Monitoring and Evaluation of Decentralization Reforms in Developing Country Health Sectors

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Abstract

The decentralization of responsibilities from the central government to lower levels of government or semi-autonomous institutions has become an increasingly common strategy for improving the performance of health systems in developing countries and ultimately for improving the health status of developing country populations. However, efforts to monitor and evaluate the implementation and functioning of decentralization programs are often hampered by poor or incompatible data, by the absence of sound research designs, and by the sheer scope of the reform, which can encompass all aspects of health system functioning. This work presents a conceptual framework for identifying key areas for evaluation of decentralization programs and the pathways – and potential barriers – by which decentralization can affect health systems. It also identifies ways to evaluate the impact of decentralization in achieving key objectives – improved efficiency, accessibility, equity, community participation and health status. The work outlines the types of data that can be collected and a detailed set of indicators in several broad areas – political, administrative, and fiscal – that can be useful for monitoring and evaluation purposes. Most of the indicators described can be collected from existing data collection techniques, although to date, many of these data are not part of routine data collection in many countries. Numerous data collection tools are also described, as are the types of analyses – including impact evaluations of decentralization – that can be undertaken with that data.

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Acronyms

DHS	Demographic and Health Survey
GIS	Geographic Information System
IEC	Information, Education, and Communication
LHA	Local Health Accounts
LSMS	Living Standards Measurement Survey
M&E	Monitoring and Evaluation
NGO	Nongovernmental Organization
NHA	National Health Accounts
PHR*plus*	Partners for Health Reform*plus*
SWAp	Sector-wide Approach
USAID	United States Agency for International Development

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Executive Summary

Decentralization involves the transfer of responsibilities from a central government to lower levels of government or autonomous or semi-autonomous organizations (Rondinelli et al. 1983). Decentralization can take on many forms, depending upon the nature of the functions that are decentralized, the extent of control over those functions by local governments, and the type of institution to which responsibilities are transferred.

The rationales and objectives of decentralization are often varied and ambitious. Frequently, decentralization processes have been imposed upon a country's health sector by political and social forces aimed at increasing democratization, political stability, or community participation (World Bank 1987). Donors have often advocated decentralization, either as a mechanism to encourage sustainability and to promote primary health care (World Health Organization 1978) or for the potential efficiency gains that might be realized by incorporating local information in decision making, removing layers of bureaucracy, or removing diseconomies of scale (World Bank 1987). Economic rationales for decentralization focus on both health system efficiency and on accommodating a diversity of preferences for government services (Oates 1972). The stated goals of health sector decentralization generally include improving the efficiency, equity, accessibility, responsiveness, and quality of health service delivery, and ultimately the health of a country's population.

Even so, decentralization does not guarantee improved health sector efficiency or improved health system outcomes. Numerous conditions, often overlooked, influence the success of decentralization processes, including local managerial and technical capacity, systems of accountability, clear and transparent legal frameworks that delineate the division of responsibilities, and sufficient funding to fulfill mandates and to meet local priorities. While none of these conditions are sufficient for successful decentralization, country experiences demonstrate that all of them are necessary.

The purpose of this document is to provide planners, policymakers, and researchers in developing countries and elsewhere with guidance on developing ways to measure decentralization's progress towards specified goals, including intermediate steps that frequently stall or lead the process astray, and on evaluating whether observed changes are attributable to the processes and interventions that constitute decentralization reforms or are attributable to other phenomena.

This guide presents basic information on the rationales and definitions of different forms of decentralization, as well as country experiences with health sector decentralization. It also proposes a conceptual framework for identifying key areas for evaluation and the pathways – and potential barriers – by which decentralization can affect health systems. The conceptual framework focuses on key system inputs, processes, and outputs along political, fiscal, and organizational divisions. Key inputs include the legal frameworks; regulatory, policy-making, and planning systems; fiscal arrangements including those governing revenue generation, systems of transfers, and expenditure management; and organizational components including systems for deployment of human resources, control of drugs, supplies, and equipment, and investment decisions for infrastructure and service delivery.

Central to this framework is the clear demonstration from country experiences that decentralization affects change by altering patterns of authority and accountability, vesting decision-making power in those who have informational advantages, and strengthening linkages between local health officials, service providers, and constituents, clients, and other beneficiaries. The proximity between stakeholders brought on by decentralization can ease the flow of information for decision making and for holding officials and health workers accountable for performance. Building organizational and technical capacity in these areas, including the capacity to generate and use information, are critical elements of decentralization processes and of their monitoring and evaluation.

This guide outlines key questions to be asked by evaluators, presents measurable indicators to assess progress, and identifies the types of information that can be collected along functional – political, fiscal, and organizational – and dimensional – authority, accountability, capacity, and information – areas. Most of the indicators described here can be collected from existing data collection techniques though frequently such data are not routinely used for monitoring and evaluating decentralization nor are they commonly combined with other sources of data to evaluate decentralization's impacts. Local government expenditure data on different programs, for example, can be linked with household survey data to measure the impacts of decentralization on equity and health services utilization. Key informant interviews can be linked with budgetary data to evaluate changes in priority setting and allocative efficiency.

Impact evaluation of decentralization is likely to involve greater attention to study designs than has generally been evidenced. While randomized experimental/control group designs are often precluded by political and social forces, this guide urges that greater efforts be made to employ scientific methodologies in evaluations of decentralization processes. This will allow for results that are replicable, conclusions that are definitive, and guidelines that can be used in different settings.

The focus of this guide is on providing an overview of issues in the monitoring and evaluation of decentralization processes rather than prescribing any specific strategy or tool. While monitoring and evaluation designs must be tailored to each country's unique circumstances and context, it is hoped that many of the monitoring and evaluation tools and indicators discussed here are sufficiently standardized to allow comparisons to be made across countries.

Overview

Decentralization involves the transfer of responsibilities from a central government to lower levels of government or autonomous or semi-autonomous organizations (Rondinelli et al. 1983). Decentralization can take many forms, depending upon the nature of the functions that are decentralized, the level of control over those functions by local governments, and the type of institution to which responsibilities are transferred. The impetus for decentralization in the health sector can be both external – related to political reforms aimed at greater social inclusion, processes of democratization, or overall public sector reform – or internal – intended to improve health system performance and responsiveness. Decentralization processes in developing country health sectors have many objectives and are generally aimed at improving the efficiency, equity, accessibility, quality of health service delivery, responsiveness to local needs, and ultimately the health of a country's population.

The purpose of this document is to provide planners, policymakers and researchers in developing countries and elsewhere with guidance on monitoring and evaluating the process and progress of decentralization efforts both within a specific country and across countries. This guide presents basic information on the rationales and definitions of different forms of decentralization, as well as country experiences with health sector decentralization. It also proposes a conceptual framework for identifying key areas for evaluation and the pathways – and potential barriers – by which decentralization can affect health systems. Finally, it identifies ways to monitor decentralization and evaluate the impact of decentralization in achieving key objectives: improved efficiency, equity, quality, accessibility, responsiveness, and health status.

This guide outlines key questions to be asked by evaluators, presents measurable indicators to assess progress, and identifies the types of information that can be collected in several broad areas – political, organizational, and fiscal – that are often the focus of decentralization efforts. The focus is on providing an overview of issues in the monitoring and evaluation of decentralization processes rather than prescribing any specific strategy or tool. Most of the indicators described here can be collected from existing data collection techniques, although to date, many of these data are not part of routine data collection in many countries. While monitoring and evaluation designs must be tailored to each country's unique circumstances and context, it is hoped that many of the monitoring and evaluation tools and indicators discussed here are sufficiently standardized to allow comparisons to be made across countries. Numerous data collection methodologies are also described, as are the types of analyses – including impact evaluations of decentralization – that can be undertaken with the data.

1. Introduction

Developing countries face a variety of obstacles in addressing their many health problems. Most common among these obstacles are extremely limited and often inequitably distributed resources, shortages of institutional and/or human capacity, inadequate accountability mechanisms, absence of risk-pooling, inefficient and frequently wasteful service delivery, and inequitable access to care. Further, public sector health systems are often poorly designed to respond to the needs of their populations (World Bank 1993a; World Health Organization 2001; Leighton and Knowles 1997). Increasingly, too, countries, particularly in sub-Saharan Africa, are beset by the HIV/AIDS pandemic, with its heavy costs on human and social capital and significant drain on already constrained resources. These obstacles severely jeopardize the health and utilization of health care for developing country populations, more so for certain population subgroups – the poor, women, children, and members of historically disadvantaged cultures.

Considerable interest has been generated in recent years regarding the potential for decentralizing responsibilities from central to lower levels of government to address the shortcomings of developing country health systems. Both the World Bank (1987) and World Health Organization (1978) have argued that decentralization can make health systems function more efficiently and can increase community involvement in oversight and locally relevant decision making. Often, health sector decentralization has been swept up in larger democratization and good governance efforts, which have helped promote greater political stability and local government responsiveness. Decentralization has also attempted to remove inefficient levels of bureaucracy, allowing for decision making that is both faster and more appropriate for local circumstances.

Economic rationales for decentralization focus on both health system efficiency and on accommodating a diversity of preferences for government services (Oates 1972). Decentralization may permit efficiency gains by reducing the costs to the central governments of coordinating activities across large populations or geographic areas, i.e., the removal of diseconomies of scale, particularly as local health officials may have greater knowledge of local health situations.

Even so, decentralization does not guarantee improved health sector efficiency or improved health system outcomes. Numerous conditions, often overlooked, influence the success of decentralization processes, including local managerial and technical capacity, systems of accountability, clear and transparent legal frameworks that delineate the division of responsibilities, and sufficient funding to fulfill mandates and to meet local priorities.

1.1 Purpose of Guide

Because of the widespread nature of decentralization as a health reform strategy, the potential for decentralization to further exacerbate problems of public sector efficiency, and the need for regular health system monitoring, understanding the performance of decentralized health systems is likely to be an important activity in developing countries.

The primary goal of this guide is to provide a review of the objectives and outcomes of decentralization in developing country health sectors, as well as to develop a framework and possible strategies for evaluating decentralization's progress and effects. It is hoped that this guide will assist individuals in understanding how decentralization affects resources and functions in the health system and their link to the anticipated outcomes and impact of decentralization. More specifically, this guide has the following objectives:

- To summarize key experiences with health sector decentralization in developing countries, including their rationales, common structural elements and innovations, problem areas, and successes
- To propose a conceptual framework depicting the components of a decentralization process, focusing on the pathways – and potential blockages – by which public sector inputs in a decentralized health system are converted into improved health system performance and population health outcomes
- To present a range of valid indicators and data sources relevant for monitoring and evaluating different types and levels of decentralization
- To develop a stepwise framework for combining routine monitoring of health systems with supplemental periodic data collection to evaluate decentralization processes
- To provide guidelines for evaluating the impact of a decentralization program on the health system and the health of a country's population.

This guide, like other guides for monitoring and evaluation, is intended for a variety of audiences. Policymakers and health planners in developing countries might find this guide useful for designing monitoring and evaluation plans in country-specific contexts. Evaluators and researchers may use this guide to monitor changes in health system performance as a result of decentralization policies in a specific country or in cross-country analyses. International donors may refer to this guide for insights on how to evaluate decentralization as a policy supported by donor agencies.

It is important to note that decentralization can be best viewed not as a single intervention, carried out at one point in time, but rather as a bundle of interventions – shifts in responsibility; creation of new managerial, supervisory, and participatory bodies; capacity building; etc. – that often occur in stages over many years. This increases the complexity of monitoring and evaluation, largely because of the sheer number of changes that must be noted (monitoring) and of impacts that must be assessed (evaluation).

It is also important at the outset to make a clear distinction between evaluating decentralization as a process with defined objectives and goals and evaluating a decentralized health system. The monitoring and evaluation of a decentralized health system, in many respects, is identical to the monitoring and evaluation of a centralized health system. In either situation, planners will want to answer basic questions about how and where money is spent, whether resources meet the population's health needs, and other aspects of system functioning. Such regular monitoring and evaluation systems have been the subject of a vast literature and are not the main focus of this guide.

In contrast, evaluation of decentralization as a process involves determining the success of the collection of interventions that might constitute a decentralization program in attaining definable goals, e.g., more efficiently delivered health services, more responsive governments, greater accessibility to health services for the poor and other vulnerable groups, or improved quality of care,

and the stages of change that take place along the way. These goals can be articulated as clear questions with clear indicators and analysis plans that seek to answer those questions. The purpose of this guide is therefore slanted towards the monitoring and evaluation of decentralization as a set of interventions. Specifically, this guide is aimed at providing mechanisms and tools to answer the following questions:

For monitoring decentralization:

1. Is decentralization proceeding as planned? Are the anticipated changes in local institutions, structures, and resource flows taking place?

2. Is the decentralization process reaching its objectives (relative to a baseline)?

For evaluating decentralization:

1. Has decentralization contributed to changes in health system performance and health status?

2. Is the decentralized system more or less effective than the former (centralized) system?

The distinction between evaluating decentralized health systems and evaluating a decentralization process, however, is not without overlap. Both cases call for similar indicators related to health system performance and impact. Changes in resource allocations, efficiency of service provision, quality of care, and utilization of services are all likely to be of relevance in both routine system monitoring and in evaluation studies specific to decentralization. The principal difference is in the questions that are asked. In the monitoring and evaluation of a health system (decentralized or not), one would ask if performance is adequate or improving. In monitoring and evaluation of decentralization, one would ask if decentralization is proceeding and leading to specific performance goals.

