Annex O
Health, Nutrition, and Population: Technical Notes

Technical Note O.1  Health, Nutrition, and Population Lifecycle

Introduction to the lifecycle approach
A first step in improving the health (health, nutrition, and population) outcomes of the poor is to assess health, nutrition and population outcomes generally, and among the poor and other disadvantaged groups in particular. This section uses a lifecycle approach to assess what the key risks, interventions, and outcomes are, and describes how they can be defined and measured in practice. A detailed description of the risks, interventions, and outcomes for each stage of the lifecycle is available on the PRSP Sourcebook CD-ROM and at http://www.worldbank.org/poverty/strategies/chapters/health/health.htm. Based on such an assessment and on other implementation and context-specific issues, targets can be set for improvements in health, nutrition, and population outcomes for the population as a whole and for the poor especially.

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The advantages of a lifecycle approach are several. It recognizes that:

- health is cumulative;
- maximum benefit in one age group can be derived from interventions in an earlier age group;
- intervening at one point or a few points is not enough for sustainable improvement of health outcomes among the poor; and
- interventions in one generation will bring benefits to successive generations.

The approach also allows for better use of scarce resources by facilitating identification of key risks and gaps, and for the prioritization of key interventions to help break the poverty–ill health cycle.

The lifecycle approach can be used and applied:

- as an assessment tool, to identify gaps and neglected risks of the poor at different stages in the lifecycle;
- as a project planning tool, to facilitate the prioritization and selection of those interventions that influence critical risks and gaps and that are feasible, affordable, appropriate, and cost-effective;
- as an advocacy and communications tool in the poverty reduction strategy process, to draw attention to the multiple determinants of ill health among the poor;
- to identify synergetic actions within and beyond the health sector.

This technical note reviews the key risks, interventions, and outcomes at different stages of the lifecycle. Particular attention is given to some of the main risks of poverty and to cross-cutting problems that affect all stages of the lifecycle. Only evidence-based interventions that have been tested for effectiveness and feasibility and only those standard measurements that have been agreed on by technical partners have been included (as of March 2001). This document is a work in progress and will be revised on an ongoing basis and updated as new evidence emerges.

**The lifecycle stages**

Figure O.1 shows the key stages in the lifecycle: infancy; the preschool years; the school-age years; adolescence; early adulthood; the reproductive years and periods of pregnancy, in the case of women; and late adulthood.

At each stage of the lifecycle there are risks to health, and associated with each is a corresponding intervention and related outcome indicator. For example, during the first year of life (infancy) there are risks of illness, poor nutrition, growth and development, and death. The focus of this technical note is...
those risks that can be reduced though actions in the health, nutrition, and population sector, with cross references to other sectors. Many key health problems are influenced by multisectoral factors, as evidenced by the case of maternal and child health outcomes (see figure O.2).

Risks throughout the Lifecycle

Each stage in the lifecycle is associated with particular risks. Figure O.3 shows some of the main risks to poor individuals over the course of the lifecycle, some of which disproportionately affect the poor. The risks in pregnancy and early childhood are shown in the upper part, and those in later childhood years, adolescence, and the reproductive periods are shown in the lower part. In addition to the risks highlighted in figure O.3, there are also risks of mortality and morbidity, throughout or at later stages of the lifecycle, associated with malaria, TB, HIV/AIDS, and with noncommunicable diseases such as accidents and injury, diabetes, cardiovascular diseases, mental illness, and cancer. Malnutrition increases the risks of dying from other causes: in children under the age of five in poor communities, malnutrition is associated with 54 percent of all deaths. Nutritional risks include iodine deficiency disorder (IDD) and vitamin A deficiency (VAD) during pregnancy and childhood. Nonexclusive breast feeding is a major nutritional risk factor during the neonatal period. In infancy, growth faltering and poor nutrition, including micronutrient deficiencies (IDD, anemia, and VAD), are some of the critical risk factors of low-income populations. Micronutrient deficiency, anemia, and poor nutrition are risks throughout childhood, school age, adolescence, and the reproductive period.

Key interventions and strategies

Main public health and clinical interventions have been identified at each stage of the lifecycle, as shown for the periods of pregnancy and childhood stages in figure O.4. The main nutrition interventions throughout the lifecycle are shown in figure O.5 and described in the following sections. How to prioritize among all the key interventions will depend on the major risks identified, the gaps identified in addressing these risks, and the status of health, nutrition, and population outcomes among the poor. Packaging of interventions is one strategy for ensuring maximum benefit at a given stage of the lifecycle and to increase efficiency: Figure O.6 illustrates two examples of this: IMCI (integrated management of childhood illness) and FRESH (focused resources on school health). The MINPAK (nutrition minimum package) and IMPAC (integrated management of pregnancy and childbirth) are similar sets of basic strategies, designed to address childhood malnutrition through the health sector and the risks during pregnancy and childbirth.
The Public Health at a Glance fact sheets prepared by the health, nutrition, and population (HNP) network (April 2001) provide useful summaries on most of the proposed programs and interventions discussed here, such as reproductive health; child health, including IMCI; school health; malaria; TB; HIV/AIDS; mental health; and tobacco.

Possible criteria for prioritizing problems and ranking priority interventions identified throughout the lifecycle are:

- the problem disproportionately affects the poor;
- the problem can be significantly reduced among the poor;

Figure O.3. Main Risks Throughout the Lifecycle

Main risks of pregnancy and early life

Pregnancy (mother)
- Anemia
- Eclampsia
- Unsafe abortion
- Ectopic pregnancy
- Maternal death

Pregnancy (child)
- Anemia
- IUGR
- Malformations
- Maternal death

Birth (mother)
- Delivery complications
- Hemorrhage
- Maternal death

Birth (child)
- Low birth weight
- Stillbirth
- Preterm birth
- Birth trauma or death
- Congenital syphilis

Early neonatal period (child)
- Sepsis
- Asphyxia
- Failure to initiate breastfeeding
- Hypothermia

Neonatal period
- Infection
- Poor breastfeeding
- Neonatal death

Infancy
- Poor nutrition
- Poor growth and development
- Frequent illness

Post-partum (maternal)
- Sepsis
- Hemorrhage
- Maternal death

Main risks of childhood, adolescence, and the reproductive period

Reproductive period
- STDs
- Early unwanted/unsafe sex
- Early unwanted pregnancy

Adolescence
- Poor nutrition
- Poor development
- Drug use/abuse
- Violence
- Death

School age
- Poor nutrition, growth and development
- Injury
- Helminth infections
- Abuse and neglect

Childhood
- Poor nutrition growth and development
- Frequent illness
- Injury
- Abuse and neglect
- Death
• the intervention reduces a large problem among the poor as assessed by its prevalence among the poor, by its contribution to the burden of disease and disability of the poor, or by its associated mortality or nonhealth outcomes, such as school performance and work productivity of the poor;
• the intervention strategy is consistent with and contributes to overall poverty reduction;
• the intervention is affordable, effective, feasible, cost-effective, and culturally appropriate in the target population.

**HNP outcome indicators by stage of the lifecycle**

Building on the lifecycle approach, figure O.7 shows some of the main HNP outcome measures during pregnancy, early life, childhood, adolescence, and the reproductive period of the HNP lifecycle. The definitions of these outcome indicators are discussed in the following sections, as are other key indicators during adulthood. Indicators of morbidity and health are less frequently encountered in developing countries than in industrialized ones, and are often considered to be subject to reporting biases that vary with economic status and education. Work is ongoing in this area, however. The major anthropometric measurements during childhood are: underweight, stunting, and wasting rates.

![Figure O.4. Main Reproductive Health Interventions](image-url)
Figure O.5. Main Nutrition Interventions

Nutrition interventions around the lifecycle

- Immediate initiation of breastfeeding
- Exclusive breastfeeding to 6 months
- Adequate complementary feeding from 6 months
- Micronutrient supplementation as necessary
- Continued breastfeeding
- Energy and nutrient adequate diet
- Micronutrient supplementation as necessary
- School nutrition education and micronutrients

- Diet and micronutrients during pregnancy
- Prepregnancy dietary advice for adolescent girls and women
- Adolescent dietary advice and micronutrient supplementation
- School nutrition education and micronutrients

Figure O.6. Two Examples: IMCI and FRESH Start

Main strategies in childhood, adolescence, and the reproductive period

- Reproductive period
  - Essential reproductive health services
  - Contraceptive services
  - STD care

- Childhood
  - Nutrition interventions
  - Disease prevention and management
  - Care for development
  - Accident prevention

- Adolescence
  - Adolescent friendly health services
  - Interventions to promote a safe and supportive environment
  - Nutrition interventions
  - Adolescent development

- School age
  - School health programs

FRESH start
World Bank HNP Poverty Information Sheets

Using demographic and health survey (DHS) data for 48 countries, the World Bank’s HNP Poverty Thematic Group has produced information sheets showing the variations across economic groups of key HNP outcomes and determinants (see table O.1).

Indicator definitions

The definitions of the indicators used are presented below. In general, they follow closely the definitions used by the DHS program.

Health, nutrition, and population status indicators

*Infant mortality rate.* The number of deaths of children under 12 months of age per 1,000 live births. The figures used in the information sheets are based on births in the 10 years preceding the survey.

*Under-five mortality rate.* The number of deaths of children under five years of age per 1,000 live births.

*Percentage of children stunted.* The percentage of children whose height measurement is more than –2 standard deviations below the median reference standard for their age as established by the WHO, the U.S. Centers for Disease Control, and the U.S. National Center for Health Statistics.
Table O.1. Countries with HNP/Poverty Information Sheets

<table>
<thead>
<tr>
<th>Country</th>
<th>DHS Round</th>
<th>Year</th>
<th>Country</th>
<th>DHS Round</th>
<th>Year</th>
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<td>1996</td>
<td>Mali</td>
<td>III</td>
<td>1995/6</td>
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<td>Namibia</td>
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<td>III</td>
<td>1996/7</td>
<td>Nigeria</td>
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<td>1990</td>
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<tr>
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<td>1996</td>
<td>Rwanda</td>
<td>II</td>
<td>1992</td>
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<td>Senegal</td>
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<td>Tanzania</td>
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<td>Bangladesh</td>
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<td>The Philippines</td>
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<td>1993</td>
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<td>Latin America/Caribbean</td>
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<td>III</td>
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<td>Dominican Republic</td>
<td>III</td>
<td>1996</td>
<td>Peru</td>
<td>III</td>
<td>1996</td>
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<td>Guatemala</td>
<td>III</td>
<td>1995</td>
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</table>

**Percentage of children underweight.** The percentage of children whose weight measurement is more than −2 standard deviations (moderately underweight) or more than −3 standard deviations (severely underweight) below the median reference standard for their age as established by the World Health Organization, the U.S. Centers for Disease Control, and the U.S. National Center for Health Statistics.

**Percentage of mothers with low body mass index (BMI).** The percentage of women whose BMI is less than 18.5, where BMI is defined as weight in kilograms divided by the square of height in meters and is a measure of adult nutritional status. In some countries the BMI is presented for all sample women, while in other countries the figure is available only for mothers of children under five years of age.

**Total fertility rate (TFR).** The average number of births a woman could expect to have during her lifetime if she followed observed levels of fertility for her age group at every age. The TFR is calculated as the sum of average annual age-specific fertility rates for all reproductive age groups (usually at least 13 and at most 50 years old) during the three years preceding the survey. For each country, the TFR is calculated based on a sample of ever-married women and then extrapolated by DHS to all women of reproductive age for that country.

