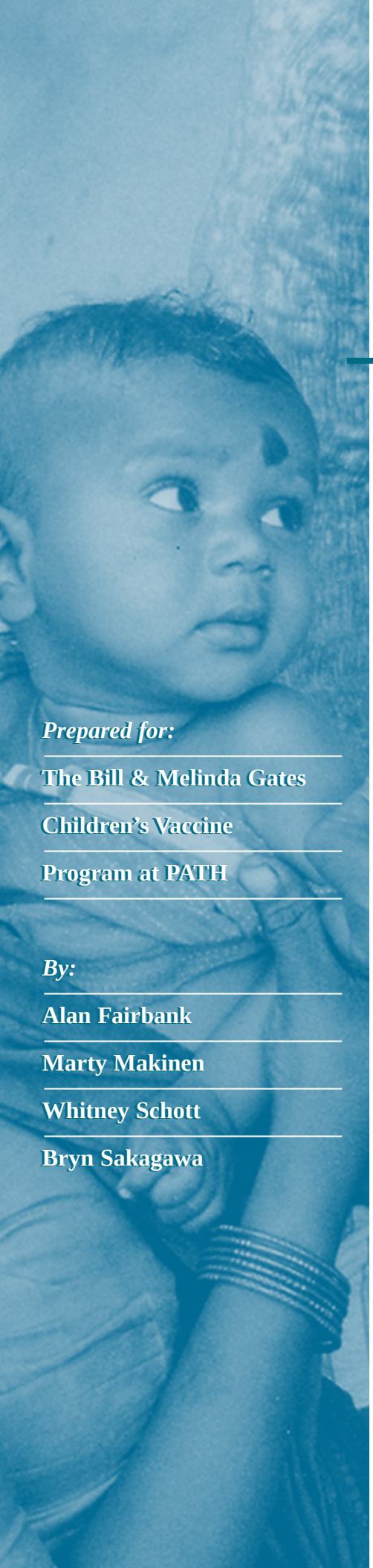

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Poverty Reduction and Immunizations

Considering Immunizations in the Context of Debt Relief for Poor Countries

This primer is written to help analysts, stakeholders, and decision makers give full consideration to including immunizations as a major element of poverty reduction strategies developed in the Heavily Indebted Poor Countries (HIPC) II debt relief process. Many of the HIPCs are applying to the Global Alliance for Vaccines and Immunization (GAVI) for assistance with their immunization programs. The GAVI applications require two items of relevance to debt relief: applicant countries must 1) pledge to increase their share of financial support for the basic Expanded Program on Immunization (EPI) over a five-year period, and 2) submit a statement explaining how immunizations fit into the HIPC debt relief process, where this is applicable.

This primer aims to assist the concerned parties in three ways. It begins by describing briefly the HIPC II Debt Relief Initiative and its relationship to poverty reduction strategies. The case is then made for health interventions, and immunizations in particular, as prominent components of these strategies. Finally, the paper shows specifically how immunization programs should be handled in the defined process for developing a poverty reduction strategy.

Strategies to Reduce Poverty

Since the mid-1980s, the international community has moved toward providing the poorest, most-heavily indebted countries with relief from their debts. In most cases, these efforts required the concerned governments to reform their macroeconomic policies to conserve foreign exchange and reduce government spending deficits. The original set of debt relief mechanisms was bolstered in the mid-1990s by the first HIPC Initiative, led by the World Bank and International Monetary Fund (IMF).

By 1998, it became apparent that the HIPC Initiative was not delivering results quickly and was not helping the HIPCs to reduce widespread poverty (which was both a cause and an effect of their indebtedness, to some degree). International advocacy groups lobbied both for more generous terms for debt relief and for tying relief to efforts to attack poverty.

At a meeting of the Group of Seven (G-7) industrialized countries in Cologne, Germany in June 1999, the participants pledged to reinvigorate the HIPC Initiative to provide "faster, broader, and deeper" debt relief. This reformed effort (known as HIPC II) also brought poverty reduction to the center of the debate on how debt relief should be conveyed. HIPC II's central objective is to use debt relief to provide a greater focus—both within the HIPCs and within the international community—on using the proceeds from relief and general donor assistance to boost investments in health, education, and social protection.

Under HIPC II, not only will debt relief be provided sooner to more countries, but it also will be linked to a broad-scale

HIPC II Initiative

Its central objective is to use debt relief to provide a greater focus—both within the HIPCs and within the international community—on using the proceeds from relief and general donor assistance to boost investments in health, education, and social protection.

attack on poverty in the indebted countries. A central mechanism in each country for designing medium- to long-term policies and programs for poverty reduction is a Poverty Reduction Strategy Paper (PRSP) to be developed in an open, participatory process, organized and managed by each country itself. To move quickly to apply HIPC II proceeds to poverty reduction purposes, an interim PRSP (I-PRSP) is to be prepared. Immunization programs can be (and usually *should be*) included in both I-PRSPs and PRSPs, so they may benefit from HIPC II proceeds and other financing sources as well. The PRSP provides focus for the assistance activities of bilateral and multilateral lenders and donors, and gives the poor a chance to lay claim to greater domestic fiscal commitments in support of their basic needs for health, education, and other poverty reduction efforts.

Health and Development

Especially important for both human development and economic development is improving the health status of the population. This is particularly critical to permitting the poorest to participate in economic development. Thus, it is imperative that more resources for health be a priority in considering how debt relief proceeds should be allocated. Immunizations are at the top of the list of program interventions that have proven most cost-effective in improving health status. Before debt relief, immunization coverage levels in most HIPCs were relatively low and unevenly distributed (often to the disadvantage of the poor). This being the case, more lives can be saved, more disease averted, and more healthy life years gained for less money by immunization than by nearly any other program. This is particularly important for childhood diseases which, while easily preventable by vaccination, can be devastating in terms of death, disability, and financial and economic disruption if spread throughout an un-immunized population. Thus, immunizations should be given priority consideration in the development of health program initiatives in the I-PRSPs and PRSPs that will be developed in the coming years. Improved, broadened, and more financially self-sufficient immunization programs could directly improve the lives of the poor and indirectly contribute to their ability to participate in the economic growth that the overall debt relief initiative aims to foster.

Immunization Impact

Among the program interventions that have proven most cost-effective in improving health status, immunizations are at the top of the list. Before debt relief, immunization coverage levels in most HIPCs were relatively low and unevenly distributed (often to the disadvantage of the poor). This being the case, more lives can be saved, more disease averted, and more healthy life years gained for less money by immunization than by nearly any other program. This is particularly important for childhood diseases which, while easily preventable by vaccination, can be devastating in terms of death, disability, and financial and economic disruption if spread throughout an un-immunized population.