Because the nature and types of decentralization processes vary by country and experience, the monitoring and evaluation tools described here are general in approach. It is beyond the scope of this guide to develop a complete set of indicators, data collection instruments, or analytical tools relevant to decentralization in all countries in all contexts. Each country's situation will be different, and the extent to which the indicators and tools are relevant will depend on the nature of the decentralization program. These indicators and the analysis tools that follow are intended solely as guides for what is possible for monitoring and evaluation. Specific indicators will have to be tailored to each country.

Most of the tools that are discussed have received extensive coverage and review elsewhere. In fact, it is hoped that many of the data collection instruments are already in place in many countries as part of routine monitoring of health systems or for purposes of evaluation unrelated to evaluations of decentralization. This guide would then serve as a guide for applying existing resources to evaluations of decentralization processes. Where applicable, references are included on the sources of more detailed information for data collection tools and analyses.

1.2 Organization of Guide

The remainder of this guide is divided as follows: Chapter 2 provides background and definitions for key components of decentralization and reviews historical information on health sector decentralization programs in developing countries; Chapter 3 describes a conceptual framework for monitoring and evaluation of health systems in general and decentralization programs specifically;

Chapter 4 describes major indicators for decentralization programs and mechanisms for collecting data to develop these indicators. Chapter 5 describes a stepwise framework for developing a basic monitoring and evaluation plan; and Chapter 6 discusses an agenda for the future for monitoring and evaluation of decentralization programs.

2. Concepts, Definitions, and Country Experiences

This section provides information on key concepts and definitions used in describing decentralization processes and decentralized health sectors. It also provides background on countries' experiences with decentralization, highlighting the reasons for choosing to decentralize, the structure of different decentralized health sectors, and experiences to date, including key steps that often determine the level of success of a decentralization program. It should be noted that the decentralization process in many of these countries continues to evolve, as do the efforts, data, and skills necessary to perform rigorous evaluations of the effectiveness of different decentralization programs.

2.1 What is Decentralization?

Decentralization is the transfer of authority and responsibility for public functions from a country's central government to subnational levels of government or autonomous institutions (Rondinelli et al. 1983). Decentralization is often classified by the types of responsibilities devolved and by the level of autonomy granted to the local authorities. A common taxonomy classifies decentralization by three categories of devolved responsibilities: political, administrative, and fiscal.

Political decentralization involves providing citizens or their representatives with additional public decision-making power, in particular through democratic processes (World Bank 2000). Behind arguments for political decentralization is the assumption "that decisions made with greater participation will be better informed and more relevant to diverse interests in society than those made only by national political authorities. The concept implies that the selection of representatives from local electoral jurisdictions allows citizens to better know their political representatives and allows elected officials to better know the needs and desires of their constituents." (Rondinelli 1999) Successful political decentralization generally depends upon several key components, including constitutional or statutory reforms, pluralistic political parties, strengthening of legislatures, and local political units. Absence of some of these elements can lead to "capture" of the electoral system by local elites, who might then pursue policies and actions favoring themselves or members of their preferred groups. Political decentralization also frequently forms the basis for devolving numerous public sector administrative tasks.

Administrative decentralization "is the transfer of responsibility for planning, financing, and managing certain public functions from the central government and its agencies, subordinate units or levels of government, semi-autonomous public authorities or corporations, or areawide, regional, or functional authorities" (Rondinelli 1999). Different subcategories of administrative decentralization are frequently defined, based on the institutions or agencies to which responsibilities are devolved. **Deconcentration,** the weakest form of decentralization, involves the transfer of authority and responsibility from a central government's ministry of health or similar departments to regional offices within the same ministry. **Devolution,** on the other hand, provides greater autonomy to decentralized bodies and involves the transfer of responsibilities from the central government to lower

levels of government that have been empowered by statutory or constitutional provisions. **Delegation** involves the transfer of responsibilities from central agencies to semi-autonomous entities operating independently or semi-independently from the government. (Rondinelli et al.1983; Rondinelli 1999; Brinkerhoff and Leighton 2002).

This latter characterization may be more easily viewed as a continuum, as even within the same health system some functions may be devolved to very different agencies and levels. In fact, privatization – the transfer of responsibilities from the government to private entities – is sometimes considered to be a form of decentralization, one designed so that market-style efficiency gains can be generated through higher levels of autonomy and decision-making flexibility (Rondinelli 1999, Mills 1994). Under privatization, responsibilities may even be devolved to service providers themselves, as has been evidenced in some efforts to separate the financing of service provision from the actual service provision. In Brazil, for example, the majority of health care providers are in the private sector, while the government is assigned the roles of financing and regulating the health sector (Griffin 1999). Alternative forms of privatization might also include contracting out of non-essential services such as laundry, billing, security, or grounds keeping for health facilities (Mills 1994, Rondinelli 1999).

Fiscal decentralization refers to developing local government control over financial resources, either in terms of expenditure assignments or revenue generation. Much of the literature on fiscal decentralization focuses on the nature of intergovernmental transfers, and on addressing differences in revenue-generating capacity across jurisdictions of different income levels. Within the health sector, however, local governments are likely to have limited revenue-generating powers and are generally restricted to local cost-sharing mechanisms or local health insurance schemes. Decentralized health systems therefore generally remain dependent upon transfers from the central government. A primary issue for analyses of fiscal decentralization is in determining the proper balance of authority with the financial resources to carry out that authority, particularly with respect to national health priorities. Central governments must balance conditionalities on transfers that are intended to ensure national priorities are met with the restrictions on autonomy and flexibility that such conditionalities place on local decision makers.

2.2 Country Experiences with Decentralization

Measuring the extent of decentralization in developing countries is difficult because of the myriad forms and degrees to which it is often implemented. Decentralization, as mentioned before, is more aptly viewed not as an all-or-nothing phenomenon but rather as a continuum along multiple channels and functions. A country may hold local elections but still require that health personnel be hired through a central ministry. Local governments may have considerable discretion over expenditure decisions but have little power to tax, borrow, or otherwise raise revenue to finance those decisions. Amalgamating these different measures of autonomy into a single measure of decentralization is therefore likely to be imprecise.

Even so, decentralization is very clearly related to both economic development and democratic systems of government. Nearly all governments in developed countries involve federalist systems – systems of government based on a division of responsibilities between the central government and multiple lower levels of government. Approximately 95 percent of democracies have decentralized or federalist systems of government (World Bank 1999).

In recent years, countries throughout the developing world have also been attempting to combat problems of poor public sector efficiency by decentralizing functions and responsibilities from their

central governments to lower levels of the public sector. Of the 14 countries in Latin America with populations greater than 5 million, only Mexico had regular local government elections by 1960. By 1992, all 14 countries were holding elections at the municipal level (Burki, Perry, and Dillinger 1999; Willis, Garman and Haggard 1997). A survey in 1994 found that 67 of 75 developing countries with populations greater than 5 million had embarked upon some process of decentralization. Globally, approximately 75 percent of countries have subnational levels of government (Dillinger 1994).

Argentina is one country that appears to have made great progress on decentralization. Only 14 percent of public sector health spending is at the national level, while 70 percent occurs at the provincial level and 16 percent at the municipal level (Gonzalez-Prieto and Alvarez 1999; Griffin 1999). In sub-Saharan Africa, numerous countries have also pursued decentralization policies to various degrees in recent years. The most notable examples include Ghana, Zambia, Uganda, Tanzania, and South Africa, though many others have implemented various community and local government reforms (Hutchinson 1999; Bossert and Beauvais 2002). In Asia, India, Bangladesh, Nepal, and China have all embarked upon some redistribution of responsibilities to state and local governments.

2.3 Rationales for Decentralization

Political forces are the most common impetus for decentralization processes in developing countries. Decentralization has been used as a mechanism to disperse power, to ensure political stability, to bring representative government closer to citizens, and to improve the accountability and responsiveness of local leaders (World Bank 2000; Burki, Perry, and Dillinger 1999; Silverman 1992). In Africa, the removal of colonial powers, particularly in the 1960s, left legacies of civil services beholden to a central authority, ill-motivated to respond to the needs of the populations, and, with a rise in opportunism in which government employment was used as a source of rent-seeking behavior, fostering a sense of social distrust (Shah, 1998).

Decentralization in Latin America and former centrally planned economies has been led by emergence of democratic governments and political freedoms, in which improvements in public services have been seen as critical (Shah 1998). In Latin America, decentralized health systems have been developing to reduce the administrative burden on central governments and to respond to local needs (Litvack, Ahmad, and Bird 1998; Griffin 1999).

Often decentralization is tied to efforts to promote political stability and to formalize institutional mechanisms that allow disparate groups to participate in governance. South Africa and Uganda have used decentralization to promote national unity (Jeppson and Okuonzi 2000; Hutchinson 1999). The decentralization process in Russia has been used to avoid secessionist impulses by regional factions (World Bank 1999). Encouraging regional autonomy was also behind decentralization efforts in both Spain and Papua New Guinea (Artigas 1990; Campos-Outcalt, Kewa, and Thomason 1995).

Political decentralization is closely tied to efforts to enhance community participation. As one researcher notes,

> Citizen participation ensures that public goods are consistent with voter preferences and public sector accountability. Such participation is possible only if political freedom (voice and exit) is permitted and political stability prevails. Decentralization strengthens citizen participation by bringing governments closer to the people they are intended to serve (Shah 1998, p. 21).

Decentralization has also been undertaken because of dissatisfaction with the efficiency of centrally provided public services. This inefficiency can be related to the difficulty of coordinating disparate activities from a central location, particularly in geographically larger or more heavily populated countries. Centralized systems are likely to require additional levels of bureaucracy and management, leading to diseconomies of scale – unit costs that increase more rapidly as the scale of delivery increases – and longer decision-making times. Further, centralized and remotely located decision makers are less likely to have knowledge of local conditions, or are able to collect information on local conditions only at greater cost, than are local decision makers. Some researchers have even argued that higher information and transactions costs in developing countries make moving decision makers closer to the people even more appropriate for developing countries than developed countries (Shah 1998).

By bringing greater diversity in the supply of public goods, decentralization, as argued in the fiscal federalism literature, can improve allocative efficiency – the allocation of resources among health interventions and activities so as to achieve the maximum improvement in well-being. When preferences for public goods differ across localities, decentralization can allow welfare gains to be realized by providing local decision makers with the autonomy to alter the supply of public goods to better meet these diverse preferences. These preferences are also more likely to be revealed, as well as addressed by planners who are closer and more accountable to constituents than centralized planners (Oates, 1972; Musgrave 1983; Akin, Hutchinson, and Strumpf 2004) Further, by allowing for different mixes of public services across jurisdictions, decentralization can achieve an efficient allocation of resources either by forcing local governments to compete for constituents, who will choose their preferred mix of public services by 'voting with their feet' and moving to jurisdictions offering services more in line with their preferences or by allowing constituents to vote out of office politicians whose policies are not in accord with their preferences for public services (Tiebout 1956; Stigler 1957; Oates 1972; Musgrave 1983).

Decentralization has also been linked to efforts by international donors to promote public provision of primary health care. The World Health Organization stressed the importance of primary health care and the role of community participation in planning and providing health services in policy documents such as the 1978 World Health Organization/UNICEF *Primary Health Care Declaration of Alma Ata* and the 1981 *Health for All by the Year 2000* (World Health Organization 1978, 1981). As noted by several authors, promotion of primary health care was seen as incompatible with centralized systems of health care (Collins and Green 1994), though concerns about equity and sustainability, rather than efficiency, generally spurred these efforts. Other donors (World Bank, 1987) have cited the efficiency gains from decentralization among a package of health sector reforms, including expansion of risk coverage, charging of user fees for private health services among those able to afford them, and better use of private and nongovernment resources. As argued by the World Bank, "in countries where managerial resources are scarce, communication is difficult, transportation is slow and many people are isolated, decentralization of the government service system should be considered as one possible way to improve efficiency" (World Bank 1987).

Countries often cite multiple reasons for decentralizing their health sectors. In Uganda, the goals of decentralization included bringing political power closer to local communities, responding to local needs, and building local capacity (Jeppson and Okuonzi 2000). Public participation in Zimbabwe was viewed as a means to enhance coverage, access, and effective utilization of health care and prevention services (Lowenson 2000). Senegal believed decentralization "brings the government closer to the people" (Ndiaye 1990). For Mexico, "decentralization was an opportunity to revitalize democracy, facilitate community participation and encourage intersectoral cooperation."(Alvarez 1990, p.70). Decentralization in Mexico was also intended "to share political power with the state governments, reduce the fiscal burden at the central level, rationalize the supply structure, and

improve management" (Griffin 1999). The rationale behind Kenya's decentralization included the desire to provide an enabling environment for improved health sector performance, increased responsiveness to local health needs, improved multi-stakeholder collaboration, and increased potential to develop new funding mechanisms (Oyayo and Rifkin 2003). Improved cost effectiveness and cost control were the reasons that the Netherlands pursued decentralization (Schrijvers 1990). Zambia cited these reasons along with improved autonomy and equity of access to care (Blas and Limbambala 2001). China included the desire to increase quality of services, contain costs at the state level, and increase local financial contributions as rationale for decentralization (Tang and Bloom 2000). Spain also sought to simplify administrative proceedings, to quicken decision making, to improve access to healthcare, and to facilitate intersectoral cooperation (Artigas 1990). In Bahia state in Brazil, decentralization was intended to: "(i) improve the coverage of the key health interventions that influence the basic health outcomes of the population, (ii) reduce the inequality in the distribution of publicly financed health care, and (iii) improve the financial sustainability of the health sector through greater efficiency and through improved mechanisms for cost control" (World Bank 2003).

