generation bring benefits to successive generations; in particular, good prenatal care and programs that help teenage girls to delay pregnancy give babies a healthier start in life.
- Identifying key risks for families and the associated gaps in the health system helps identify interventions that can be targeted to break the cycle of poverty and ill health.

Some stages in the lifecycle pose greater risk to health than others, and interventions in some stages have more long-term payback than others. An important part of the PRSP process is identifying those interventions that can make the greatest
Looked at in the context of the lifecycle and poverty reduction, the HNP Millennium Development Goals fit well into broader development priorities. Interventions to meet the goals are likely to improve health at various stages of the lifecycle. The HNP goals are all central to the HNP sector of poor countries. They are interrelated and influenced by many factors within and outside the health sector. Meeting them will not just improve the health of individuals, communities, and nations but will also contribute to development more broadly.
Child Mortality

Reduce the mortality rate of children under five by two-thirds between 1990 and 2015 (Target 5)

Over 10 million children die annually in the developing world—the vast majority from causes preventable in the developed world through a combination of good nutrition, care, and medical treatment. That number, though appalling, represents a significant improvement in recent years. Mortality among children under five years of age has been declining at an average rate of about 1 percent per year for the last 35 years (Figure 5). The decline has occurred even as the number of births worldwide has increased, resistance to antibiotics and anti-malarial drugs has increased, and the HIV/AIDS pandemic has spread.

Although child deaths have been declining in every region, progress has not occurred evenly, and gaps continue to exist both across and within regions. In a number of countries, infant and child mortality rates are increasing (Figure 6). In 1998, more than 50 countries had child mortality rates greater than 100 deaths per 1,000 live births. Twelve countries—11 of them in Africa—had mortality rates of more than 200 deaths per 1,000 live births. The causes of child deaths include perinatal causes (22 percent), acute respiratory infection (20 percent), diarrhoea (12 percent),
malaria, measles, and HIV/AIDS, and other causes. Malnutrition plays a role in over half of child deaths (Figure 7).

At the current rate of progress, it is not likely that the goal of reducing mortality among children under five by two-thirds by 2015 can be achieved in more than a handful of countries. At the end of the 20th century, only 36 countries were on a path to do so—most of them middle-income countries. For low-income countries and for sub-Saharan Africa, in particular, the challenge remains daunting.

**Daunting but Doable**

According to presenter Hans Troedsson, a number of available interventions—if widely and carefully applied—can be effective in reducing child mortality. The accumulated experience, supported by research, offers strong evidence for which actions determine good child-health outcomes.

At the household and community level, effective interventions include: breastfeeding and appropriate complementary feeding in young children; immunization against major endemic diseases; appropriate case management at home and in communities for acute respiratory infection, pneumonia, diarrhoea, and malaria; measures to prevent malaria; and access to appropriate care.

At the health system level what is important is widespread coverage of the population with effective interventions. One of the most effective ways of providing that coverage is through Integrated Management of Childhood Illness (IMCI). IMCI is a flexible strategy that can be used in individual countries to address the major health problems of children under five years of age. It includes preventive and curative interventions, such as improved infant and child nutrition, breastfeeding promotion, immunization, and use of bednets in areas with malaria. It responds to the needs of caretakers and seeks to improve their satisfaction with child health services. Where the health system is adequate, it can reduce child mortality by mutually reinforcing efforts at all levels—family, community, health worker, and health system.

At the policy level, action is needed to ensure the availability of essential drugs, supervision and monitoring, and financing mechanisms that help the poor. Without such measures, child survival and health interventions cannot succeed.
Transforming Knowledge Into Action

The PRSP framework is a useful tool for improving child health. Focusing on the implementation of a limited set of effective interventions in the context of a major emphasis on poverty reduction can further progress on the child mortality Millennium Development Goal. In the area of child health, in particular, the tools are proven to be effective. What is needed now to achieve dramatic reductions in child mortality is high coverage levels among poor children using the interventions already available.

The task is to work for full implementation of existing strategies and interventions, while simultaneously pursuing a research and development program to improve and expand the interventions. For example, the scope and quality of existing data need to be strengthened to improve planning and evaluation. Because most children die with more than one disease, co-morbidity must be addressed.

Working Group Discussion

Because an important goal of the consultation was to reach agreement about the key determinants of each of the HNP targets and then propose a set of indicators for measuring progress, the consultation broke into small group discussions around the targets. These working groups were asked to identify 1) a set of core intermediate indicators around which there was strong consensus that they reflect key determinants of health outcomes, 2) optional indicators suggested but not universally agreed on, and 3) indicators requiring further research.

The task of identifying appropriate indicators to measure child health was easier than for some other areas because there is a considerable body of experience in implementing programs. Thus the evidence for what works is both solid and extensive. Moreover, the process of using indicators to set goals has already proven to be helpful in reducing child mortality in various places, particularly Latin America, where child mortality goals were sometimes re-set to lower levels when the goals were achieved before the target date.

Because it is increasingly possible to measure infant and child mortality rates directly, the group discussed whether it is even necessary to measure intermediate determinants. Why not simply use data on infant and child mortality? In the end, however, the group concluded that many intermediate indicators are important to developing a good understanding of both what makes children healthy and what causes them to die. In other words, they provide a better understanding of what works. The group came up with a list of suggested indicators that should be used in monitoring progress towards the child health and mortality goals.
**Working Group Recommendations:**

**Child Mortality Indicators**

**Core Intermediate Indicators**

**Prevention/Nutrition**

- Proportion of infants under six months who are exclusively breastfed
- Proportion of surviving infants who have received a dose of measles vaccine by their first birthday

**Care**

- Proportion of children with fast or difficult breathing in the past two weeks who received an appropriate antibiotic
- Proportion of children with diarrhoea in the past two weeks who received Oral Rehydration Therapy (ORT)

**In Malarious Areas**

- Proportion of children under five who slept under an insecticide-treated net the previous night
- Proportion of children with fever in the past two weeks who received an *appropriate* anti-malarial

**Optional Indicators**

- Vitamin A supplementation
- Proportion of infants aged six to nine months receiving breast milk and complementary food
- Piped water and sanitation
- Female education
- Effects of income on mortality (e.g., access to water and sanitation, access to and use of cars)
- Birth spacing

**Indicators Requiring Further Research**

- Perinatal/neonatal indicators (e.g., deliveries attended by skilled personnel)
- Indicators to capture determinants of death in the first days of life (e.g., identification and treatment of asphyxia, prevention and treatment of sepsis at birth)
Maternal Mortality and Reproductive Health

Reduce maternal deaths by three-fourths between 1990 and 2015 (Target 6)

Worldwide, more than 500,000 women between the ages of 15 and 49 die every year as a result of complications related to pregnancy and childbirth. Almost all of these deaths occur in the developing world, with Africa having the highest maternal mortality rate (Figure 8). Most of these deaths could be avoided if women had access to adequate care both before and during pregnancy. Maternal mortality reflects the disparities and inequities between men and women, as well as women’s standing in society. Women have less access to social, health, and nutrition resources and fewer economic opportunities. As a result, they bear a disproportionate share of the global burden of disease for some causes (Figure 9).