Health and Immunization Programs in Poverty Reduction Strategies: a Review of the Linkages

Immunizations can be a key and cost-effective element in reducing poverty. Evidence backing this assertion is developed in the following sections and may be used in discussions of poverty reduction strategies to ensure a place for immunizations in the use of funds freed by debt relief.

To understand the link between immunizations and poverty, begin by examining the link between poor health and poverty. Next, look at immunizable diseases and their specific link to poverty. Finally, the cost of immunizations relative to other means to address poverty must be examined. Although each of the HIPCs is different, in all of them, poor health is both a major cause and a result of poverty. Immunizable diseases are a key health problem in the great majority of HIPCs. Finally, immunizations are among the most cost-effective of poverty-reduction activities.

Further confirming and emphasizing the link between immunizations and poverty reduction, the international community has set immunization coverage as a goal for development. The 1990 World Summit for children called for the eradication of polio and maintenance of at least 90 percent immunization coverage (with the traditional EPI antigens) of one-year-old children by the year 2000, among other objectives. The Organization for Economic Cooperation and Development's Development Assistance Committee (DAC) set an objective of reducing child mortality to two-thirds of the 1995 rate by 2015. These objectives can be achieved only through

immunizations, since a large share of child mortality comes from immunizable diseases.

Finally, a specific feature of immunization programs in many HIPCs is that donors pay a large part of program costs, especially the costs of imported vaccines and supplies (donors pay a larger part of immunization costs than of any other health program). This makes the immunization programs particularly vulnerable to changes in donor priorities. If HIPCs could provide a greater share of immunization financing from their own resources, more stability of funding would be assured, and long-term sustainability would be possible.

Poor health and disease are a cause of poverty

Poverty is often thought of in purely monetary or income terms, as in being above or below a "poverty line." However, both the World Bank and UNDP have studied poverty and broadened the conventional definition. The World Bank's 1990 World Development Report expanded upon the income-based definition by adding that poverty includes the lack of capability to maintain health and nutrition and to increase capabilities through education. Later, the World Bank's *Voices of the Poor* study led it to add the dimensions of vulnerability, voicelessness, and powerlessness to its definition of poverty for the *2001 World Development Report*.

Thus, the World Bank's Poverty Reduction Sourcebook defines the following dimensions of poverty:

- Lack of opportunity
- Low capabilities
- Low level of security
- [Lack of] empowerment

The UNDP's Human Development Report (HDR) glossary says, "Human poverty is more than income poverty, more than a lack of what is necessary for material well-being. Human poverty is the denial of choices and opportunities most basic to human development — to lead a long, healthy, creative life and to enjoy a decent standard of living, freedom, dignity, self-esteem and the respect of others." The Human Poverty Index calculated in the Human Development Report is a composite of the percentage of people not expected to survive to age 40, illiteracy rates, percentage of people lacking access to health services and safe water, and percentage of children who are underweight.

Thus, poor health is an element of poverty itself. Poor health interacts with low income to restrict the ability of the poor to attain adequate nutrition and to learn and increase their capabilities. Further, susceptibility to illness makes the poor vulnerable to morbidity, disability, and premature mortality, thereby increasing their powerlessness.

Moreover, poor health may push some households that otherwise would be above an income-defined poverty line below it. Families may be forced into poverty when the prices to be paid for health services are too high; when income earners lose substantial work time due to poor health, disability, or caring for others in poor health; or when income earners die prematurely. In addition, when there is a high risk of premature death, families may try to increase fertility to ensure the survival of a target-size family. This puts mothers' health at risk and takes them out of the workforce more than otherwise would be the case.

Health status is itself an indicator of poverty in many dimensions and good health is a protector of income or wealth.

Cologne Debt Relief Initiative for HIPCs

The international community has been concerned by the debt burden borne by developing countries since the mid-1980s. A series of initiatives designed to address the problem have included extended grace periods, rescheduling, "special terms," and, finally, debt reduction. The first debt reduction initiative was led by the International Monetary Fund (IMF) and begun in the mid-1990s. Forty-one countries, designated as Heavily Indebted Poor Countries (HIPCs), were eligible. The initiative required that conditions concerning macroeconomic management be met. However, in practice, the conditions were overly restrictive, such that few (only four) of the eligible countries qualified. Thus, the HIPC initiative was modified in 1999 at the Cologne, Germany meeting of the Group of Seven (G7).

The modified debt relief initiative (HIPC II) relaxed the macroeconomic management conditions, which should allow more eligible countries to qualify for relief more quickly. Another set of requirements were added to the initiative, however, this time on the side of how the resources freed as a result of debt relief would be used. Both the relaxation of the macroeconomic conditions and the requirements on the use of proceeds largely resulted from the efforts of international advocacy groups like Oxfam and Jubilee 2000.

The qualifying countries must now produce interim poverty reduction strategies developed in a participatory fashion to show how they will use the debt relief proceeds and how other national and external resources will be used to address poverty. The strategies are to be documented in interim Poverty Reduction Strategy Papers (I-PRSPs). Participatory development of the strategies means that the executive branch of the recipient government may not work alone (or only along with international donors and lenders), but must involve the legislative branch, civil society, the media, NGOs, and all international partners.

Poverty is a cause of poor health

Clearly, poverty in income terms is also a cause of poor health. There is a negative cycle of causality between being poor and unable to afford better health and the resulting poor health contributing to keeping one poor. However, this cycle can be broken with health interventions. The key is to choose those which are the most cost-effective. Such interventions allow the small amount of resources available for the poor to be used most effectively to reduce the negative effects of poor health on the ability to earn greater income.

Once incomes begin to grow, health can improve rapidly, leading to more income growth. A cycle of positive interaction between health and income may result.

The high-income countries of today once had health situations that were worse than those in today's poor countries, yet they were able to break the negative cycle. Today's poor countries have the advantage of health technologies, such as immunizations, antibiotics, and a better understanding of the sources of illness, that were unavailable when the high-income countries were at a similar level of income. Hence, the negative cycle may be broken more easily now than it was in the past.

Disability Adjusted Life Years and Cost Effectiveness

In the 1993 World Development Report, the World Bank and the World Health Organization developed a method called the disability adjusted life year, or DALY, to calculate the loss of healthy life resulting from different diseases or conditions.