**Adolescent fertility rate (age-specific fertility rate for women 15–19 years old).** The average number of births a woman age 15–19 could expect to have during her lifetime if she followed observed levels of fertility for that age group, expressed per 1,000 women aged 15–19. As with the TFR, the adolescent fertility rate is calculated as an annual average for the three years preceding the survey. The adolescent fertility rate is calculated based on a sample of ever-married women and then extrapolated by DHS to all women ages 15–19 years for the country concerned.
Health, nutrition, and population service indicators

Immunization rate. The percentage of surviving children aged 12–23 months who received a measles vaccine; three doses of DPT and an oral polio vaccine; all vaccinations—namely, BCG, three doses of DPT and oral polio, and measles; and no vaccines at all. The figures are a combination of information recorded on the child’s vaccination card, or, in cases where a card was not available to show the interviewer, as reported by the mother.

Diarrhea.

- **Prevalence.** The percentage of surviving children under five years old who had diarrhea in the two weeks preceding the survey, where diarrhea is defined by the mother’s report of the presence of loose stools and, in some but not all surveys, the frequency of stools in a day.
- **Treatment.** The percentage of children with diarrhea in the past two weeks who received oral rehydration therapy (ORT), which includes oral rehydration salts, recommended home fluids, or increased liquids; the percentage who were taken to any medical facility for treatment, defined as a private doctor, mission/hospital clinic, other private hospital/clinic, pharmacy, or a public facility; and the percentage of those seen medically who were taken only to a public facility, defined as a government hospital, government health center, or government dispensary.

Acute respiratory infection (ARI).

- **Prevalence.** The percentage of surviving children under five years old who had a cough accompanied by rapid breathing in the two weeks preceding the survey, as defined and reported by the mother.
- **Treatment.** The percentage of children with a cough and rapid breathing in the preceding two weeks who were taken to any medical facility for treatment; and the percentage who were taken to a public facility. Definitions for facilities are the same as those for the treatment of diarrhea.

Antenatal care. The percentage of births in the five years before the survey for which a woman received at least one antenatal care consultation from a medically trained person, defined as a doctor, nurse, or nurse-midwife; at least one antenatal care consultation from a doctor; at least one antenatal care consultation from a nurse or nurse-midwife; and two or more antenatal care consultations from a medically trained person.

Delivery attendance.

- The percentage of births in the five years prior to the survey that were attended by a medically trained person, defined as a doctor, nurse, or nurse-midwife; a doctor; or a nurse-midwife.
- The percentage of all deliveries in the five years prior to the survey occurring in a public medical facility, defined as a government hospital, government health center, government maternity center, or other country-specific public sector facilities; a private medical facility, defined as a mission hospital/clinic or other private hospital/clinic; and at home, defined as own or any other home.

Use of modern contraception. The percentage of married women and men who report using any modern means of contraception, defined as male/female sterilization, oral contraceptive pill, contraceptive injection, intrauterine device, male/female condom, diaphragm, cervical cap, or contraceptive jelly or foam. For some countries, the sample includes couples in consensual unions. Information on male contraceptive use is not available for all countries.

Knowledge of HIV/AIDS prevention. The percentage of women or men who report that they know of HIV/AIDS and know of at least one of the following means for preventing HIV/AIDS through interruption of its sexual transmission route: abstinence, using a condom, avoiding multiple sex partners, avoiding sex with prostitutes, and avoiding unprotected homosexual sex. In most cases, all survey respondents, regardless of marital status, are asked this question; where a particular survey has only an ever-married sample, the data are extrapolated by DHS to all men and women. This information is not available for men for some countries, and not available for either men or women for some countries.

Child deaths in Bolivia are preventable

Results of Bolivia’s largest mortality survey show that Aymara Indian children under five years of age are dying of easily treatable diseases. The survey, conducted by BASICS in El Alto, outside La Paz, was designed to answer two questions: why are Aymara children dying? and what prevents them from
receiving life-saving care? To answer these questions, 271 caregivers of children who had died were interviewed to determine what behaviors may have contributed to the children’s deaths.

El Alto is a peri-urban community of approximately 500,000, most of whom are Aymara Indians who have migrated to the city from Bolivia’s rural areas. Literacy is low. Traditional attitudes, beliefs, and practices are a major part of everyday life. Traditional medicine, with its belief in supernatural causes of physical illness, is a common source of health care outside the home. In this setting, treatable illnesses such as diarrheal disease and acute respiratory infections are the main causes of death among Aymaran children.

During the survey interviews, each caregiver gave a detailed account of the events surrounding the death of the child, the symptoms the child displayed, the actions of the caregiver, and the types of help or services that were sought. If the caregiver consulted formal health care services, the interviewer reviewed the medical records.

These stories revealed that the caregiver often was unable to recognize the symptoms of serious illness. In most cases, however, it did not matter whether or not the caregiver recognized symptoms: no outside care was sought. If symptoms were recognized, many times it was too late. The caregiver often did not know where to go for help or sought the help of traditional healers. Often these treatments did nothing and may have, in some cases, contributed to a child’s death. Long-held attitudes and beliefs, combined with a lack of knowledge and awareness of childhood illnesses, were barriers to seeking and receiving proper health care. The stories painted a picture of a rapid march from illness to death, usually within three days of the onset of illness.

The results of the survey showed a sad and alarming trend. Ninety percent of the child deaths examined in the survey had occurred by age two. One-third of these deaths were in infants less than a month old, and nearly half of these died in their first day of life.

BASICS and Ministry of Health (MoH) officials examined the accounts to identify intervention points throughout the caregiving process that could help prevent child deaths in the future. In addition, the survey process enabled BASICS and the MoH to design a methodology for gathering child mortality data using community participation, an important step in helping the MoH keep abreast of health care needs.

The methods and results of the survey are available through the Information Center at the BASICS Project, Suite 300, 1600 Wilson Boulevard, Arlington, Virginia, 22209, and on-line at http://www.basics.org/highlight/M&E/Highlights_M&E_1.htm

**Technical Note O.2 An Illustrative Example of Using Information about Clients to Better Manage Vaccine-Preventable Illness in Rural India**

The conceptual framework suggested in the main chapter lends itself to practical applications for addressing the health of the poor. The following case illustrates how understanding household actions and community risks can help policymakers develop pro-poor sectoral policies. Using a diagnostic and policy development framework similar to the logical framework suggested in the main chapter, this brief example illustrates how starting with outcomes and outputs for the poor, then listening to vulnerable communities and linking findings to the health delivery system, can result in practical policies for reaching the poor.

It is important to note that the work on strengthening immunization in India includes other important factors not discussed here. Selectivity was used to keep this example simple and targeted. A more complete presentation of the work is provided in project documents, including the World Bank’s Project Appraisal Document (World Bank, Project Appraisal Document, India: Immunization Strengthening Project, March 30, 2000, Report No. 19894-IN).

**Focusing on the outcomes of the poor**

As indicated in the main chapter, there is a threefold difference in the child mortality rate amongst the richest fifth of households in India and the poorest fifth. The income-related differences are similar for infant mortality. Burden of disease findings link the high levels of infant and child mortality to communicable and vaccine-preventable illnesses. In other words, if the children of poor families in India are dying
at a much higher rate than those of wealthier families, there is a likelihood that preventive life-saving services are not reaching the children of the poor.

Looking at the health sector output, immunization, that most closely links the system to infant and child mortality, three nationally representative household surveys in 1993, 1996, and 1998 confirm that the children of poor and socially vulnerable families in India are least likely to be immunized. Table O.2 shows the level of inequality in a number of immunization measures. While the overall level of immunization coverage appears to be very low, the level of inequality is even more stark. The last two rows in table O.2 show that the children of the wealthiest 20 percent of households in India are four times as likely to have received some vaccinations than children of the 20 percent of poorest families, and three times as likely to have received all routine vaccinations.

**Listening to vulnerable families**

The critical household action needed for a child to be immunized is for the household to seek a health care provider that has the inputs needed to perform the immunization, including vaccines, cold-chain equipment, training, and supplies. For the household action to take place, the following interrelated conditions should exist:

- Decisionmakers in the household need to know about immunization and should believe that it is important for child survival and well being.
- Financial resources are needed for the household to seek care. Money is needed for transportation, productive time lost in seeking the provider, and payments for the provider (official or unofficial).
- The household needs to have physical access to a provider in whom they hold some element of trust.

To help determine the relative importance of these three conditions in India, the 1998 household survey asked households with children that had not been immunized why they did not seek this life-saving preventive service. While all three conditions listed above were mentioned, two specific answers—both related to knowledge—accounted for more than 63 percent of responses: 30 percent of respondents were not aware of the need for immunization and 33 percent were not aware of the time and place that immunizations were to be provided.

Once it has been established that the information gap is an important determining factor, it is essential to find out how to reach the poor and socially vulnerable with behavior change communication interventions. The 1998 household survey provides a partial answer by examining the likely interactions between the targeted group and the health system. In the case of the poorer states in India, the most likely point of contact between the health system and the poor and socially vulnerable groups is the auxiliary nurse midwife (ANM). ANMs are the primary source of immunization coverage for the poorest, least educated, and lower castes, and would appear to represent the most appropriate service delivery mechanism to target for delivering immunizations and information.

Passive forms of listening to the poor, through household and other surveys, can provide policymakers only with partial answers. There is a need to supplement this with more active forms—qualitative data collection—in order to get a better and deeper understanding of the determinants of and constraints facing household actions. In the context of immunization in India, the 1998 survey identifies ANMs as an important medium for health communications, but other important information mediation mechanisms also exist. Social assessment work is useful in seeking to explore more fully how knowledge is disseminated to the target clients. Listening to those clients can inform the design of a communication strategy to address the information gap and increase the probability that poor households seek immunization for their children.

**Table O.2. Demographic and Health Survey 1992/93, Wealth and Immunization Coverage, India**

<table>
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<tr>
<th>Immunization type</th>
<th>Poorest 20%</th>
<th>2nd poorest 20%</th>
<th>Middle 20%</th>
<th>2nd richest 20%</th>
<th>Richest 20%</th>
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<tr>
<td>Measles</td>
<td>27.0</td>
<td>31.0</td>
<td>40.9</td>
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<td>All vaccinations</td>
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<td>25.1</td>
<td>34.1</td>
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<tr>
<td>No vaccinations</td>
<td>44.7</td>
<td>38.9</td>
<td>28.8</td>
<td>18.8</td>
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</table>
Community influences matter, too

The work, highlighted above, on improving the reach of life-saving immunizations represents an output serving the desired HNP outcome of children free of vaccine-preventable diseases. The provision of vaccines is only one of several interventions that can contribute to achieving this outcome, however. Risk analysis indicates poor households to be especially vulnerable to vaccine-preventable communicable diseases because of the sanitation conditions in poor rural communities and urban slums, for example. While the health sector has limited scope for addressing sanitary conditions, working with other elements of the Indian Government and other development partners can help decrease the risk for children in poor households. An example of collaborative efforts is the creation of geographic information systems on the poverty and disease burden that can be used to improve resource allocation. Resources managed by health and infrastructure activities can then be cotargeted at the most vulnerable segments of society.