The poor health and nutrition of women and the lack of care that contributes to their death in pregnancy and childbirth also compromise the health and survival of the infants and children they leave behind. It is estimated that nearly two-thirds of the 8 million infant deaths that occur each year result largely from poor maternal health, inadequate care, inefficient management of delivery, and lack of essential care of the newborn. Together, maternal conditions and the related perinatal conditions that result are major contributors to the global disease burden (Figure 10).

Reducing Maternal Mortality

Presenter Carla Abouzahr outlined three main strategies for reducing maternal mortality: 1) preventing pregnancy, 2) preventing complications from pregnancy, and 3) preventing death when complications do arise.
**Preventing Pregnancy.** Factors that affect pregnancy prevention include early marriage and childbearing, unwanted pregnancy, access to contraception, whether coercion or violence are involved, and family size preferences. An important task for the health system and for government policy and action is deciding what the appropriate indicators are for each of these factors, and whether and where the data exist to monitor these indicators.

**Preventing Complications.** Preventive measures to reduce complications from pregnancy include access to antenatal care, adequate nutrition, treatment for sexually transmitted infections, management of existing conditions such as malaria, availability and access to skilled care during delivery, active management of third stage labor, postpartum care, and the availability of abortion care. Here, too, determining which indicators best measure progress on these dimensions is an important policy and health systems task.

**Preventing Deaths when Complications Occur.** The factors that determine the ultimate outcome of complications that occur during childbearing, pregnancy, and delivery include access to skilled care, use of emergency obstetric services, and the quality of available obstetric services.

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**Reproductive Health Care**

The availability of good care is essential not only for reducing maternal mortality during pregnancy and childbirth, but also to ensure a healthy pregnancy in the first place, to reduce both maternal and perinatal morbidity, and to reduce perinatal mortality. Good care can be provided in a variety of contexts, depending on the level of training and the severity of the problem. Most reproductive and maternal health care is provided by nurses, midwives, community health workers, and families, rather than doctors or hospitals (Figure 11), making the availability of skilled care within the community an important component of women’s health.

The factors that influence whether people use health services include:

- **Distance.** How far away is the nearest facility?
- **Knowledge.** Do women know the major danger signs?
Cost. What is the cost of major interventions?

Quality. How do people feel about the interpersonal relations at the facility?

Culture. Can women make the decision to use health services independently?

There is a strong correlation between the presence/lack of a skilled attendant at delivery and the maternal mortality ratio: the presence of a skilled attendant significantly reduces maternal deaths.

Doing More and Doing It Better

The PRSP framework provides an opportunity to improve maternal and reproductive health. The tools are available and are being used in a variety of settings. What is needed now is to work for full implementation of existing strategies and interventions, to pursue research and development in order to scale up and improve the interventions, and to develop better monitoring and evaluation strategies, including rapid assessment of maternal mortality and cause of death.

Working Group Discussion

The participants in the small group discussion focused on which indicators would be most useful in helping to reduce maternal mortality and improve reproductive health. These generally are also indicators that are relevant at sub-national and district levels. The aim was to avoid relying primarily on special surveys and to focus instead on indicators that can be generated through routine information systems. Surveys were not ruled out, however, where they were deemed to be appropriate and cost effective.

Criteria for Selecting Indicators

- Ethical
- Useful
- Scientifically robust
- Representative
- Simple, easy to understand
- Accessible
- Likely to be available at country level
Working Group Recommendations: Maternal Mortality and Reproductive Health Indicators

Core Intermediate Indicators

- Contraceptive prevalence rate. Additional information considered desirable includes data on quality of care, contraceptive methods, adherence to technical standards, and client satisfaction.

- Percentage of women with any antenatal care (ANC). At least one visit should be reported; where possible, data should be compiled on the number of ANC visits, gestational age at first and last visit. Quality of care indicators should be considered, some of them developed locally.

- Percentage of births with skilled birth attendant and/or institutional deliveries. This is a key indicator in all settings. It can be derived from surveys and through routine health information as long as data are available to permit calculation of denominators (e.g., estimates of the number of births or of total population and birth rates).

- Provision of emergency obstetric care. This key indicator encourages area analysis and mapping. It should be adjusted for local conditions such as terrain, availability of transport, and population density.

- Syphilis in pregnant women, and proportion that are properly treated.

In Malarious Areas

- Percentage of women receiving antenatal care who receive at least two to three intermittent preventive malaria treatments during pregnancy.

Where Vital Registration Exists

- Number of maternal deaths/maternal mortality ratio.

Optional Indicators

- Prevention of mother-to-child transmission of HIV/AIDS
- Perinatal mortality rate
- Urethritis in men
- Total fertility rate
- Female genital mutilation
- Infertility

Indicators Requiring Further Research

- Adolescent reproductive health
- Caesarean section rate
- Reproductive rights and policies
- Indicator for RH in men
- Vital registration
- Management information systems
Communicable Diseases

Stop by 2015—and begin to reverse—the spread of tuberculosis, malaria, HIV/AIDS, and other diseases (Targets 7 and 8)

HIV/AIDS, tuberculosis (TB), and malaria are the world’s biggest killers, and all three diseases have their greatest impact among poor countries and poor people. Moreover, these diseases interact in ways that make their combined impact even worse. Yet much is known about what needs to be done, and the international community has expressed a global commitment to addressing them. Effective prevention and treatment programs will not only save lives—millions of them—but also contribute to economic development and poverty reduction.

Tuberculosis

Tuberculosis is a global public health problem that kills about 2 million people each year—one person every 15 seconds. These are all preventable deaths. In fact, TB has been known to be both preventable and treatable for over half a century, yet the number of TB cases and deaths has been growing instead of declining. The reasons for the worsening impact of TB include the breakdown in health services in poor countries, the spread of HIV/AIDS, and the emergence of multi-drug-resistant TB.

Some 8 million people are newly infected with TB each year, 3 million of them in Southeast Asia and 1.6 million in sub-Saharan Africa. The number of TB cases is growing in Eastern Europe after 40 years of decline. Current estimates suggest that if TB control is not strengthened, nearly a billion people will be newly infected between 2000 and 2020, 200 million people will get sick with active TB during that time, and 35 million people will die from the disease.