2.4 Forms of Decentralization

The nature of decentralized health systems varies from country to country and tends to evolve over time as governments change and institutional and human capacity improves. Most countries in Latin America have tiered systems of health service delivery with responsibilities dispersed among the central, regional or departmental, and municipal governments. The decentralization process in Bolivia in the mid-1990s, for example, involved the transfer of assets of health centers and some hospitals from higher levels of government to the 311 municipalities. Mexico devolved responsibilities to the state level and to 139 medical zones in 1997 (Griffin 1999).

The Philippines has followed a similar tiered system, with responsibilities divided between the central Department of Health, provinces, and cities/municipalities. In the early 1990s, nearly all former department responsibilities, including provincial and district health offices, construction, operations and maintenance of hospitals, purchases of drugs and medicines, operation of the primary health care system through rural health units and *barangay* health stations, and operation of field health services and infirmaries were devolved to local government units. The central Department of Health retained responsibility for policy development, standard setting, monitoring and evaluation, and the financing and planning of core health programs and a national health insurance plan, and, in reality, many of the largest of the country's hospitals (Schwartz, Guilkey, and Racelis 2002; Ramiro et al. 2001).

In much of sub-Saharan Africa, decentralized health systems have frequently been two-tiered, corresponding to the central and district levels. In Zambia, where decentralization began within the health sector, emphasis was placed on the delegation of authority and resources to the district health management teams and the development of local health center committees to set local priorities and oversee local health centers (Blas and Limbambala 2001; Bossert and Beauvais 2002; Bossert, Chitah, and Bowser 2003).

In Uganda, responsibility for service delivery for all but a few national hospitals was devolved to the district level and resulted in the creation and strengthening of district health management teams, headed by the district director of health services (formerly the district medical officer). Decentralization was supported by a ministry of local government, which tracked changes in public sector functions and intergovernmental transfers and flows of resources within different sectors. An elected district health committee within the district council was created to perform legislative functions, planning and policy making, supervision of lower-level health committees, and

coordination of health sector participants, while the district health management teams were responsible for strategic planning, implementing district health activities, distributing drugs and vaccines, assessing manpower requirements and training needs, and monitoring and supervising district health activities (Hutchinson 1999).

Management of human resources varies from country to country, though in most countries staff are paid from the central treasury (Kolehmainen-Aitken 1998). In Tanzania, most hiring and firing decisions are made centrally, introducing long delays and difficulties in holding workers to account for poor performance (Mills 1994). In Nepal, recruitment at all levels is performed by the central Public Service Commission. Doctors are appointed by the central ministry but other staff are appointed by lower levels. In Bangladesh, the six administrative divisions (covering 20 million people on average) have authority over movements of doctors while districts are permitted to select paramedical and support staff (Pokharel 2001). In Mexico, states have the responsibility for human resources (Griffin 1999).

It is often expected that the central government will play a declining role in a decentralized system. In most countries, responsibility for strategic planning, policy making, regulation, and accreditation remains with the central government. Financing of care for the poor and uninsured also generally remains with the central government, as does the important role of disseminating health information and providing national public goods. However, switching from a provision to a supportive, normative role has been problematic for many central governments. In India and other countries, the central government has retained control of large vertical programs (Pokharel 2001). Reorienting the Ministry of Health in Uganda in line with its revised responsibilities meant switching from a top-down approach to one in which districts communicated their needs. Initial restructuring of the Ministry of Health actually led to an increase in size (Jeppson, Ostergren, and Hagstron 2003). It also led to the creation of several new central Ministry of Health structures, including the National Steering Committee on Primary Health Care, the National Health Assembly, the Health Service Commission, and the Inspectorate (Medical Audit) Division (Hutchinson 1999).

Nonetheless, expenditures at the central level tend to decrease as the central government removes itself from most service provision. In Mexico, for example, spending at the federal ministry level decreased from 12.2 million pesos in 1995 to 9.5 million pesos in 1999, while state-level expenditures increased from 4.8 million to 16.4 million pesos (Griffin 1999). In the Philippines, in the first year of decentralization in 1993, the budget for the national Department of Health was decreased by 50 percent, largely because responsibility for hospitals was devolved to the provincial level (Schwartz, Guilkey, and Racelis 2002).

In some countries, decentralization has involved the establishment of completely new administrative and political jurisdictions. In Uganda, decentralization involved subdividing existing districts into smaller districts, with a resulting expansion in the number of districts from 33 in 1993 to 56 by 2003. Similarly, in Ghana, decentralization first required the re-alignment of boundaries to produce 110 districts from the existing 68 districts (Cassels and Janovsky 1992).

In many countries, new management structures have been established at the local level. In Mexico, for example, semi-autonomous “decentralized public organisms” were established that included within their governing boards the state governor, a representative from the federal Ministry of Health, a trade union representative, and the state health minister (Griffin 1999). In Zambia, district health boards were created to oversee the actions of district health management teams (Bossert, Chitah, and Bowser 2003).

In other countries, extra-jurisdictional and intra-jurisdictional administrative bodies have been established to oversee and coordinate activities within a set of contiguous areas. In the late 1990s, Uganda introduced a system of health districts, corresponding to multiple administrative districts. The rationale was to ensure regional harmonization of health services (Hutchinson 1999; Jeppson 2001). The Mexican Social Security Institute created 139 medical zones, each covering approximately 100,000 to 200,000 people (Griffin 1999). In Brazil, concern over the loss of economies of scale in the production of complex medical services led to the creation of multi-municipality health micro-regions, in which municipalities contract with one another to ensure access to referral services. These micro-regions were also used as the basis for allocating federal recurrent and development funds. Different governance and management arrangements for the micro-regions, however, are still being tested (World Bank 2003).

Decentralization processes are often phased in slowly. Frequently, this staggered approach proceeds geographically, with some jurisdictions receiving greater responsibilities and others receiving similar responsibilities subsequently. Specific administrative and fiscal functions are also frequently devolved in stages. The decentralization process initiated in Mexico in 1983 involved first only 14 of the 32 states of the country (Griffin 1999). Decentralization in Argentina, beginning in 1978, transferred responsibilities for the running of health facilities to the provincial level, with subsequent waves of decentralization transferring responsibilities even lower to the municipalities (Griffin 1999). Countries such as Nepal and Bangladesh have developed policy documents and long-term plans for decentralization though the actual implementation of decentralization has been slow (Pokharel 2001).

2.5 Results of Decentralization

As noted previously, there is nothing inherent in decentralization that ensures that it will be successful. *Successful decentralization relies upon balancing authority and accountability with requisite levels of skills and capacity and flows of information.* Access to reliable information, in particular, permits decisions to be made with a full understanding of circumstances and permits constituents and stakeholders to observe the performance of those charged with ensuring adequate health care.

In spite of the wide coverage of decentralization programs and extensive theoretical support, decentralization has not always fulfilled its stated objectives. In some cases, decentralized health systems may even have impacts worse than centralized systems. The negative effects of decentralization often lie in the discrepancies between the devolution of administrative powers – clearly articulated and assigned – and mechanisms to keep in check those who have been vested with new powers, the financial means to implement devolution, and technical skills to implement and to monitor and evaluate the decentralization process (Mills 1990; Prud'homme 1995; and Tanzi 1996).

While decentralization has been extensively studied, there has been a shortage of studies that have been able to attribute in a rigorous and scientific manner positive outcomes uniquely to the influence of decentralization processes. Absence of solid evidence, however, does not imply ineffectiveness, but rather the need for more intensive efforts at data collection and evaluation. Much can be said about the effects of decentralization in a variety of areas, including the experiences of shifting authority and accountability and the resulting effects on equity, efficiency, resource allocation, and community participation.

2.5.1 Authority and Accountability

By definition, the devolution of responsibilities from central to lower levels of government has expanded the roles played by local health officials. In most cases, these shifts in authority have corresponded to changes in accountability mechanisms. Decentralization in the Philippines has served to empower local governments, providing for regular elections and the potential to recall elected officials for breaches of public trust. Decentralization has improved the quality of governance "especially in re-orienting government from command and control to a service provider role" (Shah 1998, p. 15-16). In Peru, decentralization has been associated with greater local financial and administrative autonomy (Arredondo and Parada 2001). In Botswana, the main benefits have been "(i) greater and more effective community involvement, (ii) improved intersectoral cooperation, (iii) faster and more appropriate handling of administrative problems" (Maganu 1990, p. 46). Decentralization in Spain led to improvements of collaborative efforts between private and public sector (Artigas 1990, p.111). In Mexico, state and municipal governments now share the responsibility of providing funds for health services (Arredondo and Parada 2001). Within China's move to a market economy and greater government decentralization, devolution occurred within the health sector, and township governments are now held responsible for defining and developing local health care plans including funding health centers and appointing personnel (Tang and Bloom 2000).

Even so, numerous decentralization experiences have been stymied by unclear – and occasionally contradictory – lines of responsibility, particularly in periods of transition of responsibilities. This is often particularly problematic in the case of hospitals, which may operate within geographic areas but be autonomous from the health officials in that area. It is also particularly problematic when certain groups – labor unions, physicians – are not fully in support of the decentralization process (Collins and Green 1994, Alvarez 1990).

2.5.2 Capacity

The desired changes in authority and accountability often require developing new abilities and skills for managers or teams of managers and systems within local organizations to carry out their new functions. Capacity constraints have limited the effectiveness of many decentralization efforts. These deficiencies have included limitations both in the absolute numbers of human resources and in their level of training and preparedness for their new functions. A survey of district directors of health services in Uganda, for example, indicated that one of the chief impediments experienced by them was the shortage of trained staff to undertake their expanded service delivery and supervisory roles (Hutchinson 1999). Kenya has experienced problems because of inadequate infrastructure to "regulate the system, enforce standards and to provide an enabling environment for effective participation of the nongovernmental sector which provides over half of the health sector expenditures (Oyayo and Rifkin 2003). Decentralization efforts in Bolivia have also been hampered by weak institutional capacity (Bossert 2000a). A key result therefore of many decentralization processes is the need for capacity building both before and during the process. As concluded by one researcher, "to decentralize functions without accompanying strengthening of lower-level management capacity can lead to the de facto abandonment by the state system of those functions" (Collins and Green 1994).

2.5.3 Quality

A frequent hazard of decentralization is that it provides only moderately greater incentives for efficient use of and accountability for inputs in the provision of health services, in effect recreating many of the technical and cost inefficiencies of a centralized system in each decentralized local jurisdiction. Absence of suitable accountability mechanisms can lead to the introduction or worsening of corruption and mismanagement of resources. Without well-functioning systems for representation and accountability, decentralization can lead to an increase in leakages of resources – funds, drugs, and supplies – from the health sector. If local governments have weak administrative or technical capacity, overall efficiency or resource use may decrease (Brinkerhoff and Leighton 2002).

Evidence from six countries involved in decentralization processes in Latin America "suggests that improving the quality of health care will have to go beyond transferring assets and staff to municipal governments. It may require more fundamental changes in the role of the public sector, including an increased role for the private sector in the provision (as opposed to financing) of health care, and a shift in the focus of government of financing from inputs to outputs" (Griffin 1999, p. 85). Output-based financing does appear to have taken root in several countries, including Brazil and Chile.

With the exception of hospital autonomy reforms, few decentralization efforts have carried the process down to the level of the health jurisdictions or facilities. Even so, other forms of devolved accountability and decision-making apparatus have involved the creation of hospital and local health management boards.

That said, several countries have reported improvements in service availability and the quality of health care services. Improvement of curative services at the local level has been seen in Uganda through local upgraded health centers (Jeppson and Okuonzi 2000). A survey of district health management teams in Tanzania noted that utilization of health services was considerably higher in decentralized districts than non-decentralized districts (Hutchinson 2002).

2.5.4 Financing, Intergovernmental Transfers, and Resource Allocation

Decentralization is intended to improve the allocation of resources to priority health areas by making use of the informational advantages that local planners may have over centralized health officials. The results on the ground, however, frequently tell a very different story, and numerous countries have reported problems with greater autonomy in financial decision making. These problems generally fall along several lines: insufficient funding to cover expanded responsibilities, funding mechanisms that lack transparency, poor financial planning and accountability capacity, and priority-setting that does not accord with national sector policies.

In Brazil, decentralization initially did little to change the system of financial allocations both to states and to jurisdictions within states, which tended to be based on historical allocations, favoring those areas with already existing infrastructure. "In principle, the allocation of federal [*Sistema Unico de Saúde*] funds within each state should largely be a technical exercise based on the needs of the population. In practice, it essentially consists of a process, by which the total resources available are distributed to specific providers based on historical allocations" (World Bank 2003). Further, a constitutional amendment passed in 2000 placed considerable restrictions on states and municipalities, requiring them to earmark for health 12 percent and 15 percent respectively of their own revenues (World Bank 2003).

Most researchers have argued that true decentralization has not occurred unless local planners have authority over the financial resources that allow them to make meaningful decisions affecting the health sector. In several country cases, therefore, the extent of decentralization and fiscal autonomy has been limited. In Mexico, resource allocation decisions at the state level have been restricted only to local revenue (Griffin 1999).