The loss of healthy life due to premature death is calculated as the difference between actual age at death and life expectancy in a low-mortality population. To calculate loss of life due to disability, the expected duration of the condition is multiplied by a severity of illness weight. The combination of death and disability losses, with adjustments to place greater value on earlier life years and to assign different relative values to the age at which healthy life is lost, results in the number of DALYs lost.

For example, the death of a newborn baby girl represents a loss of 32.5 DALYs; a female death at age 30 means the loss of 29 DALYs; and a female death at age 60 represents 12 lost DALYs (values are slightly lower for males, who have shorter life expectancies).

The DALYs lost for a given condition may be compared to the cost of treatment or prevention of that condition to calculate a cost-effectiveness ratio. Comparisons then may be made among cost-effectiveness ratios to determine which health interventions produce the most DALYs for a given amount of money.

To calculate a cost-effectiveness ratio, the number of DALYs gained by an intervention is compared to its cost. For example, increasing immunization coverage for an underserved group might gain 1.2 million DALYs for a cost of US$8 million. The cost effectiveness ratio for this program would be US$6.67 per DALY.

Immunizable illnesses are a cause and effect of poverty

Vaccines exist for many diseases that drive families or individuals into poverty. The traditional EPI vaccines protect children from measles, polio, serious forms of tuberculosis, diphtheria, tetanus, and pertussis. Additional vaccines recommended by the World Health Organization (WHO) provide protection against hepatitis B, pneumonia, and meningitis. All of the diseases covered by these vaccines can be killers and can be costly to treat even when they are not fatal. Some leave their victims disabled (polio, tuberculosis) and, hence, much more vulnerable to poverty, since their income-earning potential is limited. Thus, these illnesses become a cause of poverty.

These illnesses can also be a result of poverty. Immunizable diseases fit the World Bank Sourcebook's description of the dimensions of poverty. The poor often do not have the same opportunity as the non-poor to benefit from the protection of immunizations. Thus, their capabilities are lowered by poor health and further, they have a reduced ability to benefit from capacity-building educational opportunities. The unpredictability of immunizable illness is another risk that poor households bear. There is no way for a family to know when or how it would have to prepare financially for the possibility of a severe case of measles or the disability resulting from paralytic polio. Although without immunizations, many families would not be affected by these possibilities, others would indeed be affected without the ability to know which diseases might attack and when. The degree of control of poor households is thus reduced by vulnerability to these diseases.

Immunizations are cost-effective

Immunizations are at the top of the list of health interventions in terms of cost-effectiveness. Spending on children's immunizations buys among the biggest gains in reduction of morbidity and mortality per dollar spent of any health intervention (see box "Disability Adjusted Life Years and Cost Effectiveness"). Immunization programs already are achieving big gains in averting disability and death: Figure 1 shows the DALYs lost per thousand from vaccine-preventable illness in different regions and the world as a whole in 1990. It also shows the percentage of children not vaccinated with DTP3, the standard indicator of a fully immunized child (FIC). In addition to their effectiveness and relatively low cost, immunizations are a very feasible intervention, while many other highly cost-effective interventions are complex to implement. Thus, to address poverty through

Table 1: Immunization cost in HIPCs as share of total resources (various measures), under different scenarios

Per Capita Amounts	Least-favorable scenario			Median case			Most-favorable scenario		
	Amount	EPI share (%)	EPI + Hep B share (%)	Amount	EPI share (%)	EPI + Hep B share (%)	Amount	EPI share (%)	EPI + Hep B share (%)
MOH Spending	$2.00	62.5	97.5	$7.00	16.6	22.1	$15.00	5.3	7.6
Government Spending	$40.00	3.1	4.9	$100.00	1.0	1.5	$125.00	0.6	0.9
GDP	$200.00	0.6	1.0	$400.00	0.3	0.4	$600.00	0.1	0.2
Resources Freed by Debt Relief	$2.00	62.5	97.5	$10.00	10.2	15.4	$15.00	5.3	7.6

health improvement (shown above to be a key channel for poverty reduction), immunizations should be one of the first, if not the first, intervention when funds are limited.

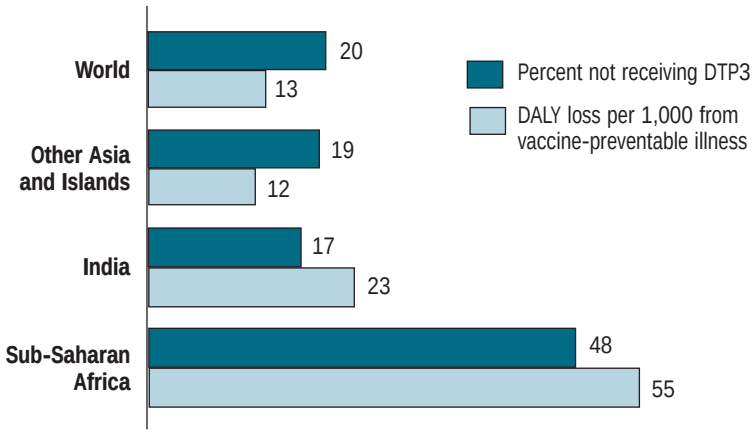
Immunization costs are a small share of spending

Without examining the facts, many observers believe that immunizations are costly in an absolute sense, even while they are highly cost-effective. However, immunizations should not be considered costly for many HIPCs, as is shown in the remainder of this section. The cost to fully immunize a child with the traditional EPI antigens is in the range of US$20-25. This amounts to US$0.80-1.25 per year per capita for most HIPC populations. Adding hepatitis B vaccine to the traditional EPI antigens would bring the cost of a fully immunized child (FIC) to about US$28.50-39 and the per capita annual cost to US$1.14-1.95. To put these figures into perspective, in a poverty reduction strategy, they may be compared to total Ministry of Health spending, total government spending, GDP per capita, and likely per capita resources made available by debt relief.

Table 1 above makes these comparisons for least-favorable, median, and most-favorable scenarios faced by HIPCs. The least-favorable scenario assumes a very low income per capita, low share of government expenditure allocated to health (5 percent), and a low amount of additional resources to be made available through debt relief (US$2.00 per capita). The median case is close to the situation most HIPCs face. Income per capita is around US$400. About 7 percent of government spending goes to health and about US$10 per capita of additional national resources are to be made available by debt relief. The most-favorable scenario is where the HIPC has a bit higher per capita income, 12.5 percent of government spending goes to health, and debt relief will free up 50 percent more money per capita than in the median case.

