2 Sector Review

The key to a good project evaluation is a thorough sector review. As such, good health sector projects are developed in the context of an analysis of the country's health sector. Analysis like this is frequently conducted as part of technical assistance projects. A good sector analysis helps government sort through priorities, identify projects in the context of priorities, and provide the basic data to evaluate projects and assess the risks. Completed before project preparation begins, a health sector review helps identify key areas for policy reform, capacity building, and improvement of health services leading to efficient and sustainable health sector development; it also provides inputs into project evaluation. A health sector analysis should cover the following areas:

- epidemiological profile,
- utilization patterns,

- public expenditures,
- system of financing,
- supply of medical care,
- demand analysis,
- health sector personnel,
- quality of care,
- health information and management systems, and
- implications for sector development strategy.

Epidemiological Profile

The current health status of the population provides a baseline in evaluating project impact and helps identify areas of high priority. Describing the epidemiological profile of the population involves collecting data on measures of overall health status, disease incidence, and health-related behaviors. Overall trends in these indicators should be presented. The current information should be disaggregated by sociodemographic group (e.g., age, gender, economic status, and minority) and by geographic region. Where possible, it is useful to compare the epidemiological profile with other countries in the region.

At minimum, health sector reviews should assess the trends and current distribution of summary health status measures. Almost all countries collect information on overall health indicators, including infant and child mortality and life expectancy. Many countries collect information on height and weight of children and incidence of low weight. Some countries collect information on the height and weight of adults and the ability to perform physical activities or so-called activities of daily living. Child height and weight can be used to construct measures of stunting and wasting. Adult height and weight can be used to construct Body Mass Indexes that are used to measure Chronic Energy Deficiency and Obesity. These overall summary measures are sensitive to changes in the underlying disease and nutrition environment and can be used to identify areas and groups with serious health issues.

In most countries, sector reviews are able to analyze some selected disease specific information. Some countries collect information on the incidence and prevalence of specific diseases, especially those that are communicable. For example, the Demographic and Health Surveys collect information on communicable diseases like diarrhea in many countries. Others employ sentinel systems to collect data on tuberculosis, malaria, dengue fever, HIV/AIDS, and other diseases in the region. A

few countries have information on the prevalence and incidence of noncommunicable diseases such as cancer and cardiovascular problems.

A critical aspect of the analysis is to assess the quality of the data, particularly the methods used to collect the information. This involves source of information and measurement. One source of information is a vital statistics registration, which implies that the information is from a census rather than a sample. But while the broad coverage here is an advantage, registration data, however, can be unreliable where deaths are under-recorded. A second source is a random sampling of the population. It is important to note that most sample surveys are not simple random samples and are therefore not self-weighting. The last source of information is from institutional-based sources. This, however, suffers from selection bias as only those who have sought treatment are counted. One should be cautious in using these sources of information and provide an assessment of the degree of error due to selection bias.

Statistics computed from surveys must use the sample weights. In addition, many surveys are not representative of the whole population or are at lower levels of aggregation. The representativeness of the sample should be discussed and adhered to in all analyses and presentations. Methods and reliability of measurement should also be presented and discussed. For example, cause of death using verbal autopsies is likely to be less reliable than real autopsies. Finally, key gaps in the epidemiological profile should be identified. The recommendations should not only cover sampling and measurement but also frequency of collection. The project should provide technical assistance to fill in these gaps for project evaluation and future project design purposes.

Utilization Patterns

Utilization patterns provide a baseline in evaluating project impact and help identify areas of high priority. The analysis should identify all types of medical care providers and services covering the public sector, the NGO private sector, the for-profit private sector, and the traditional sector. Types of providers include the levels of hospitals (e.g., central, provincial, and local), types of primary care facilities, and types of drug suppliers. Outpatient utilization is measured in visit rates per standardized period of time. Since outpatient utilization is relatively frequent and therefore harder to recall over a longer period of time, the unit of time should be no more than one month. Inpatient utilization is measured in terms of admission rates per standard unit of time and average length of stay. Since inpatient care is rare and easier to recall, the unit of time recommended is one year. If possible inpatient utilization should be disaggregated by type of room accommodation (e.g., VIP, private,

semiprivate, pay ward, charity ward). Drug utilization is easiest measured in terms of expenditures. If possible, trends in utilization should be presented. Current utilization patterns should be broken down by age, gender, socioeconomic status, ethnic group, and geographic region. It is also useful to compare utilization patterns with those of other comparable countries in the region. As with the epidemiological data, the quality of the data used for the analysis should be assessed in terms of sampling, measurement, and frequency of collection.

Public Expenditures

An analysis of public expenditures is critical in understanding the role of the health sector in the overall budget process and in identifying current and future priorities. Several levels of analysis are useful. The first level of analysis is to present the trends in the level of total public expenditures and share of the budget over time. It is also useful to present these numbers in per capita terms for comparison with other countries in the region. It is important that these calculations include all levels of government and not just central level allocations. In addition, not all health expenditures are administered through the Ministry of Health. For example, family planning and reproductive health expenditures may be dispensed through family planning agencies while public health activities, such as clean water and sanitation, may likely be found in other ministries' budgets.