The role of players in the health system

The discussion of the role of the auxiliary nurse midwife in delivering both information and immunization to families in rural India assumes a dominant service delivery role for the Indian Government. Simple market analysis can shed more light on the roles of the private and public sectors and on possible future partnerships.

While more than 70 percent of total health spending for curative care in India is used to purchase private health services, the picture is different for the provision of immunization services. The 1998 household survey shows the private sector to play a very small role in the provision of immunization, especially in rural India. State-level data show private sector delivery of immunization services ranging from a high of about 23 percent in Andhra Pradesh, Kerala, and Tamil Nadu to less than 5 percent in Orissa, Madhya Pradesh, and West Bengal. Moreover, most private sector delivery is focused on the urban sector. Market analysis provides some answers for the reluctance of private providers to provide immunization services. Providers identified the cost of buying and maintaining cold storage equipment and the low returns from limited demand as important factors in the decisions not to provide the service.

The role of the private sector in delivering immunizations for the rural poor is limited, especially in the poorer states. The short-term strategy should therefore focus on making the public sector more effective in service delivery while using both private and public sector actors to address the informational gaps that are largely responsible for the low demand for life-saving services.

Summary

Starting with household survey data on immunization in India, the household perspective focused analysis and guided policy development by tracing the policy levers likely to positively impact household actions. Monitoring and evaluation systems can next be developed by focusing limited resources on the most critical determining factors. By recognizing the added risks created by environmental factors in poor communities, inputs typically outside the health sector can be cotargeted to maximize the probability of achieving a shared health outcome.

Technical Note O.3 An Example of How to Approach Public Expenditure Analysis in the Health Sector

Figure O.8 at the end of this technical note illustrates a process for undertaking a public expenditure analysis in health. The steps are outlined below:

Step 1: The Budget (Allocative Efficiency)

1. In health, unlike in the other social sectors, there are some pure (or nearly pure) public goods that virtually require public financing if they are to be provided adequately. These include public health and preventive services, whose benefits reach the public at large as opposed to being captured by specific individuals; for example, vector control, communicable disease surveillance and management, and immunizations. Any slack in these programs will not be taken up by private expenditures. These are perhaps the highest-priority expenditures.
2. The next level of importance is basic clinical and acute services. This infrastructure, or something like it, is required to provide public health services and to provide one outlet for subsidized health services for the poor (this could also be funded through NGOs or private providers, but typically is not). An efficient clinic system, characterized by a reasonable level of quality and patient satisfaction, is the next priority.

3. Finally, higher-level, costly hospital services provide a measure of safety to the population in case of catastrophe. In a resource-constrained environment of a low-income country, as much of the cost of these services as possible needs to be shifted off the government budget or it will crowd out (1) and (2).

The benefit structure of (1) and (2) tends to be pro-poor, and the impact can be enhanced through geographical targeting. Level (3) is almost always skewed toward the rich, the more so the poorer is the country. There are no exact standards for the proportion of funding that should go to these different components of expenditure. However, it is important on grounds of both allocative efficiency and equity to properly fund public health services and basic acute services as a matter of priority. The residual category should be hospital services, and that spending could be replaced by direct cash subsidies to the poor and others who are unable to adequately insure themselves. Unfortunately, in public spending

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**Figure O.8. Example of a Process for Undertaking a Public Expenditure Analysis in Health**

**Step 1**

**THE BUDGET: Economically meaningful expenditure/program classifications**

<table>
<thead>
<tr>
<th>Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public health/preventive services</td>
</tr>
<tr>
<td>Clinics/basic acute services</td>
</tr>
<tr>
<td>Hospitals/catastrophic services</td>
</tr>
<tr>
<td>Insurance/subsidies for risk sharing</td>
</tr>
</tbody>
</table>

**Step 2**

**ROUGH ANALYSIS: Inputs, outputs, client satisfaction, equity**

<table>
<thead>
<tr>
<th>Allocative Efficiency</th>
<th>Efficiency of Input Use</th>
<th>Equity</th>
<th>Inter-Governmental Fiscal Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public /private goods</td>
<td>Administrative costs</td>
<td>Incidence of expenditures</td>
<td>Scope of federal, provincial, community roles</td>
</tr>
<tr>
<td>Social/private returns</td>
<td>Inputs: Salaries vs. other expenditures</td>
<td></td>
<td>Financing key public health activities across jurisdictions</td>
</tr>
<tr>
<td></td>
<td>Volume of outputs</td>
<td></td>
<td>Incentive structure of fiscal relations</td>
</tr>
<tr>
<td></td>
<td>Financing vs. provision</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Step 3**

**SIMULATIONS: Recommend changes to improve efficiency, equity, and federal role**

**Simulate the impact in a three- to five-year rolling expenditure program to improve allocations, efficiency, and incentives**

**Step 4**

**IDENTIFY SHORT- AND LONGER-TERM ISSUES: Special topics for continued expenditure monitoring**

<table>
<thead>
<tr>
<th>Immediate Concerns</th>
<th>Medium-Term Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome measures</td>
<td>Institutional reform to improve accountability, for example, hospital autonomy</td>
</tr>
<tr>
<td>Program budgeting</td>
<td>Development of insurance and financial instruments for risk sharing</td>
</tr>
<tr>
<td>Monitoring expenditure and tax incidence</td>
<td>Contracting with NGOs and other providers</td>
</tr>
<tr>
<td></td>
<td>Improving federal/provincial/municipal fiscal relations in social sectors</td>
</tr>
</tbody>
</table>
hospitals tend to be the primary category of expenditure and the two more important categories, public health and basic clinical services, tend to be the residual categories.

**Step 2: Analysis of Efficiency**

Step 1 addresses technical and input efficiency. The next step is to address how this might be translated into a public expenditure review:

1. Administrative costs are usually much less than 10 percent of the health budget. Red flags should start emerging, however, if costs exceed even 5 percent.

2. Often there is a disaster on the input side. In the 1980s in Peru, salaries consumed nearly 100 percent of expenditures at the clinic level, so the system delivered virtually nothing more than the warm bodies of nurses and doctors, who were able to produce little without other inputs. In the high-salary, expensive U.S. health system—which nevertheless must be able to deliver services to attract patients in a competitive market—salary expenditures at the hospital level tend to hover around 50–55 percent of costs. In developing countries, a ratio this low is rare. To reduce the proportion paid in salaries would require either that budgets rise for non-salary costs or that salary costs be cut. Either way, to change the input mix into something that can deliver services would require radical reallocations in the expenditure patterns of most developing countries.

3. Utilization is an important but rarely addressed issue in the efficiency of government services, and one that is often addressed solely on the input side. Are there any patients? If a doctor or nurse is seeing just four or five patients a day, or if a hospital is at 30 percent bed occupancy, the government is clearly wasting a share of its health budget. OECD physicians see between 30 and 40 patients a day and hospitals should on average have at least an 80 percent bed occupancy level.

   A problem in poor countries that lack adequate transportation infrastructure is that the worst utilization statistics will be in rural areas. Utilization analysis can help by making the efficiency cost versus equity-enhancing tradeoffs of such decisions explicit. Even in the most tightly constrained system, there are often large potential efficiency gains that can be made through employing alternative contracting mechanisms and closing nonperforming assets to produce a smaller system that can function properly.

4. It is usually instructive to mount a small study within a country to compare the performance of different types of service providers (government, private, charitable) working within the same environment. This can be done reasonably fast and inexpensively.

**Analysis of equity**

Incidence analysis of government expenditures in health, however crude, is absolutely essential. At a minimum, the different levels of service need to be analyzed (public health, primary, secondary, and tertiary).

**Intergovernmental (and facility) fiscal and managerial relations**

Even in unitary political systems, a fully centralized governmental health system makes little sense. Gains can be made by moving money and decisions to the local political and facility levels, as long as this is accompanied by proper performance measures to hold the lower levels accountable. Many health risks and conditions vary substantially by geographical location, and delivery of personal health services depends heavily on individual contacts. These characteristics create benefits from local decisionmaking. In federal systems, which level of government funds what, where the tax base lies, and the role the federal level plays in providing equalization grants among subnational governments are key topics that strongly affect health policy.
Steps 3 and 4: Simulations and longer-term issues

At the very least, any proposed changes in budget allocations should come with simulations showing their expected impact on efficiency and distribution of subsidies, a monitoring framework for assessing the impact in practice, and alternatives for decisionmakers. In addition to illustrating the proposal, these simulations can help those preparing an expenditure proposal to refine and simplify it.

Public expenditure on health: Who benefits?

Introduction

Public subsidies for health services are often seen as a means of improving HNP outcomes of the poor. A fairly undemanding criterion for a successful subsidy program would be that without it, would the distribution of health service utilization across income groups be more unequal; that is, skewed toward the better-off? In this sense, public subsidies for health have probably been a success. In Indonesia, for example, private expenditure on health care is far more unequally distributed across income groups than income, which in turn is more unequally distributed across income groups than public health subsidies (Van de Walle 1995). A more demanding criterion would be that public subsidies for health services ought to be targeted on those who need health services most—presumably the poor. In this sense, public subsidies for health services in developing countries have, for the most part, been a failure. One of the most spectacular failures in this respect is Guinea, in which the poorest quintile received only 4 percent of public subsidies for health, while the richest quintile received 48 percent (Castro-Leal and others 1999). This technical note sets out the techniques for assessing the incidence of benefits (benefit-incidence analysis, or BIA) and reports some key results for the PRSPs.

Benefit incidence analysis

The aim of a BIA is to assess how different income groups compare in terms of the amount of health subsidy they receive. The exercise involves coupling household survey data (containing information on the utilization of different types of service by people with different incomes) with aggregate data on subsidies for different types of service.

Table O.3 shows the average number of primary care visits per income quintile in Vietnam. These data are obtained from a household survey, and households have been ranked by income into income quintiles. The column headed “subsidy per visit” indicates the amount of subsidy associated with each primary care visit. This is computed from the data in the table. The total net subsidy is simply the total gross subsidy less any cost recovery, and the net subsidy per unit is the total net subsidy divided by the number of units of utilization. The total subsidy per quintile is the average number of units of utilization multiplied by the per unit net subsidy. The same exercise can be undertaken for other subsectors (see table O.5). The total subsidy for each quintile is then simply the sum of subsidies for each of the subsectors. In the case of Vietnam, the total health sector subsidy is decidedly pro-rich. This obviously reflects the pro-rich distribution of subsidies to the hospital sector and the relative importance of the hospital sector in the total subsidy—in Vietnam, more than 60 percent of the total subsidy went to the hospital sector. The fact that primary care in Vietnam is so unequally distributed ultimately matters little, since both outpatient and inpatient care utilization are so heavily skewed toward the better-off.