Those HIPCs finding themselves in the least-favorable situation would not be able to afford to pay for all immunization costs from their own resources, even with additional resources freed by debt relief. However, this situation will apply to very few HIPCs, where incomes are extremely low, immunization costs are high, and the resources freed by debt relief are minimal. It is worth noting, however, that even in this situation, the cost of an immunization program (including EPI antigens and hepatitis B) would amount to only about 1 percent of GDP.

Figure 1: DALYs lost by not vaccinating, 1990



Source: Calculated from data in the World Bank's World Development Report 1993.

Most HIPCs will find themselves in a situation closer to the one shown as the median case in the table. For HIPCs in this situation, the poverty reduction benefits of immunizations could be achieved by spending 10 to 15 percent of the resources freed by debt relief, amounting to less than half a percent of GDP.

For those HIPCs falling in the most favorable conditions, the immunization program is very affordable as a share of all of the items shown.

Health, immunization, and poverty reduction: Experience to date

The data shown in Table 2 show no particular pattern between level of per capita income and immunization coverage among HIPCs. The HIPCs with the highest and lowest GDP per capita both have average DTP3 coverage rates of 58 percent, whereas the HIPCs with mid-range GDP have higher coverage rates, at 69 percent.

However, the data in Table 3 show that within countries, lower immunization coverage is associated with poverty. Children in the higher-income quintiles are more likely to receive the measles and DTP3 immunizations and to be completely vaccinated. The children in the poorer quintiles are most likely to have received none of the immunizations.

These data do not show whether poverty is causing low immunization coverage or vice versa. However, the evidence strongly suggests that incomes would be lower if immunization coverage were lower and incomes would be higher if immunization coverage were higher. Poor countries like the HIPCs can take an important step to break out of the negative cycle of poverty and poor health by devoting resources to immunizing their children, particularly the children in the poorest households.

Programming Immunizations in a Poverty Reduction Strategy

This section details how to place immunizations within a poverty reduction strategy and how to document the immunization effort within an interim Poverty Reduction Strategy Paper (I-PRSP). The previous section made the case for why health interventions, and immunizations specifically, should be strongly considered for inclusion in a poverty reduction strategy in a HIPC. This section concentrates on issues that need to be addressed in designing, describing, and structuring the immunization component of the health section of the strategy.

The HIPC procedures call for the poverty reduction strategies chosen to be documented in I-PRSPs. In its Sourcebook, the World Bank provides guidance on, but does not dictate, how a longer-term strategy and the resulting PRSP are to be structured. Since it is the best first approximation of how an interim strategy may be assembled, the Sourcebook guidance is adapted and used here to show how immunizations could be included in a strategy and an I-PRSP.

To ensure more transparency and better responsiveness of government programs to real needs, the HIPC initiative requires that a participatory process be used to design, monitor, and evaluate the poverty reduction strategy. Before going into the I-PRSP process, this section takes up the changed roles of the Ministry of Health and EPI program in the participatory process.

Finally, to illustrate in concrete terms how such a strategy developed in a participatory fashion might play itself out in a HIPC, a fictional case study of the country “Hipicia,” and how its immunization program fits into the I-PRSP process, is presented on page 9.

Role of the Ministry of Health and EPI

The development of a poverty reduction strategy related to the HIPC debt relief initiative is intended to be different from the usual way donors and governments of aid-recipient countries work. It is to be a participatory process, involving all stakeholders. Rather than the international donor and lender agencies’ technical personnel working only with the executive branch of government (in this case the Ministry of Health (MOH) and its EPI program) to design the program, other parties, including the legislative branch of government, civil society, and the media, are to be involved.

In addition, the I-PRSP and PRSP processes will involve multiple agencies of the executive branch. The technical ministries responsible for health, education, labor, and women’s affairs will be asked to work with the ministries and agencies responsible for overall resource allocation, such as finance, planning, investment, economy, and management. The technical ministries, like the MOH, should work with non-governmental and legislative partners to develop the interventions to be funded. The technical ministries also need to work with the resource allocation agencies of the executive branch to ensure that the needed resources will be forthcoming.

For the interventions’ designs, technicians from external agencies and the MOH will not be able to merely assemble information, then draw up a plan to complete a poverty reduction strategy. There must be consultations with the other parties involved to assess their preferences, problems, and priorities. The assessment of the status quo,

diagnosis of problems, design of solutions, setting of priorities, and identification and monitoring of indicators of success or failure must be conducted jointly. This changes, but does not diminish, the role of the MOH. The MOH holds most of the information and capabilities needed for assessment, diagnosis, design, and monitoring of the health component of the poverty reduction strategy. The EPI has similar advantages for the specifics of the epidemiology and programmatic aspects of immunizable diseases.

However, the MOH and its EPI have to be (or become) adept at presenting technical information about immunizations to the newly represented stakeholders. They must be able to translate to lay terminology such concepts as disease incidence and surveillance, immunization coverage, disease burden, and cost-effectiveness, to make a clear case for the inclusion of immunizations. If this is done well, many, if not all, of the newly represented stakeholders will likely become supporters and advocates for EPI activities within the poverty reduction strategy.

Once the strategy is set, the MOH and EPI can operate much as they traditionally have to implement the agreed programs. Another change in role comes, however, in terms of the monitoring and evaluation of the program. Accountability for results takes on greater importance than ever before.

Traditionally, monitoring and evaluation have been conducted for a mainly technical audience of MOH, donor and lender personnel. Under the HIPC debt-relief-inspired poverty reduction focus, however, the newly represented stakeholders now become key players in ensuring the accountability of the MOH and EPI to deliver what has been promised for the resources allocated. For example, the legislature that passes on budgetary allocations will be keen to see that the promised results are achieved. Civil society organizations that worked hard to obtain debt relief did so to direct resources to social services that address poverty. The media may be expected to be acutely interested in reporting on the achievement or failure to achieve the objectives set. Thus, the MOH and EPI must be able to collect and explain (in non-technical terms) monitoring and evaluation data to key stakeholders. They also must be sure that the programs are implemented properly and on a timely basis to be able to achieve the promised results.

The short-term I-PRSP process may need to take some shortcuts in the participatory approach. An I-PRSP team may be given as little as three months to do its work. However, this does not preclude participatory processes. For instance, the three month (13 week) process might be launched by holding a day of public hearings where civil society, press, and parliamentary representatives could present their points of view. A draft strategy with some options for direction could be presented to the press for dissemination at the six-week point, then another hearing held at nine weeks. This hearing would solicit feedback on the draft and opinions about the options. The final I-PRSP presented at the end of the 13 weeks should reflect the feedback received and set out milestones that would be susceptible to monitoring by the MOH, by the press, and by private stakeholders.