TB and Poverty

More than a health issue, TB results from a complex mix of poverty and other social and economic conditions. Poor countries and poor communities are more likely than wealthier ones to be infected with the TB germ and to develop TB
disease. Low-income countries account for 65 percent of the world’s TB cases and more than 70 percent of TB-caused deaths. The poorer a community is, the greater the likelihood of widespread infection. Lack of basic health services, poor nutrition, and poorly ventilated housing all contribute to the spread of infection and the development of active TB.

TB is not only a consequence of poverty, it also contributes to poverty. Estimates suggest that TB costs poor communities some $12 billion every year. The average TB patient loses three to four months of work time, earnings that can represent up to 30 percent of annual household income. These losses in turn have a significant impact on gross domestic product (GDP).

**DOTS: An Effective Strategy**

Presenter Christopher Dye outlined both the TB problem and a strategy for addressing it. Addressing TB requires not just health measures but measures to overcome the underlying conditions that contribute to its spread. Thus the fight against TB is also a fight against poverty and inequity. The international community has come together in the Global Partnership to Stop TB, a coalition of public and private interests, high burden and donor countries, and international agencies.

The following specific targets have been internationally agreed:

- By 2005, 70 percent of people with infectious TB will be diagnosed, and 85 percent will be cured.
- By 2010, the global burden of TB disease (deaths and prevalence) will be reduced by 50 percent compared with 2000 levels.
- By 2050, the global incidence of TB disease will be less than one case per million population (see Figure 12 for an overview of current incidence rates).

Achieving these targets requires building on, expanding, and improving existing strategies—i.e., expanding the DOTS (Directly Observed Treatment Short Course) strategy for detecting and curing TB and increasing the availability, affordability, and quality of TB drugs. First implemented in 1991, DOTS is an effective strategy that has proven to be highly successful at both detecting and treating TB. The DOTS strategy has five components:
◆ political commitment to a sustained effort at TB control;
◆ detection of infectious cases of TB using sputum smear microscopy;
◆ a standardized course of treatment for six to eight months, including direct observation for at least the first two months;
◆ a system to provide regular, uninterrupted supply of all essential anti-TB drugs; and
◆ a standardized recording and reporting system for monitoring and evaluating treatment outcomes.

Figure 13 compares outcomes of populations treated with DOTS and those not treated with the DOTS strategy by region.

Achieving the Stop TB targets also requires adapting existing strategies to address the challenges posed by emerging threats; for example, effective strategies are needed to prevent and manage multi-drug-resistant TB and to reduce the impact of HIV-related TB. Finally, achieving the targets requires research to develop new and improved diagnostic tests, drugs, and vaccines and...
wider adoption of both new and improved tools. The targets can be achieved—but not without accelerated effort and progress (Figure 14).

Malaria

Malaria is endemic to the poorest countries in the world, causing 300 to 500 million clinical cases and more than 1 million deaths each year. More than 90 percent of malaria deaths occur in sub-Saharan Africa (approximately 3,000 deaths each day); most of these deaths are of children younger than five years, for whom malaria is the leading cause of death, accounting for about 20 percent of child mortality. Malaria during pregnancy is a leading cause of low birth weight and neonatal mortality (Figure 15 and Table 1).

Over the last two decades, morbidity and mortality from malaria have been increasing due to deteriorating health systems, increased drug and insecticide resistance, changing weather patterns, civil unrest, human migration, and population displacement. Presenter Richard Steketee discussed both the problems associated with malaria and the international community’s effort and commitment to conquering it.

Malaria and Poverty

Like other diseases that disproportionately affect poor people, malaria is both a consequence of and a contributor to poverty. The poor not only are more likely to acquire malaria, they are also at greater risk of complications and death because of limited access to effective treatment. Approximately 60 percent of all deaths from malaria in the world occur among the poorest 20 percent of the world’s population—a higher percentage than for any other disease. The rural poor and people living in poor-quality housing are at greatest risk. Areas with high malaria transmission are likely to also have severe morbidity and mortality in children under five and in pregnant women.
The economic losses due to malaria in Africa have been estimated to be about US$3 to 12 billion per year. Malaria slows economic growth in Africa by about 1.3 percent per year; compounded over 35 years, this means that GDP is about a third lower than it might have been in African countries where malaria is endemic. Because of the close connection between malaria and poverty, addressing malaria is by definition a pro-poor policy choice.

**Roll Back Malaria**

The global partnership to Roll Back Malaria (RBM) was founded jointly in 1998 by the World Bank, the World Health Organization, UNICEF, and the United Nations Development Programme with the objective of reducing the worldwide malaria burden—defined as mortality, morbidity, and economic consequences—by half by 2010. Meeting this goal will require the involvement of all actors (e.g., governments, the private sector, industry, nongovernmental organizations, and communities) and all sectors (e.g., health, education, agriculture, water, and infrastructure).

Since 90 percent the world’s malaria cases are in Africa, the goal of halving the “global” burden of malaria realistically involves either addressing 55 percent of the African malaria burden or addressing all non-African malaria and 45 percent of African malaria.

The major RBM strategies were selected because of their proven efficacy and effectiveness, their potential as sustainable interventions, and their demonstrated cost effectiveness. They consist of the following:

- **Government commitment to malaria control and development of sound national policy.**
- **Rapid diagnosis and effective treatment of persons with malaria.**
- **Widespread use of insecticide-treated materials and other appropriate methods to limit human-mosquito contact.** Studies in sub-Saharan Africa have found that, in areas with high levels of malaria transmission, regular use of an insecticide-treated bednet can reduce mortality in children by as much as 30 percent as well as have a significant impact on anemia.
- **Prevention of malaria in pregnant women living in high transmission areas.** Intermittent preventive treatment of pregnant women in areas where malaria is endemic with drugs such as sulfadoxine-pyrimethamine can reduce the incidence of low birth weight by as much as half.

### Table 1
**Africa: Leading Causes of Death in Children Under Five, 2000**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Disease</th>
<th>% of All Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Malaria</td>
<td>20.3</td>
</tr>
<tr>
<td>2</td>
<td>Respiratory infection</td>
<td>17.2</td>
</tr>
<tr>
<td>3</td>
<td>Diarrhoea</td>
<td>12.3</td>
</tr>
<tr>
<td>4</td>
<td>HIV/AIDS</td>
<td>9.0</td>
</tr>
<tr>
<td>5</td>
<td>Measles</td>
<td>8.4</td>
</tr>
<tr>
<td>6</td>
<td>Low birth weight</td>
<td>5.8</td>
</tr>
</tbody>
</table>

Source: CDC
Prompt recognition and control of outbreaks or epidemics. Detecting epidemics requires timely, complete surveillance of malaria cases and monitoring of weather patterns. Also important are reserve drug stocks, transport, and hospital capacity. Well-timed and targeted vector control activities can minimize the impact of epidemics.