Table O.3. Distribution of Subsidies for Primary Care in Vietnam

<table>
<thead>
<tr>
<th>Quintile</th>
<th>Visits</th>
<th>Subsidy per visit</th>
<th>Total subsidy</th>
<th>% subsidy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poorest</td>
<td>2,264</td>
<td>2.51</td>
<td>5,678</td>
<td>19%</td>
</tr>
<tr>
<td>2</td>
<td>3,396</td>
<td>2.51</td>
<td>8,517</td>
<td>29%</td>
</tr>
<tr>
<td>3</td>
<td>2,830</td>
<td>2.51</td>
<td>7,098</td>
<td>24%</td>
</tr>
<tr>
<td>4</td>
<td>2,244</td>
<td>2.51</td>
<td>5,678</td>
<td>19%</td>
</tr>
<tr>
<td>Richest</td>
<td>1,132</td>
<td>2.51</td>
<td>2,839</td>
<td>10%</td>
</tr>
<tr>
<td>Average</td>
<td>2,377</td>
<td>2.51</td>
<td>5,962</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11,887</td>
<td></td>
<td>29,810</td>
<td></td>
</tr>
</tbody>
</table>

Table O.4. Subsidies and Cost Recovery for Primary Care in Vietnam

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health costs (m dong)</td>
<td>31,810</td>
</tr>
<tr>
<td>Fees (cost recovery) (m dong)</td>
<td>2,000</td>
</tr>
<tr>
<td>Net subsidy (m dong)</td>
<td>29,810</td>
</tr>
<tr>
<td>Visits (m)</td>
<td>11.887</td>
</tr>
<tr>
<td>Subsidy per visit (dong)</td>
<td>2.51</td>
</tr>
</tbody>
</table>


Table O.5. Distribution of Health Sector Subsidies in Vietnam

<table>
<thead>
<tr>
<th>Quintile</th>
<th>Primary</th>
<th>Outpatient</th>
<th>Inpatient</th>
<th>Total</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5,678</td>
<td>46,844</td>
<td>105,045</td>
<td>157,567</td>
<td>12%</td>
</tr>
<tr>
<td>2</td>
<td>8,517</td>
<td>69,557</td>
<td>134,855</td>
<td>212,929</td>
<td>16%</td>
</tr>
<tr>
<td>3</td>
<td>7,098</td>
<td>78,074</td>
<td>198,733</td>
<td>283,905</td>
<td>21%</td>
</tr>
<tr>
<td>4</td>
<td>5,678</td>
<td>113,562</td>
<td>177,440</td>
<td>296,680</td>
<td>22%</td>
</tr>
<tr>
<td>5</td>
<td>2,839</td>
<td>195,894</td>
<td>193,055</td>
<td>391,789</td>
<td>29%</td>
</tr>
<tr>
<td>Average</td>
<td>5,962</td>
<td>100,786</td>
<td>161,826</td>
<td>268,574</td>
<td>100%</td>
</tr>
</tbody>
</table>


Concentration curves and indices

The results of a BIA can be plotted using concentration curves, as in figure O.9 (Van Doorslaer and Wagstaff 1992). These plots the cumulative percentage of the sample, ranked by income (horizontal axis) against the cumulative percentage of subsidy received (vertical axis). If subsidies are distributed equally across income groups, the concentration curve will coincide with the 45-degree line, or line of equality. In the case of primary care subsidies, the concentration curve starts out below the 45-degree line and then rises above it, reflecting the fact that the bottom quintile gets less than 20 percent of the subsidy but the second and third get more than 20 percent. All the other subsidy concentration curves lie below the 45-degree line, reflecting the pro-rich bias in utilization in Vietnam.

A natural measure of the degree to which the subsidy is biased toward or against the poor is the concentration index, defined as twice the area between the concentration curve and the 45-degree line.

Figure O.9. Concentration Curves for Subsidies in Vietnam
This is positive when the concentration curve is, on balance, below the 45-degree line and negative when it is above (Kakwani and others 1997). A negative concentration index thus indicates a pro-poor subsidy, and a positive index indicates a pro-rich subsidy.

Figure O.10 shows concentration indices for subsidies to the health sector for various countries. In most countries, subsidies benefit the better-off most. The exceptions are mostly Latin American countries, but the results for some of these countries are partial in the sense that they capture only part of the subsidy program (the Ministry of Health subsidies, but not the Social Security subsidies). Exceptions are Honduras and Peru, where all health subsidies are included. Honduras shows a mildly pro-poor pattern and Peru a pro-rich pattern.

Figure O.10. Concentration Indices for Health Subsidies


Figure O.11 shows the different bias in hospital and primary care subsidies. In almost all countries, the pro-rich bias is less in the primary care sector than it is in the hospital sector: indeed, in four countries, hospital subsidies are pro-rich and primary care subsidies pro-poor.

Figure O.12 compares the distribution of health sector subsidies with the distributions of income and private health spending in Indonesia. The distribution of private health spending is more unequal than the distribution of income, implying that the income elasticity of demand for (private) care in Indonesia is less than 1 (Lambert 1993). If, in the absence of a subsidy program, the income elasticity of demand for health care generally were also less than 1 the implication would be that health care is distributed less equally than health subsidies under the existing subsidy program. Subsidies may not be well targeted to the poor, but it is likely that health care is more equally distributed under an imperfect subsidy program than it would be without it.
Technical Note O.4  Behavior Change Communications, Households, and Service Providers

Households
At the heart of achieving better health, nutrition, and population outcomes are the actions of individuals and households. This is true for interactions between individuals and the providers of HNP services and
for daily actions such as feeding and caring for children, using contraception to achieved desired family size, maintaining a hygienic and safe environment in the residence, and managing physical activities. For public policy to have a sustainable effect in improving HNP outcomes, it is important to recognize the significance of household actions, to measure when and where these actions are not taken by families, to understand the reasons for the lack of appropriate action, and to devise strategies to address those reasons.

In many cases, the main reason for lack of action is lack of knowledge. For example, in the case of immunization of children in rural India, the lack of knowledge about immunization (both the importance of immunization and its availability) play a major role in poor families not seeking the service from providers. In such cases, public policy should recognize the importance of addressing the demand for the service, identify the population groups that are not acting, establish the type of knowledge needed, explore the best ways to convey this knowledge to the target populations, and ensure that such efforts are financed.

It is also important to note that household actions related to HNP outcomes are affected by various factors, such as household economic and social standing, urban/rural location, physical and social access, and maternal education. Promoting healthy behavior requires cross-sectoral collaboration between government departments and partners in development. The steps for implementing behavior change communication (BCC) interventions include:

1. Prepare a situation analysis to identify vulnerable population groups and knowledge gaps. Collect data, both quantitative and qualitative, from services coverage, household surveys, and focus group discussions with beneficiaries and other stakeholders to identify the knowledge levels, attitudes, and practices of the different population groups.
2. Analyze data and consult with stakeholders to identify barriers to the use of health, population and nutrition services; understand reasons for poor health outcomes and establish why gaps in outcomes exist between different population groups.
3. Assess the reach and impact of the various media and of existing information, education, and communication (IEC) programs carried out by the government and its partners, such as NGOs. Multiple communication channels may be required to raise knowledge to appropriate levels, and the necessary intensity of the effort may vary for different population groups. The media alone will not be adequate for reaching some groups. It may be possible to utilize interpersonal communications more effectively. Explore the role of peers and other “influencers” in bringing about behavior change.
4. Build partnerships with NGOs, community groups, professional organizations, youth networks, and news and entertainment media.
5. Make health promotion and BCC an integral part of health programs. Ensure adequate budget allocations.
6. Develop cross-sectoral linkages with other key sectors, such as education and water and sanitation.

**Service providers**

The recent Voices of the Poor exercise conducted for the Year 2000 World Development Report confirmed that vulnerable groups are often excluded from health services and that they suffer from poor interaction with health providers. Studies also confirm that health providers can play a positive role in transmitting important information and motivating healthy behavior. BCC efforts should therefore also target health providers, with the goal of making health services accessible, responsive, and sensitive to the needs of clients. On the provider side, steps include:

1. Emphasize health education in national health policy, programs, and services, and ensure adequate budget allocation.
2. Build the political will and advocacy for cross-sectoral health education in national plans and policies.
3. Identify the appropriate health messages and the opportunities for health services to communicate these messages and promote healthy behavior.
4. Include counseling and health education as an important component of health services.
5. Train health providers in interpersonal communication and use contacts with clients to promote healthy behavior. Sensitize health providers to gender issues and the needs of vulnerable groups.

HNP Benchmarking, Monitoring, and Evaluation

This section discusses the related areas of benchmarking, monitoring, and evaluation. Although the areas overlap, for the purposes of the PRSP they can be defined as follows:

- **Benchmarking** involves comparisons among countries, or among regions or subgroups within a country, or over time with respect to key HNP outcome or system performance indicators, particularly in relation to the poor. These can be cross-sectional (level) or dynamic (rates of change). International benchmarking allows comparisons among similar countries; cross-sectional benchmarking identifies gaps within a country between rich and poor, among regions, or among ethnic groups. Comparing changes over time (dynamic) helps identify areas of progress and difficulty. Benchmarks can provide guidance for further analysis and priority interventions and can also help generate interest among political leaders for action.

- **Monitoring** involves the periodic assessment of key intermediate indicators that are causally linked to desired outcomes. The indicators must be measurable with some degree of reliability on at least an annual basis. Benchmarking can overlap with monitoring, and the terms are sometimes used interchangeably. Benchmarking should include key outcome indicators, however, which may not be monitorable on an annual basis.2

- **Evaluation** seeks to understand the factors behind the success or shortcomings of a given intervention or interventions. Although often taking place ex post, evaluation studies may be useful prior to an intervention; for example, to understand why vaccination rates for the poor remain low.

The process for developing background analysis (including benchmarking), monitoring indicators, and evaluation priorities should proceed in several steps. First, Bank staff, government, and partners should collect and analyze relevant qualitative and quantitative information, from international sources as well as from the country in question, to establish priorities and targets for improving HNP outcomes for the poor. Relevant quantitative information can be used to establish benchmarks. Second, the borrower’s monitoring and evaluation capacity should be assessed, including the quality, timeliness, and use of data and evaluative information for decisionmaking. Third, the results of this assessment should guide both the indicators chosen and the approaches used for program monitoring. Fourth, government and partners should strengthen or establish appropriate systems to ensure that key monitoring indicators are collected and analyzed in time for annual reviews. Fifth, partners should establish a medium-term strategy to strengthen evaluation capacity (public and private) and the results orientation of health-oriented activities.

Collect and analyze baseline information and data

The first step is to collect, analyze, and present existing information regarding the health status of the poor and its determinants. Some data are likely to be already available from the World Bank and other international data sources, but additional work will be necessary to gather and analyze information at the country level. Possible activities include the following, by information type:

- **International data.** A starting place for benchmarking is international comparisons among similar countries (by region, GDP/CAP, or even health expenditure levels), beginning with the Development Assistance Committee (DAC) indicators that relate to HNP. Chapter 18, “Health, Nutrition, and Population” describes some of the information that is available centrally at the Bank. These include HNP poverty data sheets that have been compiled for more than 40 countries, and HNP statistics.3 The poverty data sheets allow comparisons among the rich and poor within countries, and between similar countries.

- **National household surveys** such as demographic and health surveys (DHSs), living standard measurement surveys (LSMSs), and national censuses are conducted every several years in many developing countries. These can be used to: (1) provide a breakdown of key health, nutrition, and population outcome indicators according to income quintiles;4 (2) provide time-trend comparisons for key indicators;3 and (3) perform demographic or econometric analysis regarding the determinants of key outcome indicators.6
- **Other household surveys and analyses** in particular regions, or on specific issues, may have been carried out by government, donors, or other researchers. These may or may not be formally published, and might be collected and reviewed during a mission by local staff or partners. Those that might provide insight into the health-seeking behavior of the poor, the impact of cost-recovery and other expenses, and other health, nutrition, and fertility practices could be particularly useful.