Table 2: HIPC income per capita and immunization coverage

Group	GDP per capita 1998 (US$)	DTP3 coverage 1996–97 (%)
HIPCs with GDP/capita $501-1,000 (N=8)	$659	58
HIPCs with GDP/capita $251-500 (N=16)	$329	69
HIPCs with GDP/capita $250 and below (N=15)	$167	58

Source: Calculated from WHO and UNICEF data

Table 3: Percent of children vaccinated by income quintile, India, Côte d'Ivoire, and Tanzania

Immunization type	Poorest 20%	2nd poorest 20%	Middle 20%	2nd richest 20%	Richest 20%
India (1992–93)					
Measles	27	31	41	55	66
DTP3	34	41	52	65	77
All	20	25	34	47	60
None	45	39	29	19	12
Côte d'Ivoire (1994)					
Measles	31	45	52	64	79
DTP3	26	34	41	64	74
All	16	27	33	53	64
None	36	23	17	6	1
Tanzania (mid-1990s)					
Measles	66	76	81	89	94
DTP3	76	85	84	88	93
All	59	65	70	80	81

Sources: World Bank, "Socio-economic differences in health, nutrition, and population in Côte d'Ivoire," discussion draft from the HNP/Poverty Thematic Group of the World Bank, February 2000. World Bank, "Health Nutrition Population Status Report Tanzania: Inputs for HIPC Document and Poverty Strategy Paper." First draft. 3/3/00.

Structuring the development of a Poverty Reduction Strategy

The World Bank Sourcebook suggests a procedure for developing a poverty reduction strategy and

documenting it in an I-PRSP or PRSP (see box "Elements of the Health Section of Poverty Reduction Strategy Papers-PRSPs and interim-PRSPs"). The strategy paper should begin by reporting on the current status of the health sector, with particular emphasis on the health outcomes of the poor. Then, an analysis of the factors that led to the current situation should be performed, paying attention to household, community, and service delivery elements, followed by the setting of objectives to address weaknesses in the situation. The plan then must identify and select interventions that the government will take to achieve the stated objectives. Finally, a monitoring plan must be included to measure progress.

I-PRSPs and PRSPs are to be developed based on five principles. The strategy development process and the resulting document are to be:

- Country-driven and generated by a participatory process, including the poor
- Results-oriented
- Comprehensive in scope
- Partnership-based
- Framed within a long-term perspective.

Elements of the Health Section of Poverty Reduction Strategy Papers

1. Statistical report on the current situation (and perhaps recent trends) with respect to (highlighting the situation for the poor):
   a. Health outcomes;
   b. Household behaviors relevant to health outcomes;
   c. Non-health sectors' impact on health outcomes; and
   d. Health system performance and financing.
2. Analytical report on the status of health, nutrition, and population sector with specific focus on how past and current policies and programs have contributed to the above statistics and have impacted the poor (identify sectoral performance gaps), paying particular attention to household and community characteristics related to poor health outcomes;
3. Identification/selection of overall objectives of a pro-poor health development strategy;
4. Identification/selection of government-sponsored interventions (laws, policies, and programs) for implementing the overall strategy;
5. Identification/selection of indicators to use in monitoring progress in producing (intermediate) outputs (from 1d) and national partners contributing to health outcomes (from 1a, 1b, and 1c).

Particularly important to the success of this effort is the linking of program objectives (e.g., increased vaccination coverage for poor and other underserved populations) to indicators of program outcomes (e.g., fully immunized children) and impacts (e.g., reduced childhood deaths and reduced poverty). An additional important factor may be the degree of financial sustainability (e.g., share of immunization costs funded by national sources).

Financing of improved and expanded immunizations with debt relief proceeds could be supplemented with new sources of external funding, such as the Global Fund for Children's Vaccines (GFCV), for the introduction of new vaccines (e.g., hepatitis B and *haemophilus influenzae* type B [Hib]). The I-PRSP and PRSP can be central vehicles for rationalizing the immunization program and mobilizing resources for the short and long term.

Reporting on Current Health Status

This part of the I-PRSP/PRSP should give a brief account of the current health status of the population, with particular focus on the poor, as well as statistics on the major determinants of health status in the country. It should include the health-related behaviors of households and the performance and financing of the health services delivery system.

In most of the HIPCs, this part of the paper is likely to show one of two situations concerning immunizable diseases. The first is one where immunization coverage for the traditional set of EPI antigens is high, so that morbidity and mortality from immunizable disease are relatively low. In such a situation there is likely to be heavy dependence on donors for the financing of the EPI program. The second situation is one where EPI coverage is low, thus morbidity and mortality from immunizable disease are high. The limited EPI in the second situation is also often heavily donor-dependent.

Assessing the Health Sector

In this section of the paper, the information on the current status of the sector is used to diagnose sector problems. To continue focusing on immunizable diseases, in situation one above (high EPI coverage) the diagnosis of the sector should examine the following questions:

- To what extent is the coverage unequally distributed by geographic areas and among socioeconomic groups?
- Would other antigens, such as hepatitis B, Hib, or yellow fever, be cost-effective add-ons

(continued on page 12)

"Hipicia" Case Study

The Ministry of Health (MOH) of "Hipicia" (a fictional country used for purposes of illustration in this case study) is invited by the Ministry of Economics and Planning (MEP) to participate in the development of the interim poverty reduction strategy (I-PRS) associated with anticipated HIPC II debt relief. The MEP's invitation mentions that the I-PRS also is intended to set the stage for the development of a more in-depth poverty reduction strategy (PRS) that will guide longer-term efforts within a Comprehensive Development Framework. The MEP has organized a steering committee to oversee the development of the interim strategy and corresponding I-PRS Paper (I-PRSP). The steering committee is co-chaired by the Secretary General of the MEP and the Speaker of the national parliament (Supreme Gemm). It is comprised of:

- Designated representatives of the Ministries of Labor, Education, Social Affairs, Finance, and Economics and Planning
- The chairpersons of the Supreme Gemm commissions on Health and Social Well-being, Employment, Education and Training, and Budget and Finance
- Three representatives from the press, chosen by the Media Association of Hipicia (a newspaper, *The Hipicia City Free Press*; a private radio station, Radio Independence; and a monthly magazine, *Women's Health Today*)
- Representatives from major social sector NGOs (two church-related NGO organizations, the Catholic Health Association of Hipicia and Protestant Health and Education Alliance; one representative from a local NGO, People for the Advancement of Hipicia; and one from an NGO with international affiliations, World Vision/Hipicia)
- Two representatives from international donor agencies (SIDA and the African Development Bank).