The second level of analysis is to describe resource allocation within the health sector across major expenditure categories (e.g., central, provincial, and local hospitals; primary care facilities; drugs, public health, and vector control; manpower and education; health promotion, administration, etc.). The first step is to describe the budget process and categories of expenditure in terms of what the categories are, who makes the decisions and based on what criteria. Then, levels and shares of the allocations across categories should be presented.

The third level of analysis is to forecast how budget allocations are likely to change in the near future, at the sector level and by category of expenditure. This is based both on trends and on government priorities set forth in planning documents and official opinion. It is critical to assess what projects or programs are being constrained by lack of budget.

A fourth level of analysis is to measure the benefit-incidence of public subsidies. The benefit-incidence measures the distribution of public subsidies across income groups. The benefit-incidence of a subsidy program captured by income groups is measured as the unit subsidy (fee minus unit cost) times the utilization rate.

Benefit-incidence analysis measures the extent to which program benefits are accruing to the targeted beneficiaries and the extent to which program expenditures are leaking to other lower priority groups.

Analyzing the budget process and allocations is critical to project identification. In many cases, the true effect of project funds may have little to do with the specifics of the project being proposed. Governments may have intended to do the projects anyway and the additional money from the loan simply allows them to finance another project, which they consider of marginal importance. Regardless of the project being evaluated, the project actually being funded is the one that would not have been done if the project funds were not available. This is because funds are *fungible* across purposes so that their actual use is different from their formal accounting.

The most rigorous way to assess the use of funds is to look at how the additional project funds affect total budget allocations. If the project that is being evaluated could not have been funded without the loan, then that is the project being funded. The most obvious concern is when project funds simply reduce government allocations to the health sector and thus fund, instead, education or energy or other budget demands. More subtle cases concern the effect of project funds on allocations within the health sector. For example, over the last 20 years, the international public health community has stressed the need to shift resources to basic primary care. Since then, this has been the focus of much of the donor assistance to developing countries. In some countries, however, when government allocations across programs are examined in total (local funds plus donor assistance), only small portions of their budgets have been found to go to primary care activities; moreover, these proportions have been stable over time.

In some countries, government priorities may differ from those of donors with project funding for basic primary care services, leaving Ministry of Health funds to satisfy other pressures from political constituencies or stakeholders for the provision and subsidy of urban, tertiary services. These problems arise when donor priorities differ from government objectives and when the government, as a whole, does not share Ministry of Health objectives. Project evaluations must document that potential project objectives are government priorities. Project objectives should be derived from, and placed in the context of, broader development and government objectives. Good project evaluation should document that the project's objectives are encompassed in government plans, but that implementation is constrained by funding. These objectives may be explicitly stated in a government plan or implicitly through a public investment program. An analysis of disaggregated health sector budgetary and expenditure trends will help to assess how potential project objectives fit into overall government objectives.

Financing of the Delivery System

A critical aspect of sector analysis is a thorough description of the financing of the entire health care delivery system. The first step is to construct National Health Accounts (NHAs). The NHAs summarize the sources and uses of funds in the health sector. Typically, the rows of the NHA table represent uses of funds divided between public, NGO private, for-profit private, and traditional sub-sectors. Each sub-sector is further divided into activities and programs (e.g., hospitals, primary care, public health, drugs, administration, etc.). The columns represent the sources of funds—e.g., government, social insurance, and out-of-pocket. The cells in the NHA identify how much is spent on each activity by source. The NHAs are useful in identifying how government subsidies are spent and the importance of financing each activity. Constructing separate NHAs for urban and rural areas investigates the degree of urban bias.

Supply of Medical Care

The supply of medical care is measured at several levels. The first is just a simple counting of the existing providers. Types of providers include the levels of hospitals (e.g., central, provincial, and local), types of primary care facilities, and types of drug suppliers. The second is availability of these providers to households where availability is measured in terms of travel time and monetary price. The third level is the dynamics of the supply of providers, including the payment incentive structure and degree of competition. The fourth is the measurement of unit costs of the various services in each sub-sector of the health care delivery system.

This first set of analysis involves presenting the number of providers per capita by type (e.g., hospital beds, primary care facilities, physicians, and ancillary health personnel) in each sub-sector. These analyses should be disaggregated by geographic region and data should come from administrative records and surveys of village infrastructure.

The second set of analysis involves measuring the distance from households to each provider type and the price charged. These analyses can be disaggregated by household characteristics such as income, ethnicity, and geographic location to investigate equity in access to medical care. The analyses use information from household surveys that inquire about the distance and price of available providers and not just providers used.

The third set of analysis investigates the nature of provider incentives and competition between the public and private sectors. Payment mechanisms include fee-for-service, capitation, salary, and blended rates. The review should assess the performance implications of these payment mechanisms in the context of the country concerned. Competition between public and private providers can be partially assessed by examining market shares and how they vary across geographic areas. A more in-depth analysis uses time series data to examine how the expansion of the public sector affects the availability and price of private provider care.

The last set of analysis measures the unit costs of services in each sector. Costing is well known in the health literature and one should follow the general guidelines for these analyses.