- **Health information systems (HISs)** collect routine data on facility attendance, as well as various other indicators such as immunizations, deliveries, and specific diseases. These data are rarely complete at the national level, and vary considerably in quality among countries. Even if incomplete, however, they may be able to provide some indication of trends. Facility data are unlikely to provide information on the disease burden or facility use by income, but can provide trends in facility use and possibly in the treatment of major diseases that affect the poor. If central data are unreliable, health service data can be directly collected at the district or facility level, but this is time consuming. The main problem with HIS data is that they provide no information on who is not coming for health services and why. This requires household surveys or qualitative assessments.

- **Financial information.** If national health accounts have already been prepared, these should prove useful. Public expenditure reviews by the Bank may also provide good background data, but may need to be updated. A comprehensive picture of health spending, including benefit incidence analysis, requires household expenditure data, but analysis of government budgets can provide important additional insight.

- **Situation analysis surveys** of health or population facilities and reviews of specific health programs (often donor-sponsored), can be an important source of information on service quality, and may also incorporate client and provider interview. Situation analyses have typically been conducted for family planning services, but may be available for other services. These generally do not give poor/nonpoor breakdowns.

- **Research studies** into specific diseases that affect the poor and operational studies regarding the effectiveness of key services are sometimes available, either published or unpublished. In some countries, researchers or NGOs also have done studies on the effect of cost recovery on the poor (these are of variable quality).

- **Beneficiary assessments**, ethnographic studies, and other qualitative assessments are increasingly carried out by the Bank or its partners, including donors, NGOs, academic institutions, and government ministries. Many of these assessments focus on health and the poor.

- **Other sources of information** include nutrition or food security monitoring systems; for example, the famine early warning system in southern Africa.

### Assess the borrower’s HNP monitoring and evaluation capacity

A review of the borrower’s monitoring and evaluation need not be exhaustive, but it is important. Often donors—including the Bank—will select indicators without first assessing whether and how data will be collected, their reliability, and whether or not the information will influence real decisions (including budgets). Several types of data collection systems are relevant. Quantitative systems include national household surveys (usually several years apart), vital registration systems (often weak in low-income countries), health information systems, and nutrition or food security monitoring. The information from these systems is often produced after significant delays, and often comprises large quantities of data presented with little analysis. If facilities and districts merely collect the information for headquarters—because, for example, they do not have the training or discretion to use the information to target and prioritize local programs—it is unlikely to be reliable and is less likely to be used. Qualitative or beneficiary assessments can be carried out by universities, NGOs, consulting firms or market research organizations, and sometimes government units. The skill and experience of these organizations is likely to vary, as is the range of qualitative techniques used; for example, universities often provide more training in questionnaire surveys than in focus groups or participatory role appraisal. The capacity assessment should examine the quality and use of information at various levels of the system, and should identify key constraints, including incentives, that influence capacity. This assessment should inform the choice of indicators, as well as the design of the monitoring and evaluation framework, including the relative roles of routine information systems and external qualitative or quantitative evaluations. Financial monitoring systems, including budgeting systems and internal and external audits, are also important and should be reviewed by an appropriate specialist.
Select monitoring indicators

Choosing monitoring indicators can be a contentious process. The indicators must be relatively few in number, reliably measurable, and must focus on issues that significantly affect the poor but are also amenable to public action. Various stakeholders, including donors, are likely to push for indicators that address their specific needs. The choice of monitoring indicators should be based on the analysis of which factors are most likely to bring about improvements in HNP outcomes for the poor—but should also take into account measurability, availability, and the likelihood that the indicators will influence decisions. Monitoring indicators need to be carefully thought through, since they will need to be assessed on an annual basis and will likely be the basis for which PRSP implementation is judged. The Bank and donors will need to strike a balance between information or indicators that they wish to have for accountability purposes and information that is most relevant and useful to those implementing programs—yet if local officials do not consider the information relevant or realistic, the data may not be collected. Once indicators are agreed upon, the government and its partners need to decide how the data will be collected and analyzed—for example, through routine HIS and monitoring systems or through rapid appraisal techniques, which may be both quantitative and qualitative—and who will be responsible for analysis and interpretation. Finally, it should be emphasized that the indicators used for the PRSP will only be a subset of those that are likely to be collected and used by health officials at different levels of the system. Although the PRSP process could help strengthen and focus existing systems, it should also try to be compatible with and not exclusive of local systems.

Developing an evaluative framework

Monitoring indicators can only indicate whether progress toward a specific objective is being achieved or not. They are not intended to provide a full diagnosis. It is therefore important to also develop an evaluation strategy. The two main objectives of such a strategy should be (1) to assess the extent to which the selected interventions are having an impact on the poor and (2) to better understand the factors influencing HNP outcomes for the poor and how these can be addressed more cost-effectively. Because of data limitations, the initial analysis will inevitably yield several key areas where knowledge and understanding are weak; the most important of these could be made priorities for specific evaluative activities. Key questions to address are what issues to examine, which methodologies to use (for example, qualitative or quantitative), and who should carry out the evaluation (government or nongovernment; local and/or international). The assessment of evaluation capacity should also provide insights into the approach used; for example, pilot interventions, process evaluations, or focus group assessment.

Establishing a plan for evaluation capacity development

Several of the studies by the World Bank’s Operations Evaluation Department (OED) and others have found that the Bank and other donors have not invested sufficient time and attention into building evaluation capacity in borrower countries. The goal of evaluation is not just to help strengthen information systems, but to strengthen the links between monitoring and evaluation (M&E) and policy and program decisions. A key weakness in many countries is the lack of incentives for using information, because budgets are determined on an input basis. The PRSP process could therefore be an important instrument to increase the attention given to and the incentives for the collection and use of HNP information, as well as to strengthen results orientation in general. Building capacity and shifting public sector incentives is likely to be a medium-to-long-term process, but it needs to be initiated early if it is to bear fruit. Although training and equipment may be needed to some extent, learning-by-doing is crucial.

Lessons from World Bank experience: OED evaluation of HNP sector work

The OED recently completed a major evaluation of the World Bank’s work in the HNP sector. Although the findings focus on the Bank, many are relevant for borrower governments (which implement Bank-financed projects) and for other donor partners. The major findings are summarized below, together with further discussion of three key areas: HNP outcomes for the poor, institutional assessment, and monitoring and evaluation.

Main findings

Several broad concerns emerge from the OED study regarding the Bank’s performance to date, many of which are relevant to the PRSP process. First, the Bank has been more successful in expanding health
service delivery systems than in improving service quality and efficiency or promoting institutional change. Although the quality of institutional analysis has improved in recent years, the Bank is often better at specifying what practices need to change than how to change them or why change is difficult. Paradoxically, Bank project designs are usually most complex, with the greatest number of components and organizational units, in countries that have weak institutional capacity. The Bank is adopting increasingly sophisticated approaches to promoting sector reform as the institutional problems addressed become increasingly difficult. Yet experience shows that realistic objectives, together with increased attention to whys and hows, increases the likelihood of achieving institutional objectives.

Second, during project implementation the Bank typically focuses on providing inputs rather than on clearly defining and monitoring progress toward HNP development objectives. Because of weak incentives and undeveloped systems for M&E within both the Bank and borrower governments, there is little evidence regarding the impact of Bank investments on system performance or health outcomes. The Bank therefore has not used its lending portfolio to systematically collect evidence on what works, what does not, and why. Methodological challenges can make it difficult to conclusively link project interventions with changes in HNP outcomes or system performance. But experience shows that effective M&E design—including the selection of a limited number of appropriate indicators and attention to responsibilities and capacity for data collection and analysis—enhances the focus on results and increases the likelihood of achieving development impact.

Third, with some notable exceptions the Bank has not placed sufficient emphasis on addressing the determinants of health that lie outside the medical care system, including behavioral change and cross-sectoral interventions. The incentives and mechanisms for intersectoral approaches are weak both within the Bank and in borrower governments, so priorities for intersectoral work must be carefully chosen. The Bank has a fundamental responsibility to more effectively link its macroeconomic dialogue with sector dialogue, particularly on issues of health financing, health workforce, and civil service reform.

Finally, improving health system performance and HNP outcomes for the poor requires strategic, flexible approaches to support the development of the intellectual consensus and broad-based coalitions necessary for change—development that requires an emphasize on learning and knowledge transfer. System reform is difficult and time-consuming, and stakeholders outside ministries of health can determine whether reforms succeed or fail. This highlights the importance of realism in project objectives, of strong country presence, stakeholder analysis, and a more strategic use of the Bank’s convening role. While incremental approaches are not always more appropriate, the Bank may have been excessive in its encouragement of “big bang” reforms.

**Linking inputs to HNP outcomes for the poor**

Although usually focusing on poor regions or diseases that most affect the poor, the Bank has been weak in analyzing the factors leading to ill health and selecting interventions that are likely to achieve the maximum impact on the overall disease burden for the poor. Project design documents typically describe the disease burden, list project activities, and then assert that significant improvements in health outcomes will result. Design documents, however, seldom present a coherent analysis of how project interventions will translate into improved health outcomes for the poor. Consequently, the Bank is usually overoptimistic in its projections of health impact and, more important, often does not consider whether alternative approaches would yield a greater impact on the disease burden for the poor. OED’s examination of four country studies and its portfolio review showed that Bank investments and policy advice tend to focus on the medical care system, but greater aggregate health improvements may be achieved through health education and behavior change initiatives or intersectoral interventions, such as water and sanitation. Intersectoral interventions can be difficult to implement, however, and therefore must be chosen carefully and allocated adequate time for supervision. It should also be noted that prevention is not always more cost-effective than curative approaches, as demonstrated by the Amazon Basin Malaria Control project.

**Institutional analysis**

The Bank and its partners confront a number of inherently difficult institutional challenges in the HNP sector, many of which have not been adequately resolved in developed countries. In addition, ministries of health are often administratively weak, particularly in areas such as financial management. Yet these difficulties alone do not explain the Bank’s disappointing performance in institutional development. Other factors are also at work:
### Box O.1. Lessons from Successful Institutional Development

Of the 73 HNP projects completed between FY 1991 and FY 1998, only 13 were rated by OED as having substantially achieved their institutional objectives. These projects shared several characteristics:

- **Consistent commitment to achieving institutional objectives**, including the promotion of consensus among stakeholders regarding priorities and approaches and, where necessary, developing strategies to anticipate and soften resistance.

- **Project designs based on a solid analysis of the underlying constraints to improved performance**, through some combination of sector work, evaluation of previous experience, and dialogue with key stakeholders. Designers developed realistic strategies to address these constraints, including attention to the proper sequencing of interventions.

- **Flexible project implementation**, with regular reviews of progress toward institutional objectives and proactive attention to problems by Bank staff and borrowers. About half of the projects that substantially achieved their institutional goals were significantly modified during implementation.

- **A governance and macroeconomic context that was supportive of institutional and organizational development**. If not, the above factors were particularly important.

- **The Bank often does not adequately assess borrower capacity to implement planned project activities**. This was the factor most commonly cited in Implementation Completion Reports (ICRs) as contributing to poor project performance, including 69 percent of projects rated unsatisfactory.

- **In seeking to promote institutional change and build borrower capacity, the Bank often does not adequately analyze the constraints underlying current performance**. Although institutional analysis has improved since the mid-1990s, it remains weak, particularly in relation to the much more daunting systemic reforms the Bank is now promoting.