Step 1: Report on Current Health Status

The steering committee set out a draft terms of reference (TOR) for the MOH to produce the section of the I-PRSP on current health status and the sector assessment. The TOR asks the MOH to give particular attention to the health outcomes of the poor. The results of the MOH's health status assessment (drawn mainly from the 1999 MOH Annual Report) are summarized briefly as follows:

- Diarrheal disease and malaria are the two greatest sources of morbidity and mortality
- Measles outbreaks occurred in 1999 in the two major cities and in two regions, the southwest and south center of the country. Case fatality rates were about 11 percent.
- Maternal mortality is high (estimated to be 420 per 100,000 in the 1997 DHS).
- Infant mortality is high (estimated at 122 per 1,000 in the 1997 DHS).
- The indicators are significantly worse for the sparsely populated southwest and for the lowest 15 percent of the income distribution in the two urban areas.

Step 2: Health Sector Assessment

The results of the sector assessment (drawn from the National EPI Annual Report for 1998 — the report for 1999 is still in preparation) concerning immunizations (there was much more on other aspects of the sector that is not shown here) are summarized as follows:

- Immunization coverage:

Group	DTP3 (%)	Measles (%)	Fully Immunized Children (%)
Total Population	60	58	49
Southwest region	36	38	35
Lowest 20% of income	42	45	38
Urban lowest 20% of income	45	46	42

- Polio surveillance is good; with no confirmed cases in the past three years; national immunization days (NIDs) continue.
- No assessment of the disease burden of hepatitis B has been performed; immunizations are given only in the private sector and only to a negligible fraction of newborns.
- Yellow fever outbreaks have occurred in the southwest over the last few years; elsewhere it does not seem to be a problem; immunization for yellow fever is not done routinely.
- Donors pay for all vaccines, supplies, and cold chain equipment; over the last three years the Government of Hipicia (GOH) has allocated funds for 10, 20, and 30 percent of vaccine and supplies costs, respectively, following the terms of its agreement with the Vaccine Independence Initiative (VII).

- The cold chain is aging, since it was purchased mainly by UNICEF in the early 1990s during the Universal Childhood Immunization push; no donor has plans to assist with renewing the cold chain and there is no line item in the GOH budget for this.
- The EPI uses sterilizable needles and syringes, and has problems ensuring that sterilization protocols are adhered to strictly.
- A Knowledge, Attitudes, Practices (KAP) survey performed in the southwestern province of Abyazi by a local NGO called the Concerned Citizens Association of Abyazi (CCAA) with assistance from Oxfam found that 57 percent of mothers did not know that immunizations were offered weekly in health posts.

Step 3: Setting Targets and Strategies

With this information in hand, the steering committee organized a series of three public hearings to find out what the general public thinks about the health sector. The first hearing was held in the highland city of Alfitziz and was organized in cooperation with the Alfitziz Daily Crier newspaper. The second was held in the capital, Hipicia City, in one of the hearing rooms of the Supreme Gemm. The last hearing was in Abyazi province and organized by CCAA. It was held outdoors in a village, next to the local mosque.

The hearings provided the steering committee with much new information, some of it concerning immunizations. The people who spoke in the hearings in Alfitziz and Abyazi emphasized the problem of frequent stock-outs of drugs and poor customer orientation of government health staff. They said this made many mothers reluctant to take their children in for immunizations. The Abyazi health personnel spoke about the burden of yellow fever cases on their hospitals. Community representatives in Hipicia City focused on the risk of HIV transmission through unclean needles and syringes and asked for the introduction of auto-disable technology.

With this input in hand, the steering committee set a number of tentative targets for poverty reduction, including the following related to immunizations:

1. To reduce morbidity and mortality in the population as a whole and specifically for vulnerable populations: (a) increase immunization coverage, (b) give priority to the Southwest region and to poor urban populations, and (c) increase measles coverage.
2. To ensure the continued functioning of the EPI: renew the cold chain over a period of five years.
3. To reduce the transmission of illness through the EPI and ensure continued cooperation of families in bringing their children in for immunizations: introduce safer immunization practices using auto-disable syringes over five years.
4. To address a specific health problem in the poor Southwest: introduce routine yellow fever immunizations in the Southwest region.
5. To determine the relative need for hepatitis B immunizations: study the disease burden of hepatitis, then, if warranted introduce hepatitis B vaccine into the EPI.
6. To ensure the financial sustainability of the immunization program: accelerate the growth rate of national funding of vaccine and supply costs to 15 percent per year, to reach self sufficiency in financing more quickly.
7. To address the dangerous cold chain problem quickly while ensuring long-term sustainability: ask donors that have been supporting vaccine and supply purchases to redirect their spending to help renew the cold chain; match donor contributions for the cold chain on a one-for-one basis with GOH funds.
8. To deepen understanding of the lack of information about immunizations among mothers: (1) commission KAP surveys and related focus group work in all 26 provinces in the next two years, and (2) mount a pilot information campaign in Abyazi targeting women 15-45 years of age and secondary school girls.

Step 4: Designing Program Interventions

For the short-term I-PRSP, items 1, 2, and 8 from the above list were chosen by the MOH and submitted and approved by the steering committee. The short time period for the preparation of the I-PRSP did not allow for the conduct of cost-effectiveness analysis on the alternatives. Item 1 would target the needs of the poor and the relatively neglected southwest region. Item 2 would allow the basic infrastructure for immunizations to be maintained. Item 8 would provide more information about the depth of the household and community issues with immunization, and information about how well an intervention targeted at them would work.

These tentative I-PRSP immunization interventions were summarized in articles co-authored by the EPI Director and the General Secretary of CCAA and published in the five national newspapers.

Over the course of the following week, additional hearings were held in the same three sites as before. There was general support for the tentative program, with some suggestions concerning the details of implementation. Many speakers expressed gratitude that they had been listened to in the process. Some speakers complained that progress should be made more quickly. Some others, representing opposition parties, stated that the government could not be trusted to fulfill its promises.