A dynamic global partnership involving affected countries, donor countries, international agencies, and a range of private interests. Nongovernmental organizations, community organizations, and the private sector have clear comparative advantages in community education and social marketing campaigns and in distributing essential commodities. But the public sector has the primary responsibility for policymaking, standard setting, quality control, targeted subsidies, and regulation.

Following these strategies, the RBM goals are achievable. Estimates show that the combination of insecticide-treated bednets, effective anti-malarial drugs, and treatment of pregnant women can reduce malaria mortality by more than half (Table 2).

Implementing and Measuring RBM

Where they have been used, the RBM strategies are working and showing mortality reduction. Thus the goal now is to link RBM with existing health systems and interventions and to expand coverage.

- Implement policy changes where needed. In Malawi, much of the success in reducing infant and child mortality is attributable to policy changes that led to wide availability of an effective single-dose drug and simple, clear messages about its appropriate use.
- Include preventive treatment and insecticide-treated nets in antenatal clinic services.
- In treating children under five, use integrated child management to detect and treat malaria and to promote use of insecticide-treated nets.
- At the community level, promote insecticide-treated nets via public-private partnerships and social marketing and provide appropriate anti-malarial drugs for home treatment.
- Conduct surveillance, monitoring, and evaluation through antenatal clinics, child health clinics, and appropriate surveys.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Three Interventions to Reduce Malaria Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Est. Decline in &lt;5 Mortality from All Causes</td>
</tr>
<tr>
<td>Insecticide-treated nets</td>
<td>20%</td>
</tr>
<tr>
<td>Effective anti-malarial drugs</td>
<td>15%</td>
</tr>
<tr>
<td>Prevention in pregnancy</td>
<td>3–8%</td>
</tr>
<tr>
<td>Decline in malaria mortality</td>
<td>50%+</td>
</tr>
</tbody>
</table>
HIV/AIDS

Since the human immunodeficiency virus (HIV) was first identified some 20 years ago, more than 60 million people have been infected. HIV/AIDS is now the leading cause of death in sub-Saharan Africa and the fourth largest killer worldwide. At the end of 2001, an estimated 40 million people were living with HIV/AIDS—28 million in sub-Saharan Africa alone. In some parts of Africa, adult prevalence rates exceed 20 percent of the population; in some places, prevalence rates among pregnant women exceed 30 percent.

The Poor Are Most Affected

Although HIV/AIDS hits all those affected hard, it hits those who are already poor and marginalized hardest. Poor countries, poor communities, and poor people bear the brunt of the burden. According to the December 2001 World Health Organization Update on the HIV/AIDS pandemic, per capita income and GDP are falling in the hardest hit countries; three-quarters of Africa’s population must survive on less than US$2 per day. By 2020, many countries could lose more than 20 percent of their already low GDPs.

The desperately poor have little or no access to social and health services. When they contract HIV/AIDS, they do not have access to care; and support services are few. With so many families affected, there may be few available community resources as well. With reduced income when one or more adults in the family is infected, families cut food consumption and other basic necessities. With fewer available workers in the community, agricultural production declines as well, further reducing available food resources. According to the United Nations Food and Agriculture Organization, the prospect of widespread food shortages and hunger is real. Because this disease takes a heavy toll on young adults, the elderly often find themselves taking on the burden of managing households and caring for orphaned and other children. Girls may have to quit school to save on school fees or to take care of the sick and/or younger siblings.

The Global Commitment

At the United Nations General Assembly Special Session (UNGASS) on HIV/AIDS in June 2001, the international community set in place a framework for the global fight against HIV/AIDS, adopting a Declaration of Commitments and setting targets that built on the previously stated Millennium Development Goals. Governments pledged to pursue specific targets related to prevention; care, treatment, and support; alleviating impact and reducing vulnerability; children affected by HIV/AIDS; and research and development; among others.
The UNGASS Declaration contained over 90 actions points whose overall goal was to have a significant impact on the prevalence and spread of HIV/AIDS. These targets included, but were not limited to:

- reducing HIV infection among 15- to 24-year-olds by 25 percent in the most affected countries by 2005 and, globally, by 2010; and
- reducing the proportion of infants infected with HIV by 20 percent by 2005 and by 50 percent by 2010.

In support of the commitment made at UNGASS, governments are pledging support to the new Global Fund to Fight AIDS, Tuberculosis, and Malaria. International agencies, including the World Bank, are making major new commitments, and nongovernmental organizations and private companies are finding ways to support the effort.

**Monitoring and Evaluating Progress**

The process of establishing goals for national AIDS programs involved two years of consensus meetings among national representatives, technical experts, and donors such as UNAIDS, the World Health Organization, the World Bank, the U.S. Agency for International Development, the European Commission, the Centers for Disease Control, and others. There is key scientific evidence for the effectiveness of the interventions, goals, and benchmarks that were agreed upon. But much work remains to be done to develop appropriate monitoring and evaluation plans. Figure 16 shows the main intermediate determinants considered useful measures of such key outcomes as reduced HIV incidence among young people aged 15 to 24 and infants.

For each of these intermediate determinants, various indicators are available. An important task is continuing to coordinate and standardize across countries, and to minimize the number of indicators for which countries and communities need to collect data. Because a broad range of interventions is needed, often involving more than just the health sector, the task of monitoring and evaluating progress is often difficult. The steps that have been taken thus far to establish good practices and to develop consensus are essential. The task now is to build on that effort, to continue coordination, and to strengthen monitoring and evaluation capacity and practices in developing countries.
Working Group Discussion

The group recognized that reconciling the goals, specific targets, and accompanying indicators for HIV/AIDS, tuberculosis, and malaria with those already adopted by countries and development partners must be a priority. One issue is variations in target dates. For example, the World Health Assembly adopted targets for the year 2005, and the Group of Eight industrialized countries proposed impact targets for 2010. The April 2000 African malaria summit set targets for 2005 and the Group of Eight for 2010; and the internationally agreed Roll Back Malaria initiative has set a goal of halving mortality associated with malaria by 2010. However, these varied target dates are not as difficult to reconcile as inconsistency in terminology or in the selection of indicators.

The group suggested several key indicators that should be adopted to measure progress towards the communicable disease goals. For each disease addressed, the suggested indicators have already been adopted by a wide array of partners, including high-burden nations. The proposed indicators reflect both process and outcome results. They are known to be effective in measuring such things as reduced infection or disease prevalence, incidence, and/or associated mortality. Each indicator relates directly to actions or interventions critical to disease prevention and control. The suggested HIV/AIDS indicators are among those promoted by UNAIDS and partners involved in HIV/AIDS monitoring and evaluation. The proposed indicators for TB control are those defined by the World Health Assembly (and adopted by the Stop TB Partnership). The malaria indicators are ones endorsed by Roll Back Malaria and the Abuja malaria summit.