- **Weak analysis contributes to a lack of clarity in the articulation of institutional development objectives**, including whether or not the instruments chosen are the best ones to bring about change. Bank projects have traditionally addressed capacity constraints through the provision of training and additional resources, although a growing number of projects, particularly in the Latin America and Caribbean and Eastern Europe and Central Asia regions, are focusing on improving incentives or regulations.

- **The absence, until recently, of appropriate indicators for institutional goals** has contributed to the tendency to assert that “capacity was built” because training or technical assistance were provided. The focus on the ultimate objectives has been inadequate.

Although some institutional issues require sophisticated analysis, the criteria used by OED merely asked whether project designers appeared to have thought through the relevant institutional issues. This suggests that institutional development performance in HNP could be improved through an increased commitment to achieving institutional goals, developing standards and tools for institutional analysis, and training staff and partners in their use.

### Monitoring and evaluation of HNP outcomes

Most HNP project designs identify key performance indicators, and intentions for M&E have improved in recent years. The vast majority of project completion reports state that the data required were not collected or analyzed, however—at least, not in a manner that enabled assessment of impact. The gap between M&E intentions and implementation is a particular problem for HNP. Project designs often give primary responsibility for implementing M&E to the borrower but do not adequately consider how data will be collected or analyzed, the incentives and capacity of borrowers to do so, or the appropriate balance between the use of internal monitoring systems and external evaluations, including rapid assessment evaluations. A number of projects have sought to improve borrower capacity, some successfully, but the Bank has tended to place excessive emphasis on providing equipment and training and has tended to underestimate the time required to agree upon indicators among various bureaucratic stakeholders, to clarify roles and responsibilities for data collection and analysis, and to strengthen incentives for using evaluative information and decisionmaking. The challenges of M&E are more difficult for system reform than for targeted interventions, but lessons from HNP projects with successful M&E are broadly applicable.
Political and stakeholder analysis

The political implications of a policy, including the support or opposition of key stakeholder groups, often influence whether or not it is adopted. Health sector reforms can be particularly difficult because of the wide variety of stakeholder organizations and interests, and because health care is often seen quite literally as a matter of life and death. While improving health outcomes for the poor may appear to be noncontroversial, any decisions regarding the allocation—and particularly the reallocation—of health resources inevitably induce support from some groups and provoke opposition from others. Merely making pro-poor policy changes a condition or target in a PRSP program does not guarantee that they will be adopted or effectively implemented. Getting pro-poor health policies adopted therefore requires developing a coalition among stakeholders, both domestic and international, that is sufficient to implement and sustain change. This in turn depends on the skill and commitment of supporters, the nature of the proposed changes, and the overall country context.

Ideally, stakeholder analysis should inform the design of policies, not wait until implementation. When designing or preparing to implement a new policy, policymakers and PRSP authors should consider four factors:

- **Players.** These are the individuals and groups who are affected in the policy change process and who might become involved in influencing its outcome. Possible players may include government ministries (health, finance, agriculture, education, and local government); professional groups (doctors, nurses, and so forth); business organizations; religious organizations; various users of health services (urban and rural, poor and middle-class); and international organizations (IMF, World Bank, WHO, donors). Each of these groups, in turn, may have competing interests within them.

- **Power.** The relative power of each stakeholder group. Poor people are often poorly organized and politically weak, particularly in rural areas, while doctors are usually more influential (although they are not always well organized). The way power and influence is exercised varies depending on the political system and traditions of the country.

- **Position.** The position taken by each stakeholder group, including whether they support or oppose the policy and the intensity of their commitment. Note that if multiple reforms are involved, a given group may support some policies and oppose others. This can serve as a basis for negotiation.

- **Perception.** The public perception and definition of the problem and the proposed policy can affect which groups become mobilized and their positions on the policy. For the PRSP in particular, the extent to which proposed changes are perceived to have been imposed from the outside (for example, by the World Bank or donors), rather than being home-grown and therefore appealing to shared national values, may influence the ultimate outcome.

Experienced policymakers and political leaders consider these factors almost instinctively, but public health specialists and economists sometimes focus excessively on the technical aspects. By considering the “four Ps” above for each proposed policy change and the entire proposed package, policymakers and PRSP authors can refine their proposals and develop a stakeholder strategy to increase the likelihood of successful implementation. The most common and avoidable mistake is simply not consulting adequately with key stakeholders. Additional stakeholder strategies are likely to include mobilizing supporters of the policies, conducting public information campaigns, identifying influential “champions,” or negotiating with opponents. Formal toolkits for stakeholder analysis in the health sector are available for those wishing to do more in-depth analysis. Whatever approach used, successful implementation depends on the political skill of advocates, not just political will.

Technical Note O.5 Eight Steps of Coverage for Interventions Addressing the Needs of the Poor

This technical note looks at whether essential health services actually reach and benefit the poor in a given country. The performance of the health services, whether privately or publicly financed, can be assessed by examining some key dimensions underpinning that performance and analyzing the key determinants of coverage for the poor. This analysis is particularly relevant for the country’s core package of key health interventions that are considered to address the burden of diseases of the poor. Is the provision of such a package really successfully in place for the poor to access and use it? Eight key determinants of performance are discussed below: physical accessibility, availability of human resources, availability of essential material inputs, service quality, social accountability, utilization of services by the poor, continuity and timing of interventions, and technical quality.
These determinants can be organized into a simple hierarchical model for assessing the coverage for the poor. In figure O.13, the first four stages (Accessibility, Availability of Human Resources, Availability of Material Inputs, Service Quality and Social Accountability) correspond to “potential” coverage and the latter three stages (Relevance of Services Produced, Continuity, and Technical Quality) represent actual coverage. Possible indicators for each of these determinants are discussed below. To the extent possible, assessment for each of these factors should include public, NGO, and private services and facilities, in order to obtain a complete overview of the health services delivery scope.

**Physical accessibility**

One of the first issue for many countries is the capacity of the health sector to ensure physical access to essential health interventions and services for the poor, including community-driven health and nutrition activities.

Access remains a key issue in most low-income countries, and rural communities are most often underserved. Distance has been found in many studies to influence the use of services more than other factors including price as in Cote D’Ivoire. The work leading up to the PRSP in Burkina Faso, for example, cited survey evidence that 40 percent of health center users had to walk more than one hour to reach the center, while the work underpinning the Mozambique PRSP cited survey evidence that 38 percent of people who had been sick but had not sought care had not done so because their local facility was too far away.

There are several approaches to measuring accessibility. The first is to measure the service supply relative to the population served—for example, the number of service delivery points, whether clinics, health unit centers or posts, or hospitals (or hospital beds) per 1,000 population, or the number of facilities offering a particular intervention or package of interventions per 1,000 population. A limitation of this approach is that it does not account for the distribution of services with respect to the poor. The data are more useful if they are broken down by region or district, to compare rural and urban or poor and less-poor districts. The second approach is to measure proportion of the population living within a given distance of a particular type of health facility (for example, 8 km or 12 km) or interventions, preferable broken down by income level or by poorer regions. In the third approach (related to the second),

**Figure O.13. Eight Steps to Effective Coverage for the Poor**

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Outcomes of the poor

Household factors

Health services coverage

Other sectors

<table>
<thead>
<tr>
<th>Technical Quality</th>
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<tbody>
<tr>
<td>Timing and Continuity</td>
</tr>
<tr>
<td>Relevance of Services produced</td>
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<tr>
<td>Social Accountability</td>
</tr>
<tr>
<td>Organizational Quality</td>
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<tr>
<td>Availability of Material Resources</td>
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<tr>
<td>Availability of Human Resources</td>
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<tr>
<td>Physical Accessibility</td>
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</tbody>
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Table O.6. Determinants of Coverage with a Core Package of Activities

<table>
<thead>
<tr>
<th>Stages</th>
<th>Example of Indicator for EPI</th>
<th>Example of Inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>Proportion of mothers of children 12–24 months who live less than 1 hour from a fixed health</td>
<td>Health facilities and providers (public, NGO, private).</td>
</tr>
<tr>
<td></td>
<td>center with weekly immunization or less than 30 min from a monthly outreach point.</td>
<td>Outreach workers and mobile clinics.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transport (public and private).</td>
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<tr>
<td></td>
<td></td>
<td>Roads and communications.</td>
</tr>
<tr>
<td>Availability of personnel</td>
<td>Proportion of mothers of children 12–24 months who live at less than an hour of a service</td>
<td>Personnel (public, private, NGO).</td>
</tr>
<tr>
<td></td>
<td>delivery point where there is a qualified health technician providing immunization</td>
<td></td>
</tr>
<tr>
<td>Availability of consumables</td>
<td>Proportion of mothers of children 12–24 months who have access to an immunization point with</td>
<td>Pharmaceuticals, supplies, stocks of consumables (public and private sources).</td>
</tr>
<tr>
<td>and other material resources</td>
<td>continuous availability of vaccines and syringes/needles.</td>
<td>Equipment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintenance (for example, functioning cold chain).</td>
</tr>
<tr>
<td>Service quality</td>
<td>Proportion of mothers of children 12–24 months having access to an immunization point where</td>
<td>Training, supervision, equipment, staff incentives.</td>
</tr>
<tr>
<td></td>
<td>other key services are integrated: growth monitoring, ORT distribution, Vitamin A supplementation.</td>
<td></td>
</tr>
<tr>
<td>Social accountability</td>
<td>Proportion of mothers of children 12–24 months having access to an immunization point where</td>
<td>Civil society representation.</td>
</tr>
<tr>
<td></td>
<td>communities conduct semestral monitoring of immunization coverage and are involved in actively</td>
<td>Involvement of users and communities in management, monitoring, and so forth.</td>
</tr>
<tr>
<td></td>
<td>tracking defaulters.</td>
<td></td>
</tr>
<tr>
<td>Utilization (initial contact)</td>
<td>Proportion of children 12–24 months having received at least one shot of vaccine.</td>
<td>Outpatient and inpatient contacts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Facility deliveries.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Management tools.</td>
</tr>
<tr>
<td>Continuity (quantitatively</td>
<td>Proportion of children having received the full course of vaccines.</td>
<td>Adequacy of record-keeping, outreach, follow-up.</td>
</tr>
<tr>
<td>sufficient contact(s))</td>
<td></td>
<td>Incentives to personnel; knowledge of clients.</td>
</tr>
<tr>
<td>Technical quality (quality</td>
<td>Proportion of children having received the full course of vaccines with the appropriate</td>
<td>Training, supervision, well-defined protocols.</td>
</tr>
<tr>
<td>contact)</td>
<td>technique.</td>
<td>Availability of drugs and equipment.</td>
</tr>
</tbody>
</table>

one can measure the time required for a client to reach a facility or service delivery point. For example, a facility may be nearby, but inaccessible because of a river or other obstacle. Alternatively, if a clinic is near a road and accessible by public transport, the poor may reach it more quickly than one that is closer but accessible only on foot. Seasonality can also be important as it affects ease of transport during rainy seasons.

To be meaningful, accessibility indicators need to take into account the physical size of the area served and the size of the population in the area. Accessibility may be a major constraint for the poor in some countries and regions, but relatively minor in others. In addition, the distribution of health facilities (public and nonpublic) may be inefficient in some areas; for example, inadequate coordination can result in government facilities located within a short distance of comparable NGO or other private facilities.