For the longer-term PRSP, the steering committee asked the MOH to study the costs and cost-effectiveness of these tentative targets and to specify the new programs and program changes needed to reach them in a five-year implementation plan. The steering committee planned to use the cost and cost-effectiveness information to set priorities among its multi-sectoral objectives. This work was performed over the first year of operation of the I-PRSP.

The MOH and EPI worked out the new programs and changes in existing programs needed to meet the objectives. Then the MOH worked with an economist from the University of Hipicia Manundu Medical College's Faculty of Social Sciences for Health to prepare the cost, cost-effectiveness, and phasing plans, with the following results:

- The incremental per capita cost of the immunization plans by year 5 would be US$ 0.97 if hepatitis B were added to the program; the analysis performed noted that the additional personnel cost of the immunization activities was minimal, since most of it could be done with existing personnel.
- The cost-effectiveness calculations showed that the greatest impact per unit of spending would be achieved through the following interventions, listed here in decreasing order of impact:
  - increase coverage in the Southwest and poor urban areas
  - increase measles coverage
  - increase overall coverage
  - renew the cold chain
  - introduce yellow fever vaccine in the southwest
  - introduce hepatitis B vaccine (assuming the burden of disease is similar to that in neighboring countries)
  - introduce safer immunization practices.

The information campaign targeting women of reproductive age was not analyzed because there was too little information on effectiveness. The cost-effectiveness of the campaign was put on the agenda for the evaluation of the pilot in Abyazi.

Fortunately, when the estimated program costs and cost-effectiveness ratios were studied by the steering committee, all of the tentative objectives set for immunizations made the retained list for the long-term poverty reduction program. However, the committee asked the MOH to re-do the plan so that the lower cost-effectiveness interventions would be phased in more slowly than the higher cost-effectiveness items.

The tentative PRSP also was described in press articles and in radio and television interviews given by members of the steering committee. A radio call-in forum was organized to allow the public to discuss the tentative PRSP with the Secretary General of the MEP and the Speaker of the Supreme Gemm in Alfitziz and Hipicia City. Additional hearings were organized in five sites around the country. Again, there were many questions about the details of the proposed program, but general support for the main thrusts.

Step 5: Specifying Program Indicators

The steering committee also asked the MOH to define indicators and targets for them for both the I-PRS and the PRS so that their plans could be monitored. The indicators were published in the five major newspapers and the editors of each promised their readers that they would be checking up on government performance, as did the Chairperson of the Supreme Gemm's Health and Social Well-being Commission.

The following are the indicators and values proposed by the MOH for the I-PRS:

- Coverage:

Group	Annual increase (%)			Coverage at the end of five years		
	DTP3	Measles	FIC	DTP3	Measles	FIC
Southwest region	7-10	8-11	6-9	80	80	75
Urban lowest 20% of income	7-10	7-10	6-9	80	80	75
Total population	3-5	3-5	2-4	80	80	75

- The cold chain should be completely renewed by the end of five years as follows:

	Year 1	Year 2	Year 3	Year 4	Year 5
Percentage of cold chain renewed in last five years	10	25	50	85	100

- The pilot information campaign and KAP/focus group (FG) studies should be conducted as follows:

	Year 1	Year 2	Year 3	Year 4	Year 5
Information to mothers	• 13 KAP/FG studies conducted • Pilot in in Abyazi launched	• Results of studies and pilot used to redesign intervention • Pilot in in Abyazi launched	• Redesign intervention continued • Redesigned intervention launched	• Redesign intervention continued	• Redesign intervention continued

The following are the additional indicators and values proposed by the MOH for the full PRS (note that since the PRS begins a year later than the I-PRS, the years in the tables below go from 2 to 6):

- Yellow fever coverage in the Southwest should increase as follows:

	Year 1	Year 2	Year 3	Year 4	Year 5
Yellow Fever coverage SW (%)	50	75	90	90	90

- The hepatitis B burden study should be completed and a decision taken by the end of the first year of the PRS (year two from the present). If the decision is to go ahead, then national hepatitis B coverage targets should be:

	Year 1	Year 2	Year 3	Year 4	Year 5
National Hepatitis B coverage (%)	0	40	60	75	80

- The introduction of safer immunization practices using auto-disable syringes (ADSs) should begin in year three with the following targets for use:

	Year 1	Year 2	Year 3	Year 4	Year 5
Percent of immunizations given with ADS	0	0	50	75	100

- National funding of the purchase of vaccines and supplies should progress according to the following schedule:

	Year 1	Year 2	Year 3	Year 4	Year 5
Percent of vaccine and supplies costs paid from national sources	45	60	75	90	100

- There should be a line item in the national budget for cold chain renewal at the end of five years, sufficient to cover the cost of needed replacements, maintenance, repair, and spare parts.
- The real value (adjusted for inflation) of donor assistance for health in Hipicia should be greater than or equal to the amount received in the year preceding the PRSP's adoption.

The combination of poverty reduction strategies adopted in the PRSP, including other health initiatives and non-health initiatives, led the steering committee to set the following additional impact indicators and targets:

- Infant mortality should drop to 110 per 1,000 by the end of five years and to 85 by the end of ten years.
- The share of the population below the poverty line should drop from 72 percent in the year before the PRSP's adoption to 60 percent by the end of five years and to 45 percent by the end of ten years.

(continued from page 8)

to the traditional EPI antigens to address sources of morbidity and mortality?

- To what extent does the donor dependence of the EPI program put it at risk over the longer term and limit national decision making and priority setting?
- Are there weaknesses in the current EPI that put it at risk of losing the gains that have been made (e.g., deteriorating or non-CFC-free cold chain, risky immunization practices)?
- Are there household (e.g., lack of information or transport) or community (e.g., culturally-determined nutritional practices or reluctance to send girls to school) factors affecting use of immunization services or morbidity from immunizable disease?

In the second situation described above (low EPI coverage), the same factors listed above should be examined. In addition, the following question should be added:

- What is the cost-effectiveness of a general increase in immunization coverage relative to other possible health interventions? (The likely answer is that immunization coverage increases have favorable cost-effectiveness relative to other possible interventions.)