To inform efforts to reduce poverty, disaggregated analysis of these indicators will be needed both to assess whether the poor and/or related high-risk groups are being reached by the interventions and to measure trends over time. Collaborative work will be needed to identify the most appropriate methods of data collection, analysis, problem solving, and exchange to improve results. This will require clearly defining the groups that are being disaggregated from the whole (i.e., determining which populations are part of the numerator and which are part of the denominator in any ratio).

Further collaboration is needed among those addressing each disease and with those addressing other diseases and other MDGs. Such collaboration is needed to identify the most effective and efficient means of data collection, to enable the data to be used at the local level, and to ensure that the data are available to others who need them. In some settings, these indicators will need to be adapted, and supplementary indicators will be needed in all settings. The selected global indicators may not always be the best ones for assessing national, sub-national, or local conditions. There must be room to take account of varying epidemiological, political, institutional, economic, or social conditions, as well as various responses to health threats.
**Working Group Recommendations: Communicable Diseases Indicators**

**Core Intermediate Indicators**

**HIV/AIDS**
- Percent of persons using a condom at last higher-risk sex
- Percent of sexually transmitted infection clients who are appropriately diagnosed and treated according to guidelines
- Percent of HIV-positive women receiving anti-retroviral treatment during pregnancy to prevent mother-to-child transmission of HIV

**Tuberculosis**
- Percent of registered new smear-positive TB cases in a cohort that were successfully treated (i.e., cured and completely treated)
- Percent of estimated new smear-positive TB cases that were registered under the DOTS approach

**Malaria**
- Percent of patients with uncomplicated malaria who received treatment within 24 hours of onset of symptoms
- Percent of children under five sleeping under insecticide-treated nets
- Percent of pregnant women sleeping under insecticide-treated nets
- Percent of pregnant women who have taken chemoprophylaxis or drug treatment for malaria
Malnutrition

Reduce the proportion of people who suffer from hunger by half between 1990 and 2015 (Target 2)

Nutritional status is closely related to meeting the other Millennium Development Goals. Moreover, progress towards the other goals helps to improve nutrition. At both the national and household levels, income growth has a slow but steady impact on reducing malnutrition. At the same time, although income growth is necessary for achieving the goal of reducing malnutrition, it is not sufficient. Presenter Harold Alderman discussed the relationship between reducing malnutrition and progress on other Millennium Development Goals.

There is strong relationship between child malnutrition (as measured by underweight) and GNP per capita (Figure 17). Moreover, the relationship goes both ways: just as lack of income contributes to malnutrition, malnutrition can prevent income growth through such effects as delayed or reduced schooling, reduced stature and productivity, vulnerability to infection, and higher incidence of adult noncommunicable diseases.

Recent decades have shown declines in malnutrition both across countries and within countries, suggesting that growth does improve nutrition for the malnourished. However, even under the most optimistic assumptions, few countries will be able to meet the target of halving malnutrition through growth alone. Thus interventions are needed at both the household and community levels. At the household level, increased income (or resources) creates demand for key nutritional inputs. At the community level, increased resources increase the supply and improve the quality of health services, although the long-term impact of income growth is greater than the short-term impact.

Figure 17
Child Nutrition and Per Capita GNP in Developing Countries, by Decade
Nutrition and Other Concerns

There is a well-established connection between nutrition and education that works via a number of factors, including the increased earnings made possible by more education, increased status and confidence, basic literacy and numeracy skills, and the specific nutritional knowledge that may be gained in the course of education. But as much as education contributes to nutrition, schooling per se is not necessary for gaining access to nutritional knowledge. Carefully designed and targeted programs can convey information and knowledge about growth promotion, breastfeeding, weaning strategies, and micronutrients. Raising awareness creates an impact that is additional to that obtained through formal schooling.

Thus as useful and worthwhile as expanded educational opportunities are, primary education is not in itself an informative indicator for the nutrition Millennium Development Goal.

Similarly, national and global food supply data provide relatively little or no information about malnutrition. Because they indicate access, they are, however, useful for providing information about undernutrition, which can be defined as chronic calorie deficit (i.e., low weight for age).

Measuring Progress in Reducing Malnutrition

In choosing indicators to measure progress towards the nutrition MDG, a number of things should be considered. Malnutrition rates reflect the multidimensional nature of poverty, although they convey different information about poverty than do income data. Interventions should address the underlying conditions of poverty at least in part. The indicators used to measure progress should 1) be available on a regular basis, 2) be accurate in years falling between censuses, 3) provide national geographic coverage, 4) include coverage of the poor, and 5) need not be causal.

Malnutrition rates can be tracked with regular sample surveys, which are also useful for obtaining population-based records of whether and how services that improve nutritional status are used. Such data are useful for designing programs, but it is less clear that they are cost effective for tracking MDGs.

Working Group Discussion

There was a clear consensus that underweight (low weight for age) is the most practical and informative anthropometric index available for national/global monitoring and evaluation of critical processes affecting infant/child mortality. However, most group members felt that stunting should also be tracked. UNICEF,
in fact, proposes that all three anthropometric indices—underweight, stunting (low height for age), and wasting (low weight for height)—be monitored.

Reducing the prevalence of underweight in children under five years of age is also a goal in itself, capturing a number of intermediary processes: household access to food, access to health services, clean water and sanitation, and caring practices. Many intermediate determinants for this goal are identical to those for the goal of reducing infant and child mortality.

Low birth weight was identified as a key determinant of infant mortality, as well as of a range of infant and child morbidities. There is also some evidence that low birth weight is related to adult-onset noncommunicable diseases. Group participants agreed on the need to highlight low birth weight and its relationship to infant and child morbidity/mortality, to improve data collection of birth weights on a routine basis, and to conduct additional (and continuing) research. Although some group members proposed including low birth weight on the list of core indicators to focus attention on its importance, it is listed as an optional indicator because there was not complete agreement on this point.

Other core indicators identified by the group included percent of children 6 to 59 months who received one dose of vitamin A in the past six months and the proportion of infants under six months who are exclusively breastfed. Evidence shows that 70 percent of the lives of children 6 to 59 months of age saved by improved vitamin A status occur through reductions in mortality of children 6 to 24 months. This makes breastfeeding and the availability of vitamin A supplementation for women in general important policy objectives. The vitamin A content of breastmilk consumed in the first half-year of exclusive breastfeeding builds vitamin A stores to protect infants in the crucial second six months (and later) of life.