**Data collection and analysis**

- A first step is to develop a map that shows the geographical distribution of essential services. The map should specify, if possible, the location of fixed facilities, outreach points, mobile clinics, and possibly outreach workers for public and nongovernmental services, as well as major roads and natural barriers such as rivers. This could be done manually or electronically using Geographic Information Systems (GIS). Many countries have developed or are in the process of developing a Health Facility Inventory and Planning map. The key step is to link the health maps with a poverty map, by linking accessibility data to household survey data. One can then see how poor and less poor areas fare in terms of the availability of health services in their geographic area.
• Information from household surveys can be used to calculate the percentage of poor with access to services, and to determine the extent to which low physical access is a major constraint for the poor. The Demographic and Health Survey (DHS) and Living Standard Measurement Study (LSMS), for example, include questions on household assets as well as availability of essential services in the community, so it is possible to compile tabulations for accessibility by income or asset levels. Because poverty is unevenly distributed, it is useful to assemble data on availability at the regional as well as national level. These quantitative methods could be complemented by beneficiary surveys or participatory assessment approaches in poor communities, to assess whether physical access is perceived by the poor as a major problem.

Availability of human resources

Availability of appropriate human resources is growingly becoming the single most important issue in health services performance in low-income countries. Some regions of the world such as sub-Saharan Africa and other countries (India, for example) are experiencing a real human resource crisis including increasing brain drain and shortages of qualified staff. Finding and maintaining qualified health staff in rural and remote areas, which are often the poorest, is an increasing challenge; staff shortages often hampers the provision of health services to the poor. The authors of the *Voices of the Poor* report for Somaliland (World Bank 1999), for example, noted that “rural people said they rarely see health workers in their localities. If some people have been trained for the villages and other main grazing areas by international agencies, they are not now functional.” The common problems of lack or inappropriate use of trained staff can be explained by market failures, poor deployment practices, absence of financial incentives for health staff to work in poor remote areas, and or inadequate staff training. The national and the global health market offers possibility of remuneration for health staff that are well beyond the level of salaries of most low-income countries. In Cambodia, for example, a health worker salary is about US$20 per month while a visit to a nurse in his private practice activity is one to two US dollars. Most public sector staff in urban richer areas supplement their salaries through private practice. A recent study conducted by the Antwerp Tropical institute showed the actual remuneration of health staff in urban settings to be around 5 times the public sector’s salary. This number could increase to 7 times for a surgeon.

In addition, in the difficult area of human resource management, it is often the case that doctors or nurses are performing tasks that might fall more appropriately into the scopes of practice of nurses, auxiliary nurses, and community health workers. Many countries in francophone Africa train midwives; these practitioners, however, often consider themselves overqualified to work in rural areas and stay in the capital city. In Guinea, for example, more than 70 percent of the country’s midwives work in the capital city, where only 20 percent of the population lives.

Looking at the geographic distribution of health workers can show where there are serious deployment problems. It can point towards specific gaps in personnel. In addition, maps showing the distribution of qualified staff could be drawn and linked to poverty maps, to identify whether poorer or more remote areas lack essential human power to plan, manage, and deliver services.

Data collection and analysis

Central health information systems may have data on availability, and distribution of personnel, although these data are often incomplete or unreliable. Conducting surveys of a sample of facilities or a group of health workers can provide more detailed and reliable information on the number of workers and the time spent delivering services. District or provincial officials could also be asked to compile tabulations of the availability of staff. In addition, qualitative surveys can be used to find out if lack of staff are seen by the poor to be major problems—and are particular useful to find out if staff absenteeism is an issue.

Availability of other essential inputs

Health services also need the capacity to ensure continuous availability of essential material inputs, particularly at the periphery. Medicines, vaccines, and small material such as syringes are essential to health service delivery. Equipment such as cold chains and basic transport are needed to conduct outreach activities. Health, nutrition, and population (HNP) facilities may be present and physically accessible in an area, yet essential consumables resources for the intervention may be lacking or frequently unavailable. In
the poorest countries, shortage of supplies is one of the most critical hurdles that health sectors have to face. The poor usually have to face two major problems: shortages of supplies and low quality/counterfeit drugs. The common problem of essential drug shortages is often explained by inadequate pharmaceutical and supply logistics and management; in some countries, however, a predominance of supply side financing leads to rationing the limited resources supplied by government services.

On the other hand, the emergence of counterfeit drugs has grown from a basic situation of market failure, mainly due to an imbalance of knowledge (that is, the users/patients do not have adequate information) aggravated by the poor ability of governments to regulate and enforce regulation. Problems of governance are often compounding this situation.

Developing indicators of the availability of critical inputs by level of service can help assess the extent of the problem. In addition, maps showing the available distribution of drug and vaccines could be drawn and linked to poverty maps, to identify whether shortages are rampant in poorer or more remote areas.

Data collection and analysis

Central health information systems may have data on availability, and distribution of equipment, drugs, vehicles, and other inputs, although these data are often incomplete or unreliable. Conducting surveys of a sample of facilities can provide more detailed and reliable information on the availability of key inputs, and specific methodologies have been developed to do this—for example, essential drugs surveys. District or provincial officials could also be asked to compile tabulations of key inputs in their areas. Facility-level studies of the prevalence of “stock-outs” of essential drugs can provide clues about the extent of these problems. If drug shortages are identified as significant problems, the more difficult challenges to try to understand why these problems persist. Inadequate funding for inputs may be part of the problem, but is rarely the only reason.

To understand how these failures affect poor populations, again surveys can be useful to find out if absence of drugs or staff are seen by the poor to be major problems. Household survey evidence was cited, for example, in the work underpinning the Mozambique PRSP, showing that although a relatively small proportion of sick people not seeking care cited lack of drugs as the reason for their not seeking care, those who did were almost all rural residents. Surveys and inspections of health facilities are also useful. The work underlying the Burkina Faso PRSP, for example, reported that, when inspected, nearly 20 percent of facilities had run out of essential vaccines, and in 24 percent of centers the refrigerators for storing the vaccines did not function. The Mauritania PRSP reports drug shortages as the most important reason explaining the low level of use of services. Surveys can also provide useful information as to whether the poor use different sources from richer groups when they purchase drugs. In Africa (Benin) and India for example, the poor were more likely to buy drugs in the market and less likely to buy them from a formal pharmacy.

In addition, qualitative surveys can be used—and are particularly useful to find out if staff absenteeism is a major problem. If drug shortages are identified as significant problems, the more difficult challenges to try to understand why these problems persist. Inadequate funding for inputs may be part of the problem, but is rarely the only reason.

Organizational quality and consumer responsiveness

Another key dimension of performance is the extent to which public, private, and/or NGO services are responsive to consumer concerns, and whether these services are delivered in a way that encourages appropriate utilization of relevant interventions. A number of factors influence the “user friendliness” of services, including the attitude of health staff, hours of operation, space, cleanliness and comfort of the waiting area and of the wards, waiting time, gender of the service provider, modes of payment, and efficiency of referral. These factors in turn strongly affect the perception of quality by consumers, and are important determinants of whether or not services are used—particularly since consumers are often not good judges of clinical quality. Organizational quality is likely to vary among public, private, and NGO providers; by geographic location (perhaps worse in poor areas); and possibly by the type and level of service (clinics versus district hospitals; or antenatal care versus sexually transmitted infection [STI] treatment). It can be measured objectively (for example, average waiting times, time spent with providers), or qualitatively, by asking the poor how they perceive the quality of different types of services.
Data collection and analysis

Measuring organizational quality mostly relies on a mix of qualitative and quantitative tools—this type of information is rarely available through routine health information systems.

- Qualitative surveys, focus groups, or exit interviews with the poor can be illuminating. Discussions should be conducted separately with men and women, and possibly adolescents and adults, since their concerns may differ. In many countries, for example, women report being treated rudely or even abusively during delivery at government clinics; or women or adolescents avoid seeking care for STIs at public providers because of privacy concerns. Exit interviews provide useful information on provider/client interactions, but does not reach those not using services—community-based approaches are therefore also useful.

- On-site assessment of various aspects of service organization can be compared to the problems identified by the users. In this case, the challenge is to compare consumer perceptions with service-based “objective” measurements (average waiting times, observations of provider behavior, cleanliness of facilities). Information collected could be used to build scales and indexes of quality, to allow comparisons of different types of services.

The family planning field in particular has developed Situation Analysis methodologies, which combine various methodologies to collect information from a sample of facilities and communities on the availability of inputs, provider behavior, process quality indicators, and perception of community members. The Situation Analysis approach can be adapted for other services.

Social accountability

The health system or particular health services are more likely to be responsive to the poor if the poor are able to exert influence or “voice” over health systems and providers. Health staff in government clinics are often unresponsive to the poor because they are not directly accountable to them. There are several potential avenues for participation and “voice” by the poor. The first avenue is the direct management of local clinical services, through community health centers or revolving drug funds, as experienced in the Bamako Initiative supported by WHO and UNICEF and adopted by many countries in Africa and Asia. In a second avenue, the poor could be engaged in monitoring the performance of facilities or providers, either through representation on a district or facility board or committee; through an effective grievance system; or through intermediaries, such local political leaders, religious organizations, or NGOs. Some countries have also developed and publicized a “Patients’ Bill of Rights” to strengthen consumers’ ability to demand quality care. A third avenue would involve mobilizing communities for health promotion activities, whether malaria prevention or improved water supply. Even when formal mechanisms for participation exist, however, health providers often still dominate by virtue of greater education and expertise, and women or certain ethnic groups may be excluded from decision making.

Data collection and analysis

The first step is to assess the extent to which mechanisms exist for the poor to exert influence on services overall and for specific interventions. The next is to determine whether those mechanisms actually influence the quality of services provided to the poor. One approach is to assess the extent of participation by level and type of service according to the following categories: information sharing; consultation; collaboration and shared decision making. In the case of private services, the poor exert influence through their roles as consumers, although the effect of that influence may vary. Assessment of voice and participation in health services could be incorporated into an overall participatory assessment for the PRSP (see the chapter 7, “Participation”). Information would need to be collected through visits to a sample of communities and facilities, possibly by an NGO in collaboration with communities. Relevant questions might include: What percentage of health facilities have some sort of community committee or board associated with them? Do these meet regularly? Are they perceived as representative of the community and of the poor in particular, or are they dominated by local elites? Is there any measurable difference between the consumer-responsiveness of services between services for which the poor have some representation compared to those where they do not? What factors explain the differences? Are local political leaders responsive to the poor, and is the quality of health services an issue of concern for local leaders? If the poor have relatively little influence, are there existing traditional or modern institutional structures that could be built upon to improve their voice?
Relevance of production and utilization of health interventions

The next dimension has to do with whether the sector provides services to the poor and whether those services are relevant to the diseases that affect the population, especially the poor. Utilization is an important, but rarely addressed, issue in the efficiency of government services, which is often addressed solely on the input side. Are there any patients? If a doctor or nurse is seeing 4–5 patients a day, or if a hospital is at 30 percent bed occupancy, the government is literally throwing away a share of its health budget. Also, although a core package of interventions may be defined, these interventions may not be the ones that are provided in practice. Various types of incentives may lead health providers to favor the provision of curative services rather than critical preventive ones for examples. Market forces may also push service providers to produce high cost–high technology services rather than low-cost, effective services. It is therefore critical to examine the case mix of services units and assess whether priority is really given to the most relevant in terms of serving the objective and perceived needs of the poor.