In most countries, local governments rely upon some transfers to finance their health care service delivery, particularly for national programs that are implemented at the local level. Intergovernmental transfers appear to work best when they are based on simple, verifiable criteria. In Uganda, unconditional block grants to districts are determined using a weighted formula based on the district's population and infant mortality rate (Hutchinson 1999). In the Philippines, for example, Internal Revenue Allotments, unconditional block grants to local government units, are based 50 percent on population, 25 percent on land area, and 25 percent on category (province, city, or municipality) (Schwartz, Guilkey, and Racelis 2002). However, such a formula, while simple, may bear little relation to differences in need or in the costs of service provision across jurisdictions.

The dearth of capacity for planning and budgeting, either real or imagined, has often been used as an excuse to slow decentralization efforts. In Uganda, much concern was expressed that local levels of government lacked the capacity needed to assess and set priorities for themselves, leading to unbalanced funding priorities (Jeppson 2001; Brinkerhoff and Leighton 2002).

Many countries have reported more participatory financial planning and budgeting. Bottom-up planning, in which subdistrict officials submit health budgets to district authorities, has been implemented in several districts in Uganda (Hutchinson 1999). Uganda also experienced improved district level participation in the budgeting process, increased productivity of district level health managers and small decline in numbers of Ministry of Health staff (Awio and Northcott 2001). Bottom-up planning is also reportedly part of the budgeting process in Bangladesh and Nepal. Health ministries prepare guidelines for activities, and local units are supposed to prepare plans based on these guidelines and submit them for review to higher levels. In practice, however, local input has been limited (Pokharel 2001).

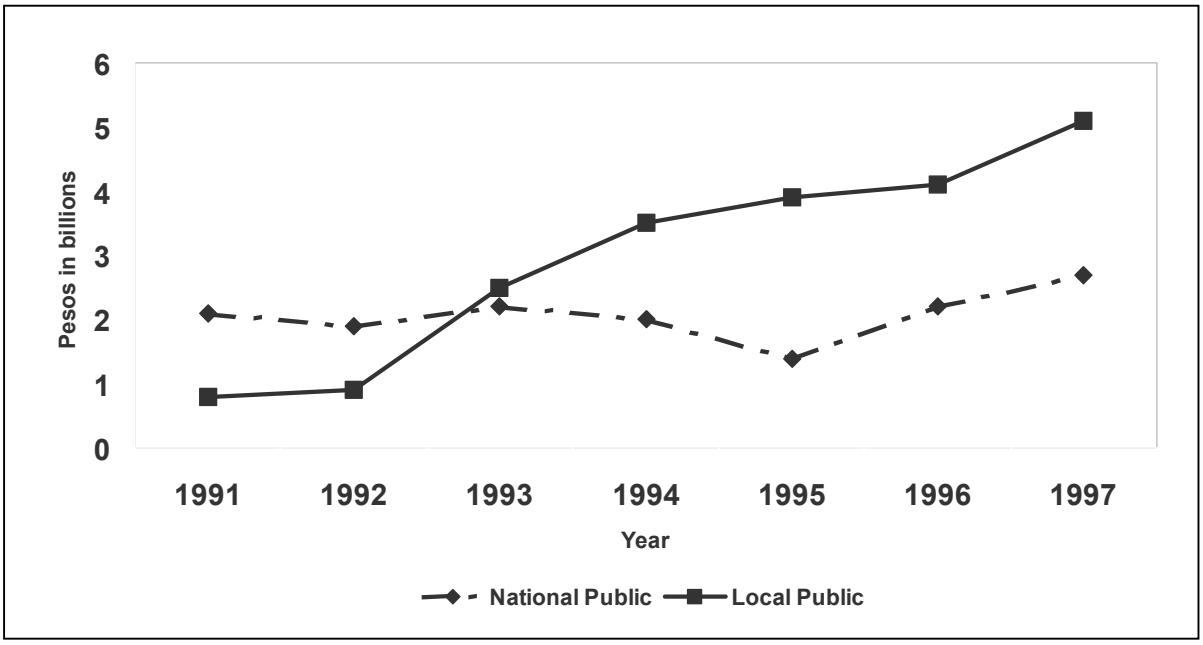
Efficiency concerns and the technical nature of the good in question – whether its benefits extend to a whole class of users and non-users of the good or whether the benefits are confined only to the direct users – also dictate the appropriate level at which decision making should occur. For some public goods, in particular those with interjurisdictional spillover benefits or which involve significant economies of scale, decentralization can be carried too far. In Brazil, for example, the *Gestão Plena do Sistema Municipal*, which entitled municipalities to receive block transfers of funds directly from the federal government for all levels of care, provided incentives for municipalities to over-invest in hospitals, laboratories, and high-tech equipment, which were then under-utilized given the municipality population sizes. New inefficiencies emerged from the system of transfers directly to municipalities, due to: "(i) a loss of the economies of scale that characterize the production of most complex medical services; (ii) a reduction in the size of the risk-pool used to finance complex care; and (iii) a large increase in the transaction costs associated with the need to replicate administrative functions in all municipalities" (World Bank 2003).

The results on resource allocations to public goods in decentralized health systems are mixed. A study of 140 low- and middle-income countries over the period 1980-1997 found that decentralization was associated with higher childhood immunization rates among the low-income countries but lower immunization rates among the middle-income countries (Khalegian 2003).

A study of allocations of public funds in Bolivia following decentralization indicated a strong relationship between spending patterns and measures of social need and local priorities. The study's author concluded that the findings were "consistent with a model of public investment in which local government's superior knowledge of local needs dominates the central government's technical and organizational advantage in the provision of public services" (Faguet 2001). The experience in Bolivia was also associated with greater overall expenditures at the local level, particularly with respect to allocations for operations and maintenance (Griffin 1999).

In the Philippines, the overall level of resources devoted to public health increased as a result of decentralization. This change occurred largely because provinces, cities, and municipalities allocated a higher level of resources to health (Figure 1), while national health expenditures remained much the same. This also reflected the increasing importance of public health care in the aggregate, which increased from 20 to 35 percent of total government health expenditures. In contrast, expenditures on private good types of health care decreased from 55 percent to 40 percent of the total, though transferring control of hospitals to the provincial level increased the proportion of local government expenditures on private goods activities relative to public health care activities (Schwartz, Guilkey, and Racelis 2002).

Figure 1. National and Local Government Expenditures on Public Health Care in the Philippines, 1991-1997

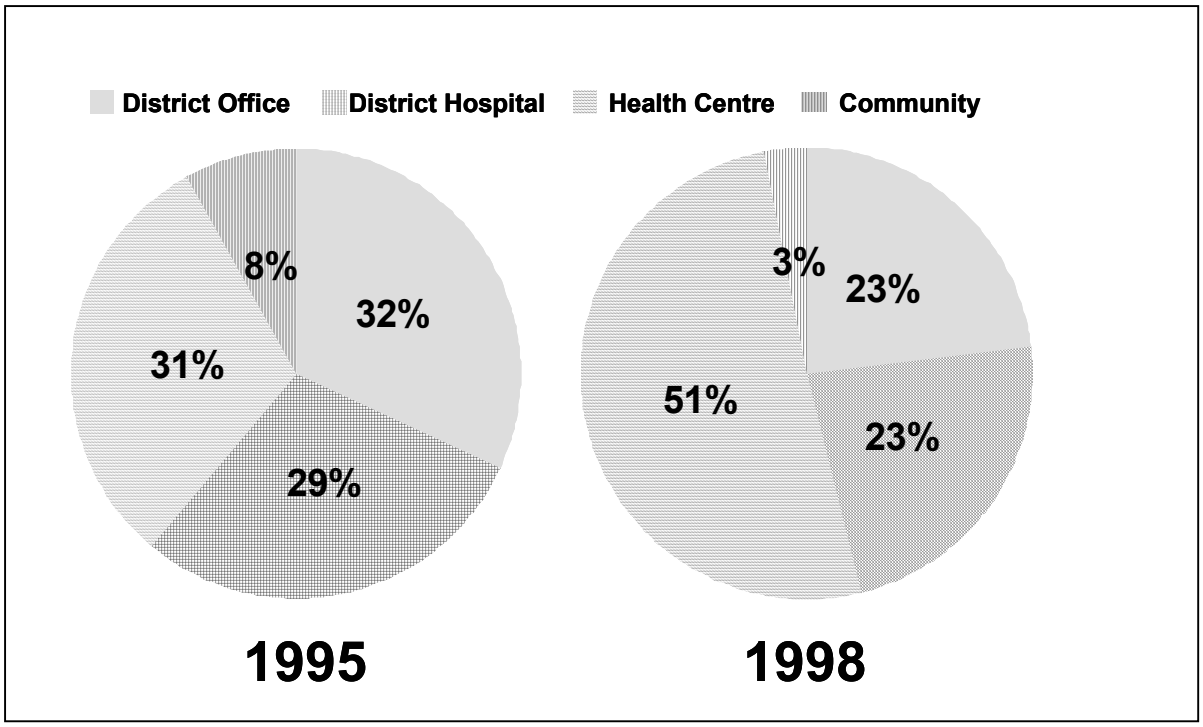


Source: Schwartz, Guilkey, and Racelis 2002

In Zambia, decentralization was associated with an increase in the share of resources allocated to basic care at health centers and declining shares to district offices and district hospitals (Figure 2) (Bossert, Chitah, and Bowser 2003).

Experiences in other countries, however, have shown less encouraging results. In Uganda, for example, analyses of local government health budgets indicated that decentralization was associated with declining shares of funding for public goods type activities in place of funding for private goods and district offices (Hutchinson 1999; Akin, Hutchinson, and Strumpf 2004).

Figure 2. Distribution of Expenditures on Primary Care Facilities, Zambia



Source: Bossert, Chitah, and Bowser 2003

In several countries, concerns about local government expenditure patterns have prompted central governments to develop remedial measures and to condition transfers. The dramatic decrease in the percentage of funds allocated to primary health care at the district level after decentralization led Uganda to institute a system of conditional grants for primary health care (Hutchinson 1999; Jeppson 2001). Brazil instituted a capitation plan for basic care (*Piso Assistencial Básico*), which funded municipalities to provide a basic package of health services. Municipalities also had to agree to the implementation of information systems for monitoring and evaluation purposes. This arrangement improved both the share of resources going to basic care and historical inequities in the allocation patterns within states (World Bank 2003).

2.5.5 Equity, Access, and Health Impacts

The majority of studies examining the effects of decentralization on equity have focused on the distribution of intergovernmental transfers and the impacts on per capita spending. In that regard, the impact of decentralization on more equitable distributions of resources and on better targeting of resources to the poor has been mixed. To the extent that the central government cedes control over resources, it has a diminished capacity to perform one of its most basic functions – redistributing resources from relatively well-off jurisdictions to less well-off ones. In the absence of well-functioning redistributive mechanisms, decentralization can exacerbate existing differences. Local governments with few resources have little to allocate to health and education, thereby potentially widening the gaps in health outcomes and socioeconomic indicators between rich and poor areas. Early in the health services decentralization process in the Philippines, for example, concerns about local capacity and the potential for inequitable allocation of resources prompted World Bank

reviewers to characterize the balance between the risks and rewards of health services devolution as a "close call" (World Bank 1994).

Only a handful of studies have examined the effects of decentralization on other aspects of equity, such as equity of access, utilization of health services, or health outcomes. In Ghana, decentralization is believed to have led to more equitable access to care due to increasing budget allocations to districts and more direct control of spending decisions (Agyepong 1999). In Zambia, access to health care and consumer satisfaction actually worsened during decentralization and health sector reform (Blas and Limbambala 2001), Mexico also reported no improvement in equity of access or quality of care (Alvarez-Guttierez 1990). In Uganda, while decentralization was initially associated with declining expenditures on primary health care, the greater fiscal autonomy provided by decentralization increased utilization of all health services – both public and private goods (Hutchinson, Akin, and Ssengooba 2003).

One study, performed using cross-national data, found that – in developed and developing countries alike – fiscal decentralization was negatively associated with infant mortality. This association was particularly important in relatively poor countries, and effects were greatest in environments with strong political rights, even when levels of corruption were high (Robalino, Picazo, and Voetberg 2001).

2.5.6 Community Participation

One of the often-cited objectives of decentralization is to increase community participation in the planning and management of the health sector. These efforts too have had mixed results. In the Philippines, the introduction and structure of local health boards was seen not as the transfer of power to the community, but as devolution of power from state officials to the mayor (Ramiro et al. 2001). In Zambia, members of community health boards opposed to the government were eliminated and replaced with ruling party representatives (Blas and Limbambala 2001). The ability of these health committees to serve as the link between the community and health workers has also been called into question.

In Uganda, health unit management committees have been accused of participating in the misallocation of resources at health units, using cost sharing revenue to pay themselves "sitting allowances" for meetings. Subcounty health committees, on the other hand, have been actively involved in strategic planning in many districts (Hutchinson 1999).

2.6 Decentralization Lessons Learned from Country Experiences

As noted in the reviews of country experiences, decentralization is unlikely to be a cure for all the ills of a poorly functioning health sector. Its success or failure will depend on the existence of well-specified functions and responsibilities, mechanisms for holding individuals and governments accountable, and the capacity – both physical and financial – of local governments to undertake activities.