Articulating and selecting I-PRSP and PRSP development targets and strategies

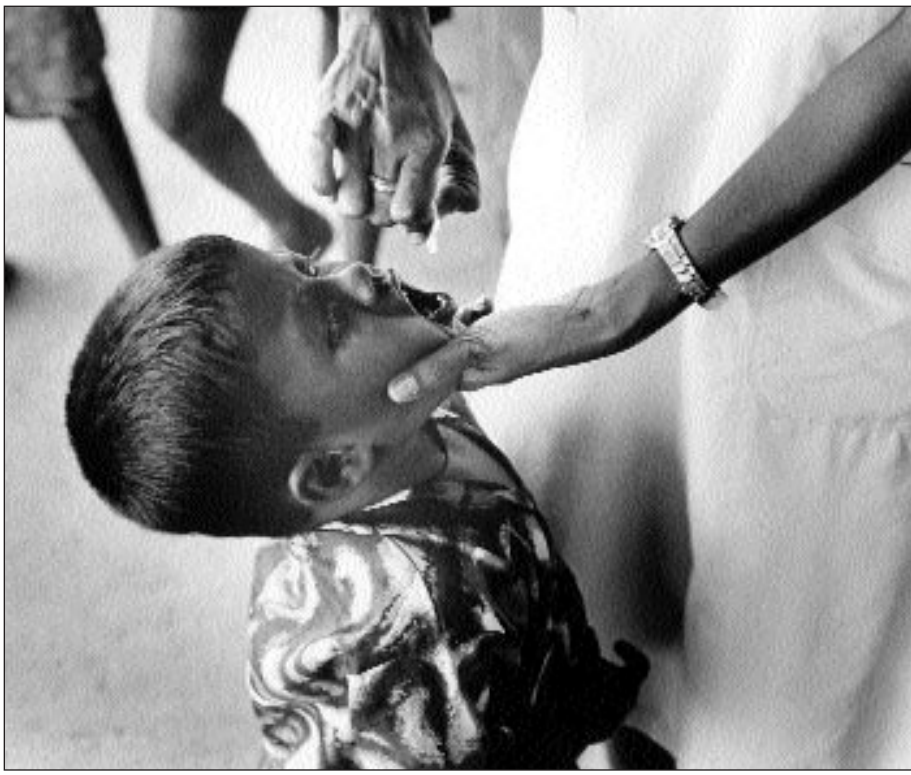
The analytical work performed in the health sector assessment provides the information needed to articulate a set of objectives for the poverty reduction strategy. For an immunization program, the kinds of objectives to be set would usually include the following:

- Increasing traditional EPI coverage overall and for specific groups, especially the poor
- Renewal of the cold chain
- Introduction of safer immunization practices, such as the use of non-reusable syringes, also known as auto-disable syringes
- Introduction of additional antigens
- Increasing the national share of financing of immunization costs
- Provision of information about the benefits of immunizations and immunization schedules to groups that under-use services.

Designing program interventions to implement the strategies chosen

The objectives need to be translated into specific programs, with inputs, activities, and outputs specified and their costs and effects estimated. Program interventions to implement the proposed objectives should become part of the immunization program's strategic plan. The program staff should be able to identify the steps needed, their costs, and their sequence in time for each program or initiative designed to address the objectives.

Increasing overall EPI coverage may require additional vaccines, supplies, personnel, transport, cold chain equipment, and community mobilization efforts. To increase progressively the national share of financing may require the establishment of national budget line items for immunization inputs and a commitment to increase the real (inflation-adjusted) allocations made to the line items over a period of years to achieve self-sufficiency. It is extremely important that the latter be accompanied by an agreement with donors that have been supporting immunizations to shift their support to other cost-effective aspects of the health program, not to decrease their assistance. This, in addition to supporting the relief of the debt, is a commitment already made by donor nations in Cologne.



The costs estimated for each of the chosen strategies should be combined with estimates of their impacts (effectiveness in producing gains in DALYs) to calculate cost-effectiveness ratios. These ratios may then be used to help set priorities among strategies in the case that resources are not sufficient to fund all of them. This step may not need to be taken for an I-PRSP, especially where the traditional set of EPI immunizations are concerned, since they are nearly universally recognized to produce gains in DALYs at low cost.

Specifying program indicators to monitor progress and link it to outcomes

The program information will be used to refine and prioritize the objectives of the poverty reduction strategy so that it fits within the resources available and takes advantage of the most cost-effective opportunities to address poverty.

Once the program is set, indicators must be chosen to correspond to the strategies that are retained. In I-PRSPs, these indicators should be output measures. That is, indicators like changes in service delivery expressed as absolute numbers or rates. For PRSPs, longer-term (say five to ten years) impact indicators should be added to output indicators. Impact indicators are items like changes in infant mortality rates. Examples of output indicators for immunizations are:

- Increases in overall EPI coverage (measured by DTP3) by 5 percent per year
- Increases in EPI coverage of geographically disadvantaged groups by 10 percent per year until the national average rate of coverage is attained by these groups
- Increases in EPI coverage of children in households in the lowest two income quintiles by 10 percent per year until the national rate of coverage is attained by these households
- Introduction of hepatitis B vaccine into the program, such that 50 percent coverage is attained in year one, then the same coverage rate for the traditional EPI antigens is attained in year two and subsequent years
- Cold-chain refrigerators are replaced by CFC-free units at a rate of 25 percent per year (note: this is an input indicator)
- Auto-disable syringes are introduced at a rate of 25 percent of immunizations given per year, such that all immunizations are given with auto-disable syringes in four years
- National financing of vaccines, supplies, and cold-chain equipment traditionally supplied by donors is increased by 10 percent per year, such that self-sufficiency is attained in 10 years

Examples of impact indicators that may be added in PRSPs are the following:

- The infant mortality rate for children in households in the lowest two income quintiles will decrease by 20 per 1,000 in five years (e.g., from 140 to 120)
- The under-five child mortality rate for children in the geographically disadvantaged regions will decrease by 40 per 1,000 in five years (e.g., from 295 to 255)
- The overall infant mortality rate will decline by 10 in five years and by 20 in ten years (e.g., from 90 to 80 to 70)
- Measles cases per year will decline from an average of 5,000 per year over the last five years to an average of less than 1,000 per year over the coming five years.

Conclusion

There is a strong case for including immunizations as part of poverty reduction strategies for most, if not all, HIPCs. The occasion of debt relief and the preparation of interim poverty reduction strategies, followed later by full-fledged PRSPs, offers the opportunity for immunization programs to be strengthened. The additional resources made available by debt relief can be used to increase immunization coverage, particularly for the poor; to improve the quality of services; to add new antigens; and to preserve and ensure the sustainability of the program. The strengthening of immunization programs can be expected to contribute to breaking the negative cycle of poverty and ill health.

Immunization Programs

The strengthening of immunization programs can be expected to contribute to breaking the negative cycle of poverty and ill health.

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Photos: Panos Pictures