What percentage of the population, and of the poor in particular, make use of a particular essential health service in a given year? For the purposes of this section, “utilization” is defined as the first use of a service by a consumer in a given year (“continuity” or subsequent contacts are discussed below). Utilization is therefore a key indicator of the extent to which the poor expresses some level of demand for services and come to contact with the health system—public, private, and NGO.

Data collection and analysis

Utilization can be measured either in terms of the total volume of services provided, or as the percentage of a given target population using the intervention (for example, the percentage of children receiving a measles vaccination; or the percentage of women with at least one antenatal care visit).

- Health information systems usually collect data on the use of services, including outpatient visits; in patients; vaccination; antenatal care; and so forth. These data are usually under reported, however, so usually cannot be used to calculate population-based utilization. But they can still provide useful trend analysis if compiled in a time series, or if making comparisons among regions or facilities.
- Household surveys can provide better information on the percentage of a target population making use of a particular service (for example, percentage facility deliveries, percentage of adults with an STI seeking care), as well as whether a public or nongovernmental service was used, and possibly reasons for nonuse of services.
- The quantity of services produced in a specific area could be linked through a poverty map to the income level of the population of the area. Such a mapping of equity of output production is currently conducted routinely in Mozambique.

Examining trends and patterns of utilization, particularly with respect to the poor, can help identify constraints to system functioning. Reasons for nonuse of interventions services cannot be assessed only from the services side alone, however. Yet when utilization is low despite good access and availability of services, analysts will need to explore survey data regarding the reasons why interventions are not used. This is likely to include aspects such as price, perceived quality, cultural acceptability, or household factors such as education.

Timing and continuity

Timing and continuity examines whether consumers receive the necessary number of contacts for services that require repeated interventions, and whether time-sensitive services are delivered in a timely manner. Some health interventions must be repeated at regular intervals in order to be effective (such as ANC visits or BCG vaccinations), requiring specific approaches to ensure follow-up. For others, the timing is critical, such as for emergency obstetric care. Too often are interventions provided partially, at the wrong time, or too late. Yet service continuity is a significant organizational challenge and an important indicator of system effectiveness, because it requires the ability to track and follow up with consumers.

Data collection and analysis

Much of the analysis is similar as above, but focusing on interventions that require repeated contacts. Continuity can be assessed by looking at drop-out rates and other indicators of follow-up, preferably using a combination of facility data and household surveys. Key interventions/indicators include BCG coverage or children with a full course of immunization; the number and timing of antenatal visits...
(percentage beginning in the first trimester, and percentage with more than three visits); and compliance with tuberculosis treatment.

**Technical quality**

What is the likelihood that the service, if used, will lead to improved health outcomes? The capacity of the sector to provide the appropriate combination of technology and empathy at a given level of utilization is key to ensure that interventions are translated into effective outcomes. Technical quality depends on effective provider training and supervision; the existence of appropriate treatment protocols; adequacy of critical inputs; as well as factors such as provider workload. Technical quality may be poor even when consumers express satisfaction with the services—this can be a particular problem in a poorly regulated private sector. If a substantial portion of the poor go to the private sector for priority interventions, it would be useful to assess the technical quality of private as well as public services.

**Data collection and analysis**

Assessing the capacity of the sector to produce outputs of good technical quality usually requires direct observation of provider behavior in order to compare existing practices against standard protocols. In addition, there are a number of indicators that are particularly sensitive to technical quality. These include perinatal mortality rates, malaria case fatality rates, TB cure rates, and maternal mortality. Follow-up studies of maternal or perinatal deaths can help shed light on whether shortcomings in clinical quality contributed. More sophisticated instruments for assessing quality via facility surveys are available for some HNP outcomes. WHO’s Topical List of Priority Indicators for IMCI at Health-Facility Level provides a useful instrument for assessing quality in the management of childhood illness. Surveys undertaken using this instrument suggest some huge variations in quality across countries. These data could be linked to a poverty map or to a household survey to get a sense of how the poor fare in the country compared to the better-off.

**Notes**

1. The *Public Health at a Glance* fact sheets aim to provide quick, easy access to the state of the art in basic preventive and curative services. These are intended as introductions to the issues and the key interventions that evidence has shown to be effective in improving health. They may be useful in making investment decisions designed to improve health and nutrition.

   The fact sheets include:
   - Key facts on each topic
   - Evidence-based interventions
   - Indicators for monitoring and evaluation
   - Implementation lessons learned
   - Selected sources for more information
   - The web versions include, in addition:
     - Links to useful sources for more detailed information
     - Sample Terms of Reference
     - Project Appraisal Documents

   The fact sheets include ten topics covering some of the “best buys” for improving health during the critical stages of the lifecycle: pregnancy and birth; childhood; the school age years; adolescence and adulthood. These *basic public health services* include:
   - **Nutrition** which is a key determinant throughout the life-cycle;
   - Malaria, TB and HIV/AIDS prevention and control interventions which can reduce morbidity and premature mortality throughout the lifecycle;
   - Reproductive health which covers men and women of reproductive age, and care at birth;
   - IMCI and immunization - key health and nutrition interventions during childhood;
   - School health which targets the school age group;
   - Mental health which is of increasing importance throughout the lifecycle; and,
• Tobacco - a major risk factor requiring preventive action at school age and beyond.


2. For example, maternal mortality rates (MMR) and child mortality are usually not appropriate monitoring indicators, because they are difficult to measure reliably (particularly MMR) and usually change slowly.

3. The poverty data sheets are based on large household surveys (DHS or LSMS), and provide breakdowns by income quintiles. HNP statistics are drawn from various sources, but much of the data are estimates or extrapolations and should be used with caution.

4. This analysis for the DAC indicators has already been done for the Poverty Data Sheets. Depending on data availability and resources, further analysis could be done by qualified demographers or econometricians using a methodology developed by the World Bank/WHO. Selected additional indicators could be added depending on data availability and borrower interest.

5. DHS and LSMS data are usually of good quality and reasonably comparable; census data vary considerably in quality. Regardless, because of data uncertainties and high standard errors associated with outcome indicators (such as mortality), time trend comparisons should be made with caution. If data seem anomalous, it may be worth checking with technical specialists (for example, Macro International for DHS) to make sure the issue is not with the survey itself.

6. The determinants for fertility and child mortality have been thoroughly studied using DHS and other household data. Socioeconomic status and maternal education are almost always the most important, but findings regarding the influence of HNP services vary. Repeating such analytic work may not be necessary on a country-by-country basis.

7. The Bank’s Operations Evaluation Department (OED) has developed a methodology for evaluation capacity assessment that could be applied either to central or sectoral ministries (K. McKay, OED 1998).

8. For example, district officials in Ghana resist having to collect information on the percentage of households with impregnated bednets since it is not part of their routine data collection. One approach to limiting the number of indicators is to have either technical specialists or key stakeholders assess a relevance score for each proposed indicator (see PHR, Knowles).

9. This framework is based on a paper by Michael Reich, “Political Analysis and Political Strategies,” in the Flagship Course on Health Reform handbook, World Bank Institute.


11. Whichever these interventions are determined to be by the country’s health policy. Some of the key health services interventions that are considered to make a significant impact on the health status of the poor include health information, micronutrient supplementation, integrated management of child health, immunization, family planning, safe motherhood, malaria prevention and case management, TB case management, HIV prevention and basic care, community based nutrition promotion, tobacco control, and so forth

12. These determinants are inspired by the work of Tanahashi (1978), Knippenberg (1986), Miller (1989), Soucat (1997) and Accorsi (1997). They have been used for the analysis of sectoral performance in countries such as Vietnam, Mongolia, Benin, Guinea, Senegal, Guinea Bissau, and so forth

13. International standards (for example those developed by WHO) or local standards (for example, determined through local operational research) can be used—for example, doctors per thousand population. One problem, however, is that these standards are rarely developed in the context of a realistic budget envelope for the sector. Reaching prespecific-targets input targets should not substitute for careful diagnosis of the major constraints facing the sector and the most efficient way to achieve outcome goals.

14. GIS systems can be very useful and allow the linking of a wide variety of information, but they require special equipment and trained staff to operate and sustain (retaining computer staff is a particular challenge). An increasingly number of health ministries are using GIS, however, and the actual GIS data entry and analysis could be done on contract with the private sector or an NGO.
15. Two useful compendia of health service indicators exist, both of which present possible measures of accessibility. These are USAID’s (undated) Health and Family Planning Indicators: A Tool for Results Frameworks, and Knowles and others (1997) Measuring Results of Health Sector Reform for System Performance: A Handbook of Indicators.


17. Improving the quality and availability of pharmaceuticals and health staffing is difficult, and often requires structural reforms.

18. Official statistics often provide information on the availability of drugs, medicines, growth monitoring and immunization programs, and so on. Aside from the fact that they are rather crude measures of quality, they also may paint a rosier picture of quality than is warranted. A facility survey in Côte d’Ivoire found a substantial divergence between drugs and medicines that were supposed to be available, according to government records, and those that were actually available, according to the facility survey. Despite the crudeness of the quality measure, the facility survey revealed some worrying gaps between poor rural areas and better-off urban areas is the proportions of facilities with immunization and growth monitoring programs.

19. A study conducted in Côte d’Ivoire (ICCF 1997) showed for example that cotrimoxazole and four other essential drugs were not available in the public health clinics more than half of the time.

20. Improving the quality and availability of pharmaceuticals and health staffing is difficult, and often requires structural reforms. Future versions of this toolkit will include technical notes on pharmaceuticals and human resources.

21. Official statistics often provide information on the availability of drugs, medicines, growth monitoring and immunization programs, and so on. Aside from the fact that they are rather crude measures of quality, they also may paint a rosier picture of quality than is warranted. A facility survey in Côte d’Ivoire found a substantial divergence between drugs and medicines that were supposed to be available, according to government records, and those that were actually available, according to the facility survey. Despite the crudeness of the quality measure, the facility survey revealed some worrying gaps between poor rural areas and better-off urban areas is the proportions of facilities with immunization and growth monitoring programs.

22. The Population Council or United Nations Family Planning Association have further information on these tools.


24. In Mozambique an index is constructed using services based information on proportion of proportion of children immunized, proportion of women using antenatal services and number of inpatient and outpatient visits.

25. Striking examples of the impact of low quality of services are found in maternal health. Utilization of ANC is quite high throughout Africa, yet the relevance and quality/efficacy of services is so low that despite high demand, maternal outcomes improve very little. In the Gambia, a TBA program led to major increase in utilization of obstetric services, yet with no impact on outcomes, since women reaching hospital services died there for lack of blood, material and surgeon. In the same way for TB, we know that people seek health care when they have chronic cough and fever. Yet services often fail to recognize the diagnosis and to prescribe and follow-up on appropriate treatments. Information on quality is hard to come by.

26. In Burundi, only 3 percent of children with diarrhea were correctly assessed and only 13 percent correctly re-hydrated. In Vietnam, by contrast, the figures were 78 percent and 67 percent respectively. In Indonesia, only 2 percent of pneumonia cases were managed correctly and only 4 percent of caretakers were correctly advised. The figures for China were 73 percent and 75 percent respectively. Source: WHO (1998).