Reviewers of decentralization experiences have developed numerous criteria and pre-conditions for decentralization to lead to its intended beneficial outcomes, the absence of which can lead to maintaining the status quo or even worse. Most researchers tend to emphasize the need for clarity in the lines of responsibility and accountability, ownership, and political support. Others have outlined key design principles: "finance following on the clear assignment of functions, informed

decisionmaking, adherence to local priorities, and accountability" (Rondinelli 1999). A short list of decentralization pre-conditions and considerations, gleaned from country experiences, includes the following:

1. The process of decentralization requires strong political backing at both the central and local levels, with stakeholder ownership of both the plan for decentralization and the process of organizational capacity building.

2. Political objectives must be supported by the legal and institutional framework, the structure of service delivery responsibilities, and the system of intergovernmental fiscal transfers.

3. Decentralization should be accompanied by a clear delineation of responsibilities among the different stakeholders, with these responsibilities formally codified in legislation, regulations, or other binding instruments (Rondinelli 1999).

4. Changes in the roles and responsibilities for the different actors in the health sector, particularly those for local government health officials, should be accompanied by training and plans for building capacity (LaFond and Brown 2003; Pokharel 2001).

5. Even under decentralization, local governments may have limited revenue-generating capacity and therefore are likely to remain reliant on intergovernmental transfers from the central government. Intergovernmental transfers should be determined openly and objectively, ideally by a clear, simple, and verifiable formula (Rondinelli 1999).

6. Local financing and fiscal authority should be linked to service provision responsibilities and functions "so that local politicians can deliver on their promises and bear the costs of their decisions" (Rondinelli 1999; Pokharel 2001).

7. Clear lines of authority should be balanced with clear mechanisms of accountability – legislative and judicial systems, financial management systems, sanctions, codes of conduct, standards of care, electoral procedures, market forces, and enforcement organizations.

8. While decentralization generally involves a diminished central government role in service delivery, certain functions are likely to be most efficiently undertaken at the central level – research and dissemination of research findings, national public goods, health information, standards, regulations, and accreditation. Decentralization still requires a strong central capacity for monitoring and enforcement of regulations and standards.

9. Information on the costs of services, delivery options, and available resources must be known to local communities so that decision making can be informed and meaningful. Communities must have the information on public sector performance that allows them to react and to hold officials and politicians accountable (Rondinelli 1999).

10. There must be binding and credible mechanisms to allow communities to express preferences so that incentives exist for community participation (Rondinelli 1999).

11. Research institutions should be involved to monitor and analyze practical aspects of the decentralization process (Pokharel 2001).

The above list highlights areas where monitoring and evaluation efforts should be particularly vigilant, as these are areas where the determination of decentralization's success, failure, or progression towards stated goals are likely to be made.

3. Conceptual Framework for Monitoring and Evaluation of Decentralization

This chapter presents information on the purposes of monitoring and evaluation of decentralization and outlines a conceptual framework for monitoring and evaluating decentralization processes and decentralized health sectors. The conceptual framework illustrates the changes that decentralization seeks to achieve along key dimensional areas (authority, accountability, capacity, and use of information) and along key functional areas (political/legal, fiscal, and organizational) and the effect on these changes on health system performance and health status.

3.1 What Are Monitoring and Evaluation of Decentralization?

Monitoring and evaluation are processes intended to collect information on a decentralization program to ensure that policy making, strategic planning, and assessments of performance are conducted on a sound empirical basis. Using appropriate tools, data collection, and research designs, the processes of monitoring and evaluation can be used to:

- Assess the progress of decentralization: Is decentralization proceeding as planned? Are the anticipated changes in local institutions, structures, and resource flows taking place?
- Determine the level of effectiveness of decentralization
  - Relative to a baseline: Is the decentralization process reaching its objectives? Has decentralization contributed to changes in health system performance and health status?
  - Relative to other systems: Is the decentralized system more or less effective than the former (centralized) system? Or than a system in another country?

The systematic collection, analysis, and reporting of information are critical elements of decentralization programs. The information gathered by these means has numerous uses, including verifying compliance with policy goals, analyzing alternative outcomes, and guiding decision making. “Effective data collection and use allow for timely feedback to determine necessary changes in the focus and pace of decentralization, as well as to build local capacity for evidence-based decision making” (Weist 1999).

As noted above, monitoring and evaluation of decentralization focus on many of the same variables as monitoring and evaluation of health system performance. However, monitoring and evaluation of decentralization attempts to capture those particular variables that are also specific to decentralization. The **monitoring** of decentralization involves the routine tracking of key pieces of information on health system inputs, processes, outputs, and outcomes that are expected to change as a result of a range of interventions launched under decentralization. It focuses on identifying the content of the decentralization program; its scope or coverage across geographic, jurisdictional, or functional areas; the adherence of the program to stated procedures, mechanisms, and goals; the

quality and efficiency in which it is being implemented; the progress it is making; and finally whether it is having its desired results. A key purpose of monitoring is to gather information on the performance of the decentralization process so that it can be modified as necessary to better achieve its goals.

Information for monitoring may be gathered through a variety of routine data collection mechanisms, including regular reporting of financial accounting systems, reviews of service records and health information systems, key informant interviews, direct observations, or quantitative population-based surveys to assess program coverage, consumer satisfaction, and use of health services. Monitoring can help to answer numerous questions about the status of a decentralization process, addressing issues such as:

1. Are new mechanisms for transfer of authority clearly established by law and are they functioning?

2. Are new systems of accountability, including information gathering and reporting, understood by key stakeholders and functioning effectively?

3. Is capacity among key stakeholders improving at a pace and level that will enable the stakeholders to take on new functions?

4. Are access, efficiency, responsiveness, and quality improving?

A separate component of the evaluation process for decentralization is **impact evaluation,** which involves trying to measure the effectiveness of decentralization in attaining specified goals, particularly relative to centralization or to the situation that would have occurred in the absence of decentralization. The aim of impact evaluation is to determine causal linkages or to attribute responsibility for observed changes – for example, in the efficiency of service delivery, in more equitable distributions of social services, or in government responsiveness – to the decentralization process and not to some other factor operating within the health sector or external to it. Impact evaluation involves greater attention to research designs – the timing and intensity of a decentralization process and the presence of comparison or even randomly assigned control group jurisdictions.

Impact evaluation can help answer several questions about the effectiveness of a decentralization process, such as:

1. Has the transfer of authority for health planning and budgeting resulted in greater overall investment in public goods or tailoring of health services to better meet local health needs?

2. Has capacity building of district health management teams resulted in better decision making at the local level?

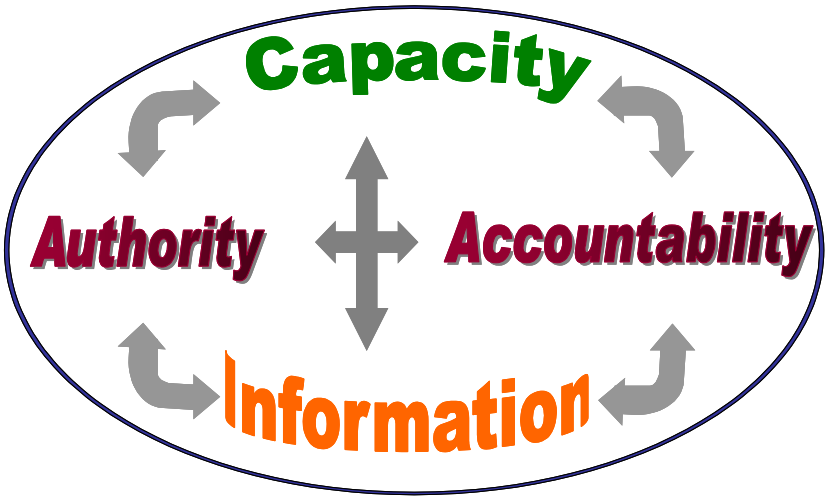
3. Does the retention of staff hiring and firing authority at the national level affect the quality of care at the local level?

3.2 Changes in Authority, Accountability, Information Use, and Capacity

The basis for the monitoring and evaluation framework laid out here is the recognition that decentralization seeks to affect health system performance through several key changes in the

structure of the health system and how it functions. Principal among these is the transfer of responsibilities and empowering of those who have better knowledge of local health systems or are in a more appropriate managerial position to access and use information on local circumstances. Decentralization also seeks to introduce new ways of behaving and to instill new values so that, for example, information on epidemiological profiles, service utilization patterns, and access to care become the primary basis for resource allocation. Decentralization seeks to create systems in which feedback can flow from clients, citizens, facility managers, and community leaders to decision- and policymakers. It might even introduce systems in which those overseeing the delivery of health services – facility management boards, clients, and local health officials – have the power to hold health workers, administrators, and elected officials accountable for their performance. In short, decentralization seeks to improve health system performance by changing the **authority** and responsibility among key actors, improving **information** flows for decision making and performance evaluation, and establishing **accountability** mechanisms and incentives to hold all actors in the health sector accountable for fulfilling their responsibilities (Figure 3).

Figure 3. Key Areas of Change under Decentralization



Successful decentralization also relies upon developing the organizational and technical **capacity** to carry out new functions associated with reduced or increased authority, increases in accountability to clients and constituents, and the generation and use of information. Each of the above three components is likely to require substantial capacity building: training in performing new responsibilities, assistance in building institutional capacity to hold health sector actors accountable for performance, and investment in information systems and human capacity for analysis. Each of these components is addressed more fully below.

3.2.1 Authority

Key to understanding the process of decentralization (and its objectives and performance) is ascertaining the distribution of responsibilities among the different levels of government and actors within the health sector. A typical (though perhaps idealized) division of responsibilities in a decentralized health sector is shown in Annex A. This shows a division of responsibilities along different political/legal, fiscal, and organizational functional areas among the central government, including, for example, the ministries of health, finance, and local government, legislative bodies, and regulatory agencies that are within the central government; regional levels of government;

districts/municipalities/local governments; service providers including hospitals and health facilities; and communities, community groups, and citizens.

Ideally, the distribution of responsibilities among the different levels of government in a decentralized health system should reflect a variety of factors, including commonalities in inputs (e.g., procurement systems, health information) and the benefits of uniform systems across the entire country, the spatial distribution of benefits and costs across jurisdictions, and the technical characteristics of production (i.e., economies and diseconomies of scale). Optimally, the national level should retain functions which benefit all subnational governments and jurisdictions (research, technical assistance, regulation of private and nongovernmental organization [NGO] providers and insurers), with significant national economies of scale or purchasing power (information generation and dissemination, international relations, procurement of drugs and equipment) or for which common standards reduce costs for all subnational governments (standards for care and employment, national health policies on conditions faced by a significant proportion of subnational jurisdictions). While decentralization means that responsibilities will shift away from the central government, it does not mean that the central government will have a minimal role.

> The role of the central government in ensuring and monitoring effective and efficient decentralization is especially critical when the main concern is to enhance service delivery, perhaps particularly with respect to services such as health and education that are important not only for national development but for poverty alleviation and welfare in general. Decentralization does not mean that the central government no longer has any responsibility in these areas. What it means is that the nature of this responsibility has changed from direct service delivery to one of regulating and monitoring the efficiency and equity of services delivered by others – usually local governments" (Litvack, Ahmad, and Bird 1998)

Lower levels, generally local governments, receive responsibility for service delivery with benefits exclusive to local constituents; supervision of facilities located within the boundaries of the jurisdiction; employment decisions and distribution of drugs, supplies, and equipment; collection of routine health information; and links with community-based organizations. In general, local governments should implement and administer standardized national policies (World Bank 1999).

3.2.2 Accountability

A second key component to the success of decentralization efforts is the putting in place of mechanisms to hold all actors in the health sector – from the health minister down to outreach workers in the village – accountable for their decisions and actions. Brinkerhoff (2003) identifies three primary purposes of accountability:

1. To control the misuse and abuse of public resources and/or authority;

2. To provide assurance that resources are used and authority is exercised according to appropriate and legal procedures, professional standards, and societal values;

3. To support improved service delivery and management through feedback and learning (performance accountability).

The mechanisms for holding health workers and officials accountable for performance and for abuse of power vary by the type of function and responsibility. Categories of functions for which

accountability applies include financial, performance, and political/democratic. Building political accountability involves developing institutions, procedures and mechanisms that "ensure that government delivers on electoral promises, fulfills the public trust, aggregates and represents citizens' interests, and responds to societal needs and concerns" (Brinkerhoff 2003, p. xi). This is achieved largely through democratic systems and electoral processes, though many country experiences have demonstrated that democratic systems may be susceptible to "capture" and lead to less-than-representative outcomes. In the health sector, this is likely to include mechanisms for electing local government officials that accord priority to health and health activities, for electing officials to hospital or clinic management boards, or even selecting village leaders.

Building financial accountability involves tracking and reporting flows of funds, including transfers, budgets, and expenditures, through the development of accounting procedures and periodic audits. Decentralization can improve financial accountability by implementing such systems at the national, local, and health facility levels.

Performance accountability measures are more diverse, extending from simple reporting requirements to more explicit sanctions. Performance accountability under decentralization relies upon well-defined systems of regulation, oversight and monitoring, as well as legal frameworks and judicial systems, administrative rules and operating procedures, markets and quasi-markets, professional norms and ethics, licensing and accreditation, and sociocultural values (Brinkerhoff 2003).

Box 1. Analyzing Accountability in the Health Sector: The Accountability Framework

One mechanism for assessing changes in accountability is the accountability framework (Brinkerhoff 2003, Aucoin and Heintzman 2000). The goal of the framework is to develop an understanding and highlight the interdependency of actors within the health sector as well as to determine where responsibility lies and how and by whom each actor is being held accountable. Assessment is made by identifying the major actors within the health sector: i.e., health service users, ministry of health, agencies of restraint, funding agencies, parliament, local government officials, NGOs, hospital boards, health councils, professional associations, unions, health care providers, and international donors.