Although some interventions are known to be good policy in the nutrition area, further research is needed to determine the effectiveness of others. In particular, research is needed on child feeding practices at certain times:

- during the transition from exclusive breastfeeding to one of combined breastmilk and complementary foods,
- during episodes of illness, and
- during the immediate recuperative period.

Child feeding practices have significant impact on whether children have healthy growth or whether they begin a downward spiral of increasing malnutrition and susceptibility to repeated infections. The group recommended further research on these critical questions, as well as on the relationship between anemia in pregnant women and heightened risk of mortality.
### Working Group Recommendations: Nutrition Indicators

#### Core Intermediate Indicators

- Prevalence of underweight (weight for age <2 Z-scores) in children five years and younger
- Percent of children 6 to 59 months who received one dose of vitamin A in the past six months
- Proportion of infants under six months who are exclusively breastfed

#### Optional Indicators

- Low birth weight incidence rate
- Proportion of mothers receiving vitamin A supplementation by eight weeks postpartum

#### Indicators Requiring Further Research

- Timely complementary feeding; for example, proportion of infants aged six to nine months who received complementary food in addition to breastmilk in the last 24 hours
- Recuperative feeding; for example, proportion of infants continuously fed during last diarrhoea episode and/or proportion of infants fed extra food for two weeks following last incidence of diarrhoeal disease
Measuring Development Goals: Two Examples

The question of how to measure progress in health, nutrition, and population—as well as any other development goals—is an ongoing one for countries and donor agencies, which want to know that their investments are improving people’s lives.

Much has been learned in recent years about how to select indicators that give a realistic picture of what is actually happening, how to collect and analyze the data, and how to apply the results in future efforts. As the international community makes another push to achieve clearly stated targets, it is important to learn from earlier efforts and to build on existing methods for data collection and analysis. For this reason, the consultation included presentations about earlier and ongoing efforts in this area. In particular, Gareth Jones of UNICEF discussed the efforts throughout the 1990s to meet goals set out by the World Summit for Children in 1990, and Martin Vaessen of ORC Macro International discussed the MEASURE Demographic and Health Surveys that collect and use data to monitor and evaluate health, nutrition, and population programs around the world.

Measuring the Progress of Children in the 1990s

The World Summit for Children, meeting in New York in 1990, set out 27 goals related to improving the health and well-being of children by the end of the decade. Progress on these goals was to be assessed through more than 70 indicators. This
required finding ways to fill data gaps and to utilize available data that were not necessarily ideal.

An important outcome of the decade was that it increased the amount and quality of data collected in the developing world, as well as the capacity of developing countries to collect and to use data. This was done by:

- working with a wide range of partners,
- using existing or already planned country data systems, and
- using household surveys to generate missing data.

Early in the decade, it became clear that existing indicators did not provide enough current, good-quality information for assessing progress and that many data gaps could be filled through household surveys, especially multiple-indicator cluster surveys (MICS). UNICEF developed the initial list of indicators used in the surveys through extensive consultation internally and with partners, particularly the World Health Organization, UNESCO, and the International Labor Organization. UNICEF then worked with an even wider range of organizations in developing the survey manual and questionnaire.

MIC surveys were conducted midway through the decade and consisted of modules that countries could use or not, depending upon their particular data needs. Based in part on what was learned in the first round, a second set of surveys was developed for use at the end of the decade. Table 3 shows the question modules for households, mothers, and children used mid-decade and those used at the end of the decade (MICS2).

In large part because of this approach, nutrition and child health data were available for many more countries at the end of the decade than just a few years before (Figure 18).
### Table 3
Comparison of MICS Questionnaire Modules: Mid-Decade and End-Decade

<table>
<thead>
<tr>
<th>MICS</th>
<th>MICS2</th>
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</thead>
<tbody>
<tr>
<td><strong>Household modules</strong></td>
<td></td>
</tr>
<tr>
<td>Household composition</td>
<td>Household composition</td>
</tr>
<tr>
<td>Water and sanitation</td>
<td>Water and sanitation</td>
</tr>
<tr>
<td>Salt iodization</td>
<td>Salt iodization</td>
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<tr>
<td>Literacy</td>
<td></td>
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<tr>
<td>Alternative care and orphans</td>
<td></td>
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<tr>
<td><strong>Modules for women</strong></td>
<td></td>
</tr>
<tr>
<td>Tetanus toxoid</td>
<td>Tetanus toxoid</td>
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<tr>
<td>Reproductive health (antenatal and delivery care)</td>
<td></td>
</tr>
<tr>
<td>Family planning</td>
<td></td>
</tr>
<tr>
<td>Vitamin A</td>
<td></td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td></td>
</tr>
<tr>
<td><strong>Modules for children</strong></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>Education (including early childhood)</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>Diarrhoea</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>Vitamin A</td>
</tr>
<tr>
<td>Immunization</td>
<td>Immunization</td>
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<tr>
<td>Child malnutrition</td>
<td>Child malnutrition</td>
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<tr>
<td>Breastfeeding</td>
<td></td>
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<tr>
<td>Care of acute respiratory illness</td>
<td></td>
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<tr>
<td>Child mortality</td>
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<tr>
<td>Low birth weight</td>
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<tr>
<td>Birth registration</td>
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<tr>
<td>Child labor</td>
<td></td>
</tr>
<tr>
<td>Malaria</td>
<td></td>
</tr>
<tr>
<td><strong>Optional modules</strong></td>
<td></td>
</tr>
<tr>
<td>Breastfeeding</td>
<td>Maternal mortality</td>
</tr>
<tr>
<td>Care of acute respiratory illness</td>
<td>Child disability</td>
</tr>
<tr>
<td>Child mortality</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** UNICEF
Demographic and Health Surveys

The Demographic and Health Surveys (DHS) program collects demographic and health data for regional and national health and population programs. It conducts surveys of households, women, and men; these can be used to obtain estimates for both the country as a whole and for sub-national areas. Sample sizes vary from 5,000 to 30,000. DHS is currently examining whether estimates using the survey results can be developed for specific “small areas.”

DHS questionnaires are standardized across countries but can also be adapted to meet a country’s needs for specific data.

The household questionnaire includes the following:

- basic sociodemographic information, such as age, sex, education, etc.;
- characteristics related to the home (access to water, electricity, sanitation) and household possessions;
- whether iodized salt is used;
- anemia testing to determine iron deficiency; and
- height and weight measurements to determine nutritional status of children under five.

The women’s questionnaire contains questions related to:

- background characteristics (age, education, literacy, employment);
- fertility (including actual and preferences);
- family planning;
- maternal and child health;
- infant and child mortality;
- HIV/AIDS; and
- breastfeeding and nutrition.