Demand for Medical Care

In addition to baseline utilization rates, estimates of how utilization changes when prices, income, and quality change are important inputs into several areas of project evaluation, including demand analysis and sustainability. Normally, demand and need are discussed separately. However, estimates of price and income elasticity of demand are useful and should be conducted as part of the sector study. The *price elasticity of demand* is defined as the percentage change in utilization corresponding to a 1 percent increase in price. The higher the price elasticity, the bigger the drop in utilization and the lower the amount of revenue generated from a given price increase. The *income elasticity of demand* is defined as the percentage change in demand corresponding to a 1 percent increase in income. Services which are income elastic are used more by the non-poor while those that are income inelastic are used more by the poor. Price elasticity is critical in forecasting utilization and revenues under alternative user fee scenarios. Income elasticity is useful in identifying services that are used more by the poor and should, therefore, be more heavily subsidized.

Estimates of the price elasticity of demand can be obtained by using household level data or facility level data. However, facility level data cannot be used to estimate income elasticity of demand. The analysis requires multivariate analysis and is best conducted using panel data to control key confounding variables. The analysis can also be done using cross-sectional data. The key is to have sufficient variation in prices and income in the data. An important issue, however, is that price elasticity is likely to vary with the level of the price. Therefore, estimates of price elasticity used to estimate demand responses to price changes outside the range of the data

are less reliable. Application of price and income elasticity for forecasting is complicated by the fact that in principle, elasticity can vary between groups depending on factors like income level, gender, and ethnicity. In practice, however, it is rare to find disaggregate elasticity estimates.

Human Resources

Expansion of the health sector requires qualified medical personnel. Moreover, projects often need health sector personnel willing to relocate in rural and less desirable areas. Thus, a key element of a sector review concerns the supply and demand for health sector personnel. The analysis involves several steps. The first is part of the analysis of the supply of medical care—estimating types of medical personnel per capita by geographic region. The second step is to describe where the future supply of medical personnel will come from. This involves reviewing the capacity and quality of local training institutions and regulations concerning the licensure of foreign-trained medical personnel. This information can then be used to assess whether there is sufficient supply of medical personnel necessary to keep medical personnel per capita ratios constant as the population grows. This will determine whether there are sufficient medical personnel for an expansion of the delivery system. The third step involves understanding why medical personnel choose to work in the private versus public sectors. Even if there are sufficient personnel, projects may fail if many of them enter the private sector or choose to relocate in urban and over-served areas. Key to the location decisions is the level and form of remuneration. An analysis of the provider payment incentives will be useful to assess retainability for health sector personnel. Lastly, there should be an assessment of the quality of health sector personnel, medical schools and training facilities, and licensure regulations.

Quality of Care

Many projects are devoted to improving quality of care through actions such as improvements in drug supplies, infrastructure, equipment, training, etc. Therefore, a review of the current quality of services identifies areas of weakness and provides a baseline for monitoring and evaluation. Quality is measured in three ways: structure, process, and outcome. The best measure of quality is in terms of health outcomes. Facilities of higher quality improve health more, holding other factors constant.

However, assessing outcomes is difficult both in terms of measurement and analysis. The second method of quality assessment is measuring the process of care; specifically, scoring the extent to which actual practice deviates from a generally accepted standard of care, where the standard is defined globally, whenever possible. Finally, the crudest measure is visiting the facilities and establishing whether they have the necessary manpower, equipment, and drugs to diagnose and treat illnesses. An additional part of the assessment of quality of care is to review government regulation and enforcement policy regarding provider licensure, provider quality, and drug prescriptions.

Information Systems

A sector review must review information systems. It should list and critically review all sources of information being used by the government for decision making and describe how this information is used. Sources of information include:

- central, provincial, and local budgets and expenditures;
- vital statistics registration of births and deaths;
- facility reports of utilization, disease incidence, expenditures, and revenues;
- life tables;
- licensure information;
- epidemiological sentinel systems;
- regular and special household surveys; and
- regular and special provider surveys.

Management and Operational Capacity

Key to the successful and efficient operation of projects is the managerial and operational capabilities of the health sector. The first step in this analysis is to describe the organization and decision-making authority in all levels of government including central, provincial, and local levels. Authority over both programmatic content and resources should be identified. There should be a discussion of the extent to which governmental units are integrated in terms of planning, implementation, and resource allocation. There should be an assessment of the capabilities of managers to run their programs. The review should pay special attention to the provincial and local levels in countries that have or are planning to decentralize, and the capacity of

facility managers to implement resource mobilization, to bill insurance plans, and to manage their own resources.

Implications for Sector Development Strategy

Finally, the sector review needs to draw the policy and programmatic implications of the analysis. However, the recommendations must be in the context of the appropriate role of the public sector as agreed with the government. At minimum, this concluding section should make recommendations for changes in the following areas:

- allocative efficiency of the health sector,
- infrastructure investment that affects quality of care and access to public facilities,
- health promotion and public health activities,
- human resource development,
- health care financing,
- private sector development and regulation of private activities that impinge on health status, and
- institutional organization and capacity.