This depiction of accountability linkages is depicted in the accountability matrix (Annex B). Each actor has weak, medium, or strong ability either to demand/impose or to supply/respond. Arrows are used to indicate the direction of accountability. Downward arrows indicate the ability to demand/impose, and horizontal arrows represent capacity to supply/respond. Each box may have two arrows. A lack of linkages may indicate opportunities for corruption, lack of responsiveness, poor quality services, and evasion of responsibility. Too many linkages may limit the effectiveness of accountability (Brinkerhoff 2003).

3.2.3 Information

A key objective of monitoring and evaluation of decentralization is the generation of information – information for decision making and for holding officials, decision makers, planners, and health workers accountable for performance. Decentralization can create new flows of information so that decisions can be informed and performance can be evaluated. Proximity of stakeholders – e.g., health officials, clinic managers, patients – may increase the potential for information to be correct and to be used by decision makers (authority) and system monitors (accountability). These flows of information can occur at multiple levels and stages of the health production process. Informal and formal knowledge of health conditions and needs, mechanisms such as management information systems, sentinel site data, or even word-of-mouth or casual observation and experience can influence local health officials in their planning of activities and the mix of health services. Public dissemination of

health sector performance, of flows of financial resources for health, and of what citizens should expect from their health system can arm users of public sector health services with the information to demand services that meet their needs and preferences. "One key lesson relevant everywhere is thus that the more that is known, and the more publicly that it is known, the better the outcome of decentralization efforts is likely to be, whatever their rationale and whatever the circumstances in which they take place" (Litvack, Ahmad, and Bird 1998).

3.2.4 Capacity

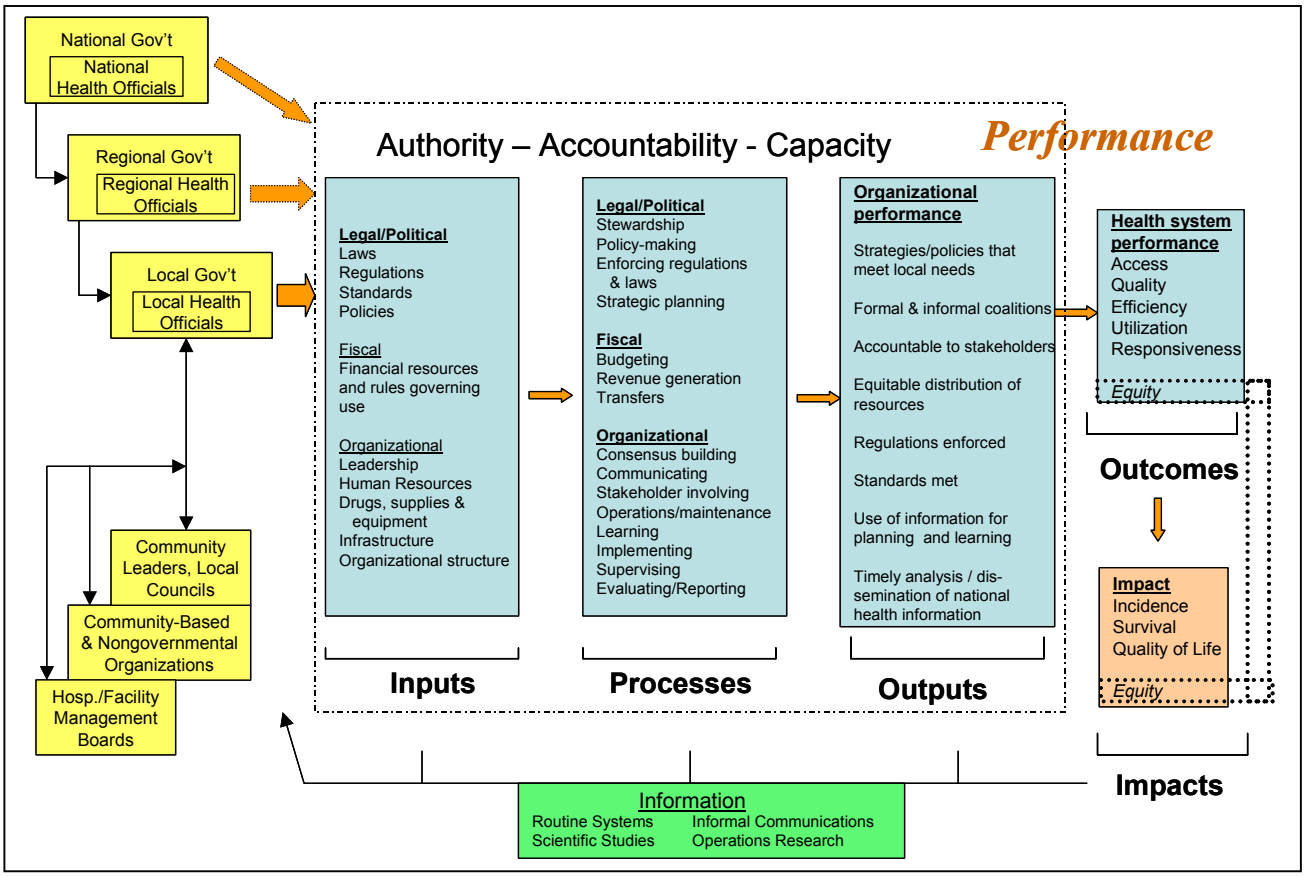
According to Goodman et al. (1998) capacity is the ability to carry out stated objectives. It is integral to performance and particularly to sustained performance in the health sector. Capacity is sometimes considered the "stock of resources" available to an organization or system as well as the actions that transform those resources into performance. Decentralization places high demands on local and national organizations to improve their capacity to handle new functions such as planning and budgeting, stakeholder consultation and consensus building, and managing information. It is not enough to devolve responsibilities or develop systems of accountancy without providing the necessary resources, skills, and guidance to perform that function effectively. Capacity needs are multidimensional, often crossing over material, technical, and cultural boundaries. In addition, capacity at one level often depends directly on support from another level. Capacity needs also change over time. As capacity improves, performance expectations grow. Capacity building is rarely a one-off investment and calls for continuous monitoring of capacity demands and the ability of organizations to meet them.

The four dimensions of the decentralization process (authority, accountability, capacity, and information) are expanded upon in Annex C, which examines their relationships within critical health system functional areas. An example of the interplay between these dimensional areas can be seen for "intergovernmental transfers." A key responsibility – determined ideally in consultation between central and local authorities – under decentralization would be the determination of resource transfers – the amount and type of transfer – from central to local governments. Accountability under decentralization could be improved by the use of a simple and verifiable formula (based, for example, on population and income) and by different conditionalities on the transfer (unconditional grant, conditional grant, matching grant). A relevant capacity consideration would be the existence of financial management systems to document and control flows of funds at the national and local levels, along with central or local capacity to audit financial records. A key informational consideration (for accountability) would be whether or not information on central government transfers to local governments is published by local media. Similar questions could be asked for other functional areas.

3.3 Conceptual Framework

We develop a conceptual framework which attempts to bring into focus the four dimensions of the decentralization process (authority, accountability, capacity, and information), their relationships to key functional areas for change under decentralization, and the expected result of decentralization in terms of the intermediate and final objectives and goals. The conceptual framework for monitoring and evaluation of decentralization (Figure 4) follows a progression standard in the monitoring and evaluation literature which begins with health system inputs, outlines key processes essential to the proper functioning of a health system, and identifies common outputs and intermediate system goals of decentralization and outcomes in such a system.

Figure 4. Conceptual Framework for Evaluating Decentralization



In this context, inputs represent the resources in the health system that are involved in the decentralization process. Processes relate to functions or actions within the health system to transform inputs into organizational and health system performance – the anticipated results of decentralization. These processes are often the target of decentralization interventions. The outputs presented in the conceptual framework are intermediate results that are monitored to determine whether expected changes in authority, accountability, and capacity have taken place. Outcomes represent the changes in performance of health system at different levels that should result from decentralization. Ultimately, assuming all other steps have successfully been achieved, decentralization leads to the desired long term health impacts.

The actors and variables under study in the monitoring and evaluation of decentralization and the relationship between them are presented in the conceptual framework. On the left are the different actors or levels at which change takes place during a typical decentralization process: national, regional, and local government (and their public sector health institutions) and community level. Decentralization programs seek to redistribute authority among these actors and to strengthen the capacity of different actors to hold service providers and officials accountable for performance. A critical goal of decentralization is in affecting proximity – to information, to clinics and service providers, to constituents, and to communities and local organizations that can transmit signals about preferences and needs. This is represented by the physically closer representation of local governments and health officials to the inputs, processes, and outputs in the conceptual framework and to communities and local organisms.

In this context, the key **inputs** in a decentralized health sector are considered to be of several types, largely categorized into political/legal, fiscal, and organizational variables. The key political inputs include the laws governing the health system and the functioning of the public sector, including electoral policies, the regulations and standards that dictate satisfactory performance of the system, and the policies that determine the system's goals and the mechanisms for achieving those goals. Laws, policies, norms, standards, regulations, and historical tendencies shape the financing and organizational structure of the health system too. These inputs largely dictate "the rules of the game in society (or the incentives and constraints which influence human behavior) and the organizations and other means to enforce them. Both the rules and enforcement mechanisms influence the design of decentralization" (Litvack, Ahmad, and Bird 1998).

Fiscal inputs in countries undergoing fiscal decentralization may include the revenue-generating procedures, systems of transfers among intergovernmental agencies, the degree of control that decision makers have over financial resources, including insurance and risk-pooling schemes, and mechanisms for accounting for funds. Financial resources – either generated within the system through payments for health services or insurance or from outside the system through general transfers – are chosen based on the level of priority given to health by national, regional, and local officials. Key financial inputs include the laws, regulations, and mechanisms governing the transfer of funds between levels of the government and the autonomy which subnational jurisdictions have over those funds.

On the organizational side, actors, particularly at the local level, decide the level and distribution of health facilities and programs and their corresponding staffing and supply characteristics (infrastructure, drugs, supplies and equipment, and operations and maintenance). These inputs also include the organizational structure of the system, the roles of public/private providers, the treatment of human resources (procedures for hiring, firing, sanctioning, and rewarding), procedures for infrastructure investment and upgrading, and aspects of health sector leadership and stewardship undertaken by government health officials.

Processes and process indicators, which are described in subsequent sections, are intermediate factors referring to activities that improve the quality, accessibility, distribution, and efficiency of service delivery and health system functioning. The key processes monitored in a decentralization program are those that demonstrate the redefined roles and responsibilities of key actors, changing the authoritative structures of the health system and the means and focus of accountability, and highlighting the new capacities needed to fulfill different functions. Key processes under decentralization are the carrying out of proscribed functions: enforcing legislation, regulations, and standards; providing leadership in planning and policy making; budgeting, planning, and transferring resources based on costs and needs; providing guidance and technical assistance, supervising; implementing service delivery; and evaluating and communicating results.

Outputs of decentralization are the intermediate improvements in the organizational performance of the health system. These might reflect the improvements in policies and programs to better reflect local needs and conditions. They might also reflect a system that better responds or is more accountable to stakeholders through local elections, market mechanisms, or community input or a system that performs in a more ideal manner because regulations are enforced and standards adhered to. These outputs might also include better use of information to inform and improve upon service delivery and policy making; more equitable distributions of health resources and services; or higher quality services and greater adherence to standards.

Outcomes of decentralization are likely to reflect many of decentralization's stated goals – efficiency in service delivery, improved quality, more equitable access to and use of health services,

and services that reflect constituents' wants and needs. The quality of these services is determined by the capacity of institutions and individuals, the existence of systems for holding workers accountable for performance, and systems for ensuring proper management and use of drugs, supplies, and equipment, and efforts to ensure that equipment and infrastructure are maintained in good working order. It is these four components – inputs, processes, outputs, and outcomes – that make up the key contextual and substantive material for the monitoring and evaluation of decentralization processes and are likely to become the focus of most decentralization monitoring and evaluation plans.

The **impact** of decentralization relates to the long-term effects on incidence of disease, survival, quality of life, and sustainability (Rehle and Hassig 2001). While input, process and outcome variables are normally included in a standard monitoring and evaluation plan for decentralization, studies to evaluate the impact of decentralization on health status are not *routinely* undertaken for national or local routine monitoring and evaluation.

Figures 5 and 6 of the conceptual framework focus in on key variables in each category – inputs, processes, outputs, and outcomes – that might be considered at either national (Figure 5) or local level (6) when conducting monitoring and evaluation of decentralization. Each figure illustrates a range of possible variables for study under each of the functional areas: legal/political, fiscal, and organizational and their relationship to outputs and outcomes of decentralization. Since decentralization is expected to result in changes in roles, functions, and resource availability in each level of the health system, monitoring and evaluation plans are likely to track different variables at each level and also consider the influence of changes in one level on performance at another level. The variables presented in these figures are by no means exhaustive, as the changes that are prescribed under decentralization can take many forms. Each figure details inputs, processes, outputs, and outcomes, suggesting in some but not all circumstances a linear relationship between them.