Depending upon circumstances, it may also include any of the following:

- maternal mortality,
- malaria,
- verbal autopsy,
- health expenditures,
- women’s status,
domestic violence, and
female genital cutting.

The men’s questionnaire includes questions about:

- background characteristics (age, education, literacy, employment);
- fertility preferences;
- family planning;
- involvement in maternal and child care;
- perceptions about gender roles; and
- HIV/AIDS.

DHS also conducts surveys of health care providers in order to obtain information about the availability, quality, and utilization of health services and infrastructure. These surveys can be either stand-alone activities or linked to household survey information; they can be national or sub-national. Such surveys make it possible to compare the services of various providers and/or to track improvement over time.

The DHS program has been steadily building a database of health, nutrition, and population information in nearly 60 countries; more than half of these countries have had at least two surveys. Repeat surveys make it possible to evaluate change over time in such key areas as fertility, mortality, contraceptive use, immunization coverage, pre and post-natal care, treatment of childhood illnesses, and marriage patterns. The surveys collect data on many of the indicators used to measure progress on the Millennium Development Goals.

Strengths of DHS

The DHS program offers many advantages. The data collected are comparable both within countries and across a wide range of countries. In a growing number of countries, more than one round of data collection also makes comparisons possible over time. The surveys generate data for a large number of key variables; these data are available and can be readily accessed in both raw and recoded formats. The surveys are well designed, field staff are well trained and supervised. Reports are produced in a timely fashion and well edited.

DHS is currently funded primarily by the U.S. Agency for International Development, but the World Bank, UNICEF, the United Nations Population Fund, and others provide support for data activities in particular countries.
Another View: Pros and Cons

Not all agreed that the Millennium Development Goals are a step forward in helping countries overcome poverty and improve health and life expectancy. The positives of this approach are clear:

- It builds on an existing body international knowledge and evidence.
- It keeps international organizations focused on high-impact strategies and helps to rule out low-impact strategies.
- It requires and thus will prompt improved monitoring and evaluation.
- It is easy to explain (a “mom-and-apple-pie” approach).
- It fits the Bank’s existing approach and requires little adjustment in the work program.

But, according to presenter Ruth Levine, the approach can be criticized on the following grounds:

- It does not serve middle-income countries well, for whom health financing and management issues are more important than a focus on infant and child mortality.
- It does not necessarily reflect what is most important in any particular country—countries want to determine their own goals, not be bound by international goals.
- Meeting certain requirements on paper does not necessarily mean there is a noticeable change in program, emphasis, or substance.
- Is it just another implausible goal? Did we learn any lessons from the campaign, “Health for All by the Year 2000”?
Conclusion:
Using the PRSP Framework to Monitor Progress

Measuring progress towards the Millennium Development Goals is an important activity, as is keeping a focus on the poorest segments of society to ensure that pro-poor policies actually work. The Poverty Reduction Strategy Papers framework provides a useful way to measure progress in reaching health, nutrition, population, and other MDGs.

Poverty and ill health are linked in a vicious cycle, in which poverty leads to ill health and ill health further contributes to poverty. The PRSP framework helps to focus HNP efforts on the poorest segments of society by looking at:

- **health outcomes** for various groups within society,
- the role of **households and communities** in generating poor health outcomes (as well as their potential for improving those outcomes),
- the role of the **health system and other sectors** in improving health outcomes, and
- the role of **government policies and actions** in creating the environment for better health outcomes.

The PRSP framework can be used to diagnose problems in health care, to develop solutions, and then to measure the effectiveness of those solutions along eight dimensions (Figure 19). For each of these dimensions, there are specific pro-poor actions and policies that can be identified. The task is to
incorporate HNP goals into all efforts to reduce poverty. Because there is still much that is not known about how well supposedly pro-poor policies work under various conditions, it is critical to monitor the outcome of any measures that are implemented and to document the reasons for success or failure. This consultation offered recommendations for how efforts to implement HNP goals can be monitored. A useful next step is to develop specific health, nutrition, and population modules to be included in the PRSP framework.
## Annex A

### Millennium Development Goals

<table>
<thead>
<tr>
<th>Goals and Targets</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal 1: Eradicate extreme poverty and hunger</strong></td>
<td></td>
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</tbody>
</table>
| **Target 1:** Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day | Proportion of population below $1 per day  
Poverty gap ratio [incidence x depth of poverty]  
Share of poorest quintile in national consumption |
| **Target 2:** Halve, between 1990 and 2015, the proportion of people who suffer from hunger | Prevalence of underweight children (under-five years of age)  
Proportion of population below minimum level of dietary energy consumption |
| **Goal 2: Achieve universal primary education** | |
| **Target 3:** Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling | Net enrolment ratio in primary education  
Proportion of pupils starting grade 1 who reach grade 5  
Literacy rate of 15-24 year olds |
| **Goal 3: Promote gender equality and empower women** | |
| **Target 4:** Eliminate gender disparity in primary and secondary education preferably by 2005 and to all levels of education no later than 2015 | Ratio of girls to boys in primary, secondary and tertiary education  
Ratio of literate females to males of 15-24 year olds  
Share of women in wage employment in the non-agricultural sector  
Proportion of seats held by women in national parliament |
| **Goal 4: Reduce child mortality** | |
| **Target 5:** Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate | Under-five mortality rate  
Infant mortality rate  
Proportion of 1 year old children immunised against measles |
<table>
<thead>
<tr>
<th>Goals and Targets</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal 5: Improve maternal health</strong></td>
<td></td>
</tr>
</tbody>
</table>
| **Target 6:** Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio | Maternal mortality ratio  
Proportion of births attended by skilled health personnel |

| **Goal 6: Combat HIV/AIDS, malaria and other diseases** | |
| **Target 7:** Have halted by 2015, and begun to reverse, the spread of HIV/AIDS | HIV prevalence among 15-24 year old pregnant women  
Contraceptive prevalence rate  
Number of children orphaned by HIV/AIDS |
| **Target 8:** Have halted by 2015, and begun to reverse, the incidence of malaria and other major diseases | Prevalence and death rates associated with malaria  
Proportion of population in malaria risk areas using effective malaria prevention and treatment measures  
Prevalence and death rates associated with tuberculosis  
Proportion of TB cases detected and cured under DOTS (Directly Observed Treatment Short Course) |

| **Goal 7: Ensure environmental sustainability** | |
| **Target 9:** Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources | Proportion of land area covered by forest  
Land area protected to maintain biological diversity  
GDP per unit of energy use (as proxy for energy efficiency)  
Carbon dioxide emissions (per capita)  
[Plus two figures of global atmospheric pollution: ozone depletion and the accumulation of global warming gases] |
| **Target 10:** Halve, by 2015, the proportion of people without sustainable access to safe drinking water | Proportion of population with sustainable access to an improved water source |
| **Target 11:** By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers | Proportion of people with access to improved sanitation  
Proportion of people with access to secure tenure  
[Urban/rural disaggregation of several of the above indicators may be relevant for monitoring improvement in the lives of slum dwellers] |

| **Goal 8: Develop a Global Partnership for Development** | |
| **Target 12:** Develop further an open, rule-based, predictable, non-discriminatory trading and financial system | Some of the indicators listed below will be monitored separately for the Least Developed Countries (LDCs), Africa, landlocked countries and small island developing states.  
Official Development Assistance  
Net ODA as percentage of DAC donors’ GNI [targets of 0.7% in total and 0.15% for LDCs]  
Proportion of ODA to basic social services (basic education, primary health care, nutrition, safe water and sanitation)  
Proportion of ODA that is untied |

*Includes a commitment to good governance, development, and poverty reduction—both nationally and internationally*
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<th>Goals and Targets</th>
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| **Target 13:** Address the Special Needs of the Least Developed Countries | Proportion of ODA for environment in small island developing states  
Proportion of ODA for transport sector in land-locked countries |
| Includes: tariff and quota free access for LDC exports; enhanced programme of debt relief for HIPC and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction | **Market Access**  
Proportion of exports (by value and excluding arms) admitted free of duties and quotas  
Average tariffs and quotas on agricultural products and textiles and clothing  
Domestic and export agricultural subsidies in OECD countries  
Proportion of ODA provided to help build trade capacity |
| **Target 14:** Address the Special Needs of landlocked countries and small island developing states | Debt Sustainability  
Proportion of official bilateral HIPC debt cancelled  
Debt service as a percentage of exports of goods and services  
Proportion of ODA provided as debt relief  
Number of countries reaching HIPC decision and completion points |
| (through Barbados Programme and 22nd General Assembly provisions) | | |
| **Target 15:** Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term | Unemployment rate of 15-24 year olds |
| Target 16: In cooperation with developing countries, develop and implement strategies for decent and productive work for youth | Proportion of population with access to affordable essential drugs on a sustainable basis |
| **Target 17:** In cooperation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries | Telephone lines per 1000 people  
Personal computers per 1000 people |
| **Target 18:** In cooperation with the private sector, make available the benefits of new technologies, especially information and communications | Other indicators TBD |
| | |

*The selection of indicators for Goals 7 and 8 is subject to further refinement.
Annex B
Consultation Agenda

Day 1

Opening Remarks
Jo Ritzen, Vice President, Human Development Network, World Bank
Chris Lovelace, Director, Health, Nutrition, and Population, Human Development
Network, World Bank
Mariam Claeson, Lead Public Health Specialist, Human Development Network, World
Bank

Child Mortality (MDG Target No. 5)
Moderator: Jim Tulloch, WHO Representative, Cambodia, World Health Organization
Presenter: Hans Troedsson, Director, Department of Child and Adolescent Health
and Development, World Health Organization
Discussants: Adam Wagstaff, Lead Economist, World Bank; Flavia Bustreo, Senior
Public Health Specialist, World Bank

Reproductive Health and Maternal Mortality Reduction (MDG Target No. 6)
Moderator: Jerker Liljestrand, Lead Health Specialist, World Bank
Presenter: Carla Abouzahr, Coordinator, Communication and Evaluation, World
Health Organization
Discussants: Elizabeth Lule, Advisor, World Bank; Isabella Danel, Senior Public
Health Specialist, World Bank

Achieving the Communicable Disease Targets (MDG Target Nos. 7 and 8)
Moderator: Diana Weil, Senior Public Health Specialist, World Bank
Presenters: Christopher Dye, Coordinator, Tuberculosis Monitoring and Evaluation,
World Health Organization; Richard Steketee, Chief, Malaria Epidemiology Branch,
Centers for Disease Control; Ties Boerma, Director, MEASURE Evaluation

Reducing Malnutrition (MDG Target No. 2)
Moderator: Jayshree Balachandar, Senior Human Resources Specialist, World Bank
Presenter: Harold Alderman, Food and Nutrition Policy Advisor, World Bank
Discussants: Philip Harvey, U.S. Agency for International Development;
Peter Heywood, Lead Health Specialist, World Bank
Day 2

Opening Comments
Shantayanan Devarajan, Chief Economist, Human Development Network, World Bank

The PRSP Framework: Monitoring HNP Outcomes
Moderator: Abdo Yazbeck, Senior Economist, World Bank
Presenter: Agnes Soucat, Senior Economist, World Bank
Discussant: Alexander Preker, Lead Economist, World Bank

How to Measure the HNP Development Goals and Their Determinants
Moderator: Eduard Bos, Senior Population Specialist, World Bank
Presenters: Martin Vaessen, Senior Vice President, ORC Macro International; Carlos Castillo-Salgado, Chief, Special Program for Health Analysis, Pan American Health Organization; Gareth Jones, Chief, Information and Data Management, UNICEF
Discussant: Susan Stout, Lead Implementation Specialist, World Bank

The HNP Development Goals: Operational Perspective
Moderator: Birger Fredriksen, Senior Education Advisor, World Bank
Presenters: Enis Baris, Senior Public Health Specialist, World Bank; Ruth Levine, Senior Economist, World Bank; Denise A. Vaillancourt, Senior HNP Specialist, World Bank

Breakout Into Working Groups
Child Health: Flavia Bustreo (rapporteur), Alfred Bartlett, Bernadette Daelmans, Gareth Jones, Remi Sogunro, Hans Troedsson, Jim Tulloch, Adam Wagstaff
Maternal Health and Mortality: Carla A bouzahr (rapporteur), Eduard Bos, Isabella Danel, Metin Gülmezoglu, Jerker Liljestrand, Elizabeth Lule, Kourtoum Nacro
Communicable Diseases: Tim Evans (rapporteur), Lawrence Barat, Enis Baris, Mariam Claeson, Christopher Dye, Christy Hanson, Diana Wel
Nutrition: Leslie Elder (rapporteur), Harold Alderman, Jayshree Balachander, Rae Galloway, Philip Harvey, Anthony Measham, Tes Wardlaw

Achieving and Monitoring Progress Toward HNP Goals:
The Role of Development Partners
Moderator: Ok Pannenborg, Senior Advisor, World Bank
Presenters: Margaret Miller, Senior Economist, World Bank; Jim Tulloch, WHO Representative, Cambodia, World Health Organization; Alfred Bartlett, Senior Advisor for Child Survival, U.S. Agency for International Development

Wrap Up: What Next
Moderator: Chris Lovelace, Director, Health, Nutrition, and Population, Human Development Network, World Bank
Annex C
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Rae Galloway  
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