Figure 5. National Level

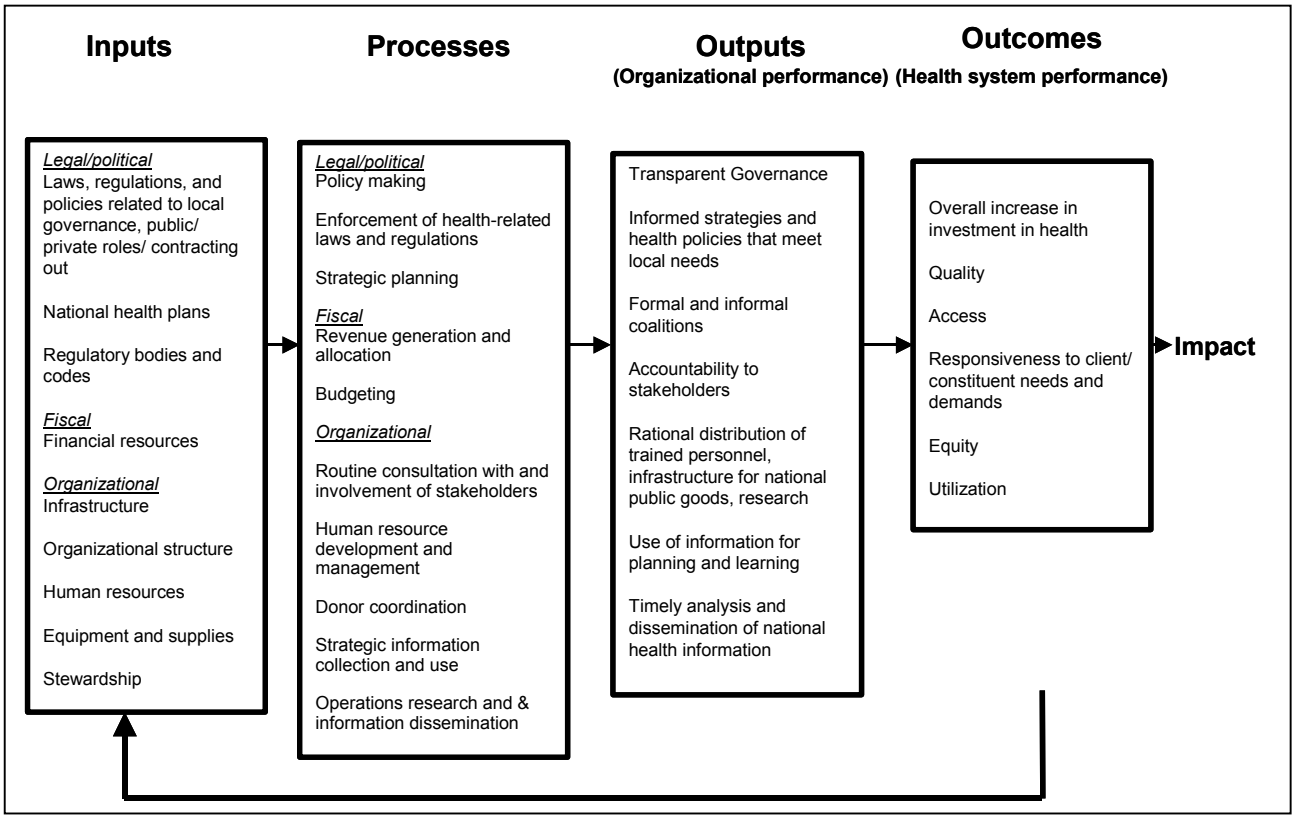
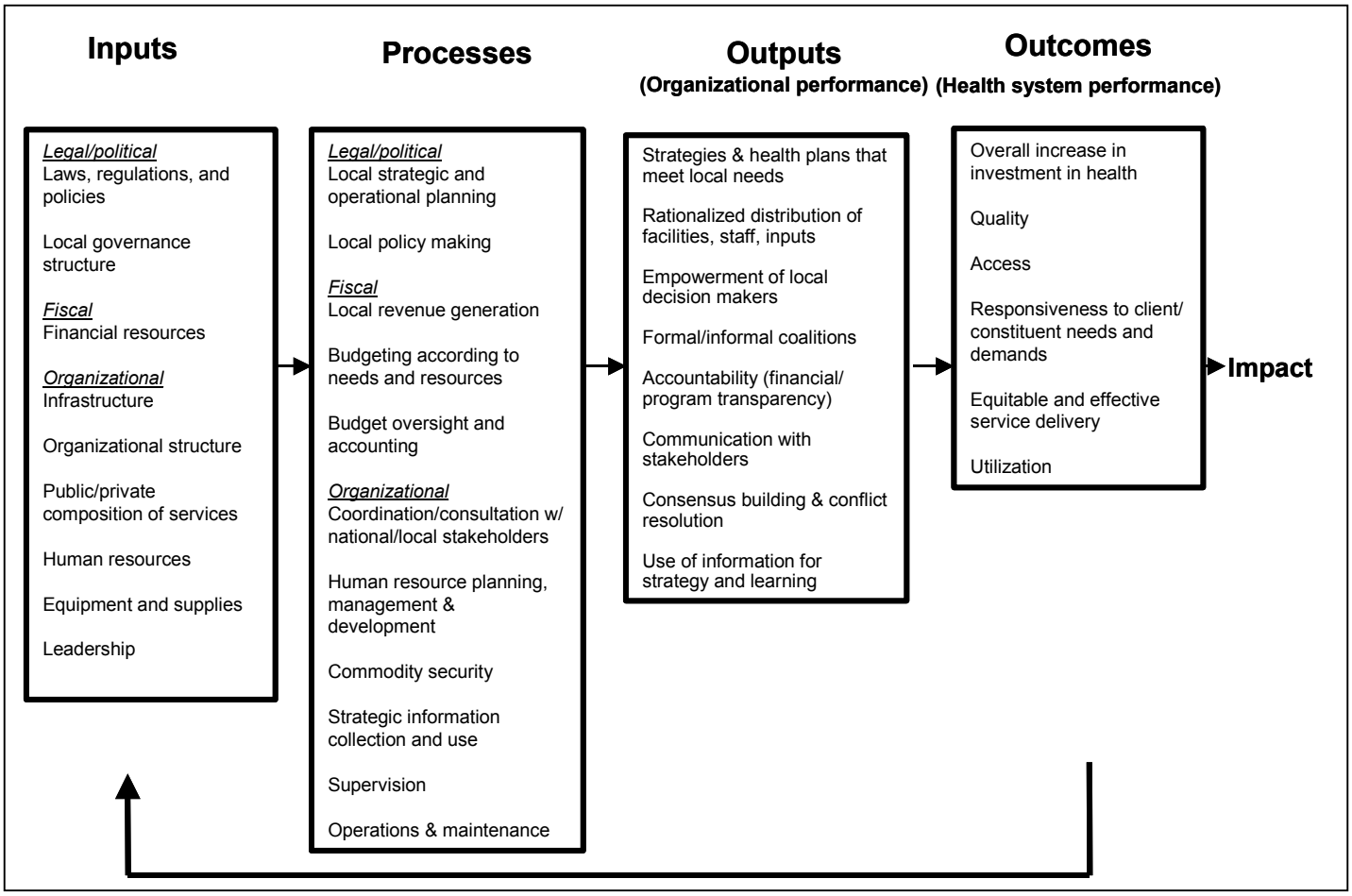


Figure 6. Local Level



4. Indicators of Decentralization

This chapter describes specific indicators in a few key areas that are likely to be essential for monitoring decentralization's progress and for evaluating its impact. A more complete set of general indicators – or areas where indicators should be developed to fit country contexts – based on whether they are inputs, processes, or outputs and based on their nature as changes in authority, accountability, capacity or information is presented in Annex D. Data sources for indicators are summarized in Annex E. For each of the functional areas, indicators are restricted to inputs, processes and outputs. Outcome and impact indicators reflect the combined influence of the political/legal, fiscal, and organizational changes in the health system.

Box 2. Qualities of Good Indicators

Choosing indicators that adequately measure performance and outcomes is vital to successful monitoring and evaluation. The process of choosing indicators is facilitated by having concrete objectives, e.g., increasing community participation in health sector decision making, improving accountability for clinic performance and supplies, or improving health care seeking behavior among vulnerable groups. Some of the requisite qualities of good indicators include the following:

Valid: Indicators should measure the concept, condition, or event they are intended to measure.

Reliable: Indicators should produce consistent results in repeated measurements of the same condition or event.

Specific: Indicators should measure only the condition or event they are intended to measure.

Sensitive: Indicators should reflect changes in the state of the condition or event under observation.

Operational: It should be possible to measure or quantify indicators with developed and tested definitions and reference standards.

Affordable: The costs of measuring indicators should be reasonable.

Feasible: It should be possible to carry out the proposed data collection.

Sources: Rehle and Hassig 2001; Adamchak et al. 2000; Leighton and Knowles 1997

4.1 Political/Legal

Key to the monitoring and evaluation of decentralization processes is the collection of information on changes in the political, legal, and institutional frameworks in which the process is set. This requires collecting information on the type of political decentralization; on enactment and enforcement of legislation and procedures that define new institutions, divide responsibilities, and hold stakeholders legally accountable; and on the policy, planning, and regulatory bodies and processes.

Few quantitative indicators are available for these political, institutional and legal factors, as much of the requisite information focuses on non-quantifiable issues – such as which level of government has responsibility for which function – or on the presence of key inputs – such as the

existence of government documents outlining the responsibilities of the different levels of government. Many indicators are dichotomous "yes/no" indicators.

Referring to Annex E, key input indicators would include measures documenting the existence of laws, regulations, and policies related to local governance, public/private roles, and contracting out. Key outputs, to be more fully defined by countries themselves, would include:

- Measures of transparent, accountable, and representative governance
- Informed policies that address health sector priorities and allow government to carry out its stewardship role
- National and local health planning based on national, regional, and local priorities
- Well-regulated public and private sectors
- Public and private providers who perform according to known and verifiable standards

Data collection is likely to involve qualitative methods: key informant interviews, focus group discussions, document reviews, identification of stakeholders and short quantitative surveys (Box 3).

Box 3. Key Informant Interviews

Key informant interviews can be used to provide background information on the decentralization process and to identify potential problems. This information can then be used to assess perceptions about the decentralization process, what its goals are, what its strengths and limitations are likely to be, and what changes have been implemented. Subjects for key interviews could include local leaders, central government health officials, local health officials such as district medical officers or members of district health teams, or local religious leaders. Some of the key information that is collected in these interviews can include:

- Date of beginning of decentralization process
- Specific responsibilities of local government
- Identification of sources of funding, flexibility with funding and process used for selection of priorities
- Identification of priority funding areas
- Whether or not specific health areas (resources, personnel, outputs, etc. have improved, worsened,or stayed the same under decentralization
- Identification of major strengths and weaknesses of decentralization

Because sizes in the questionnaires can be quite small – in a study in Tanzania only 81 district leaders were interviewed (Hutchinson 2002) – open-ended questions can often be used to elicit greater information from respondents. Suggested questions could be:

- What process do you used when assigning budget priorities for various health services?
- How has the budget-making process changed as a result of decentralization? How could it be improved?
- What are the major impediments to implementation of activities?
- What are the positive/negative impacts of decentralization?
- What changes would you like to see in your (area) with respect to decentralization?

In Uganda in 1998 (Hutchinson 1999), district medical officers and members of district health management teams responded to questionnaires intended to assess the extent of decentralization, its strengths and weaknesses, and its major changes to the health system. District medical officers cited lack of trained personnel as the major problem for implementing activities. Other problems cited were conflicts with local politicians over priorities and hiring practices and lack of staff advancement possibilities. The strengths of the decentralization process reflected the objectives of the process: greater community participation; planning more according to local needs; and greater availability of resources.

4.2 Fiscal

The financing situation in many developing countries is frequently characterized by inadequate resources for health, poor local revenue-generating capacity and high rates of tax evasion, unpredictable and irregular transfers of funds from the central government, poor accountability for financial resources, and expenditure patterns that are neither equitable nor likely to maximize the health improvements of the population.

Indicators examining fiscal decentralization in a health sector focus on the level of resources for health across jurisdictions, the level of autonomy experienced by local planners, and how planners use their discretionary power to meet local needs. A key question for evaluators is whether decentralization increases or decreases the overall resources going to health activities at the local level and how those resources move among the different actors within the health sector. Further, within the available resource envelope, evaluators need to assess *allocative efficiency* – the extent to which decentralized governments allocate resources across programs and activities to achieve the maximum gains in health. These aspects of resources and expenditure responsibilities are categorized as: (1) resource generation, (2) intergovernmental transfers, and (3) budgeting and expenditure management.

4.2.1 Resource Generation and Resource Availability

These indicators are specifically intended to measure how public sector financial resources for health – the amount that is spent by governments in providing health services – change over time as a result of decentralization. The main purposes of such indicators are: (1) to examine the allocation of resources *to* the health sector and (2) to examine the overall level of resources available in the health sector and their sources.

While decentralization is usually intended to improve public sector service delivery, there is no inherent assurance under a decentralized system that local planners will accord health the same priority as central planners. In fact, local planners may find that the health sector is lower priority than central government planners would, particularly with competing needs such as roads, electricity, or agricultural assistance. Further, if responsibilities are devolved to local governments without ensuring that there are sufficient financial resources to undertake those activities, it is possible that overall health expenditures could decrease as a result.

In addition to determining the overall resource envelope, one main purpose of the indicators below is to determine the distribution of resources across different jurisdictions. Specifically, it is important to determine if decentralization leads to greater vertical equity – with gaps in health expenditures between rich and poor jurisdictions narrowing – or whether decentralization exacerbates existing socioeconomic differentials.

Health expenditures are often very difficult to collect. The 1987 World Bank report *Financing Health Services in Developing Countries* was able to report health expenditures for only 49 developing countries, culled from unpublished research and consultancy reports (World Bank 1987; Berman 1997). The 1993 *World Development Report* reported expenditures for 127 countries (Berman 1997; Murray, Govindaraj, and Musgrove 1994).

These efforts have been expanded in recent years to collect more extensive expenditure data in developing countries, particularly Africa (World Bank 1993; Peters et al. 1999). Finding local government expenditure data, particularly isolated by sector, is an even more difficult task. Often the

process of decentralization itself involves establishing financial management systems and training local government officials in tracking expenditure flows. Local Health Accounts, a subnational version of National Health Accounts, are one form of analysis of local government expenditures.

Key questions:

- What is the overall level of resources for health across different regions/local governments? Are they equitably distributed across regions/jurisdictions?
- What proportion of resources comes from the various funding sources (national government, local government, NGOs, insurers, autonomous institutions, private sector, private individuals) in the health sector?
- Do local governments have the power to tax, set fees, and raise own revenue?
- What is the absolute quantity of transfers (financial and in-kind) from the various sources of funds to local governments?

Indicators

- *Total health expenditure (and share of total) by central government*
- *Total health expenditure (and share of total) by local government (municipal, state, provincial, regional)*
- *Total health expenditure (and share of total) by private/NGO providers*
- *Total health expenditure (and share of total) by households and individuals*

Box 4. Analyzing Expenditures: National and Local Health Accounts

National Health Accounts (NHA) standardizes health expenditure information and is a framework through which all national health expenditures, public and private, can be tracked from source to function (Berman 1997). This information provides health care decision makers with the opportunity to understand, assess, and compare patterns of resource utilization and allocation as well as to evaluate the impact of health sector reform. Comparisons also can be made within the health system, over time, and between countries. Alone, results from NHA can be used throughout the health policy process to identify problems, to formulate strategies, and to measure and monitor trends in expenditures. NHA can be combined with other indicators such as health facility surveys to measure overall health system effectiveness, efficiency, and equity. For NHA to be an effective national policy-making tool, data must be accurate, complete, and consistent. This requires financial transparency among private and public agencies and investment in data tracking and reporting systems, accounting systems, and other monitoring tools such as household surveys.

Local Health Accounts (LHA) are similar in goal to National Health Accounts. However, their intent is collection of local revenue sources and flows. As in NHA, LHA shows total expenditures by categories such as personal health care, public health care, and other. This methodology has been utilized in the Philippines to track recent devolution processes. Also like NHA, LHA provide data on financial inputs and allow for identification of financing gaps (Schwartz 1998).

4.2.2 Intergovernmental Transfers

In most developing countries, locally generated revenue is insufficient to cover the full costs of providing health services. As a result, local governments generally rely upon transfers from the central government and from donors. Many different types of transfers are available, varying in the restrictions – and therefore autonomy – placed on local governments by the central government and donors. Often these funds are earmarked for specific activities, such as salaries of health personnel, which local governments on their own might be unable to afford.

The assignment of revenue responsibilities to subnational governments should be guided by two key concepts: (1) providing resources in line with responsibilities and (2) implementing a hard budget constraint. The general principle about revenue assignment is that "financing should follow function." This has implications for the types of revenues that are used. Transfers to local governments for fulfilling functions on behalf of the central government should be earmarked and commensurate with the cost of the activity. Block grants, however, have more administrative simplicity, but increase the risk that funds will not be used for their intended purpose. Hard budget constraints invoke greater fiscal discipline on local governments (Shah 1999).

The mechanism used to transfer funds from the central government to lower levels of government has implications for the amount of autonomy and flexibility that local governments have on spending decisions, and the degree of control that the central government has to ensure that local governments fulfill national health priorities. Grants and transfers can be either conditional or unconditional and matching or nonmatching.

Conditional grants require that transferred funds be spent on particular items or activities and can be either matching or nonmatching. Conditional grants ensure that at least a minimum amount is spent on items or activities that the central government considers to be a priority. However, because funds are fungible, conditional grants may simply displace local funding that would already have gone for the same activity. Uganda, for example, implemented a primary health care conditional grant, requiring that funds be spent on primary health care, though in reality the definition of primary health care has been rather broad (Hutchinson 1999, Jeppson 2001). Matching grants require that local governments contribute in whole or in part the amount provided by the central government. Matching grants provide the greatest assurance that expenditures on certain priorities will be maintained under decentralization, but may be considered more restrictive to local governments. Matching grants also provide local jurisdictions with incentives to increase funding for activities with interjurisdictional spillovers, activities with positive benefits for jurisdictions outside of the one actually incurring the expenses. In health, there may be considerable positive externalities across jurisdictions (Shah 1999).

Key questions:

- Who has responsibility for financing specific health activities?
- Are transfers simple, transparent, and consistent with their objectives (Shah 1998)? Do they contain measurable indicators and conditions for continued eligibility? Is there a clear rule for determining allocations to different local governments?
- What proportion of each level of government's resources come from conditional grants, equalization grants, matching grants, block grants, general revenue, and tax revenue?
- How are budgets determined and who provides inputs to the setting of those budgets?

- Do local governments have hard budget constraints? Are there mechanisms during a fiscal year for local governments to receive supplemental funds from the central government or to borrow in financial markets?

- What systems are in place to manage expenditures and what accounting practices are used? How often are audits conducted? (Budgeting, auditing, and accounting)

Key indicators:

- *Pct. of local revenue from categorical grants, matching/equalization grants, block grants, general revenue, and tax revenue*

- *Proportion of local budget in in-kind transfers (drugs, supplies)*

- *Existence of local ability to tax, set fees, and raise own revenue*

- *Existence of financial management systems, systems of accountancy, and regular auditing*

4.2.3 Budgeting and Expenditure Management

Optimal resource allocation, or **allocative efficiency**, from a social point of view consists of several steps. First, local governments must examine their epidemiological profile and disease burden to identify the priority health areas. Second, they should identify a set of cost-effective interventions (with particular attention played to those interventions addressing significant market failures or with substantial equity concerns). Third, in communication with the central government, responsibility for provision of interventions should be apportioned between the different levels of government into those that are the exclusive domain of the central government (e.g., national health education campaigns), those that the local governments provide as agents of the central government (e.g., expanded program on immunization) and those that reflect local preferences for health services. Finally, local governments should determine the level of resources that they have available for health activities and prioritize among those interventions based on assessments of cost-effectiveness and local responsibility.

Key questions:

- To what types of activities (hospitals, health clinics, public health activities) do local governments allocate their resources? How important are vertical programs? Is there a defined essential service package of primary, secondary and tertiary care?

- How important is the private sector in the provision of public and quasi-public goods? Are local governments spending scarce resources on activities that the private sector is already providing, thereby either duplicating private sector efforts or displacing those resources?

- Is budgeting bottom-up or top-down? Is it input/supply- or output/demand-driven?

- Is there competition between public and NGOs for public funds? (Shah 1999)

- What is the allocation of expenditures between different inputs (e.g., personnel; drugs, supplies and equipment; operations and maintenance; infrastructure and capital expenditures)?

Indicators:

- *Existence of expenditure management programs, double-entry bookkeeping*
- *Existence of bottom-up or top-down budget planning*
- *Per capita allocations to private (curative) care*
- *Per capita allocations to public (primary health care)*
- *Local government budget share for private (curative) care*
- *Local government budget share for public goods (primary health care)*
- *Existence of a clearly defined set of essential health services to be provided by local government*
- *Pct. of drugs, salaries, operations and maintenance, capital expenditure in total local government health expenditures, by level of care*

Several types of data collection tools have been used to determine overall resource flows in developing countries. Some of these are Public Expenditure Reviews, National Health Accounts, and, more recently, Local Health Accounts (see Box 4).

4.3 Organizational

This section provides indicators for measuring and evaluating changes in authority, accountability, and capacity for organizational inputs, processes, and outputs. Key areas of focus include human resources; training and capacity building; drugs, supplies, and equipment; technical assistance; operations and maintenance; service delivery; and community involvement. Numerous documents provide general guidelines for adequately provisioned health clinics (MEASURE *Evaluation* 2001; Angeles et al. 1999; Bennett and Modisaotsile 1991), as well as for district health services (World Bank 1993; Cassels and Janovsky 1995).

4.3.1 Human Resources & Training and Capacity Building

A key responsibility in the health sector is the hiring and firing of health care personnel. Devolving decision making about employment to the local level accelerates the processes of hiring, firing, rewarding, and disciplining health workers, allowing for employment of workers who are most productive and best able to adhere to standards of performance. Further, health workers who are accountable to a remotely located central ministry of health may not have the same performance incentives as those who are directly supervised, monitored, and rewarded by local health officials. Devolving decision making about personnel also allows for a more rational deployment of health staff to areas and activities where they are most needed (Kolehmainen-Aitken 1998).

Human capacity is measurable through such indicators as the numbers of personnel trained in specific areas (treatment guidelines, management, accounting, etc.) and the proficiency of personnel in fulfilling responsibilities after training programs. Specific indicators might be, for example, the presence of training materials and a curriculum for training (input), the number of training sessions

conducted and the percent of training courses where training methodology is appropriate for skills transfer (process), the number of staff trained (output), and the percent of trainees with knowledge in a skill area meeting national standards (outcome) (LaFond and Brown 2003).

Key questions:

- If health officials are not political appointees or elected officials, how do they acquire their jobs?
- Who hires, fires, promotes staff, and determines bonuses? What criteria are used for hiring, rewarding, and sanctioning health workers?
- Have civil service received training in management (including financial management)?
- Are salaries similar across local and national levels? Are salaries paid on time?
- What are the possibilities for career advancement for locally hired health officials and members of the civil service?
- Are staff posts determined by a rational human resources management plan taking into account necessary responsibilities and skills at different levels of service provision?
- What proportions of staff posts are filled (by region)?
- Are workers paid on a contract basis, with performance monitoring indicators and bonuses for good service, or salaried without annual review?
- What proportion of workers has received training in key skills (management, clinic diagnosis, family planning, HIV/AIDS education)?
- Do health workers adequately perform their assigned tasks according to measurable national and local standards?

Key indicators:

- *What is the appointment/hiring process for local health officials?*
- *Level of government determining salaries, hiring and firing of civil servants*
- *Proportion of civil service receiving management training*
- *Average salary by grade, level, and region*
- *Pct. of staff receiving training in key skills areas and having up-to-date skills*
- *Pct. of health workers adequately performing assigned tasks relative to measurable national standards of clinic and diagnostic performance*
- *Salaries paid on time*
- *Proportion of clinic/hospital staff posts that are filled*

- *Share of local government expenditures on salaries, benefits, training, supervision*

4.3.2 Drugs, Supplies, and Equipment

A key concern under decentralized health systems is whether decentralization improves the rationale allocation of resources for key recurrent inputs based on local needs and whether decentralization improves accountability for those inputs. Indicators of key inputs such as drugs, supplies, and equipment focus on whether or not health facilities are in possession of the inputs in adequate quantities, whether the inputs are in working order or not expired, whether local governments have autonomy to decide upon quantities of drugs, supplies, and equipment that are ordered, whether local governments are constrained to purchase inputs from a central source (national medical stores) versus private alternatives, and whether mechanisms are in place to ensure accountability for the inputs (at the district level, health unit level, etc.). Another consideration is whether or not sufficient attention is paid to operations and maintenance for supplies and equipment. These include items such as fuel for vehicles, budgets for routine maintenance and repair of equipment and buildings, stationery, groundskeeping, security, and, increasingly, maintenance of computer and information technology systems.

Indicators:

- *Pct. of facilities having essential drugs in-stock and non-expired (e.g., antibiotics, anti-helmintics, contraceptive methods)*
- *Pct. of facilities having key supplies (e.g gloves, syringes, bandages).*
- *Pct. of facilities with acceptable storage facilities meeting minimal standards of protection from theft, ventilation, temperature, and humidity*
- *Pct. of facilities with key equipment in working order (e.g., obstetric equipment, X-ray machines, equipment for sterilization)*
- *Pct. of facilities experiencing stockouts; mean number of stockouts per month*
- *Pct. of key personnel trained in drugs, supplies, and equipment stock management*
- *Composite indicator for commodities and logistics*
- *Share of local government expenditures on drugs, supplies, and equipment*
- *Pct. of facilities in good/excellent condition*
- *Pct. of facilities having male/female waiting rooms, sheltered waiting rooms*
- *Pct. of facilities with safe water, electricity*
- *Pct. of facilities experiencing blackouts of electricity in last 30 days/average number of blackouts*
- *Pct. of facilities/subdistricts/districts with transport for outreaches, emergencies*

- *Share of local government expenditures on infrastructure and capital works*
- *Share of local government expenditures on operations and maintenance*

Box 5. Facility Surveys

Depending on the survey objective, health facility surveys provide an understanding of the interaction between health facilities and health-seeking behavior and outcomes of households. Their principal objective is to provide information on the supply side of the health care system, but may also include important information on the connections between providers and the relationship between government and providers (MEASURE *Evaluation* 2001; Lindelow and Wagstaff 2001).

Staffing surveys can collect information on not only the number of staff in different categories, but as well their training, education, qualifications, salaries, use of time, interpersonal skills and terms of employment (MEASURE *Evaluation* 2001; Lindelow and Wagstaff 2001). This information can then be used in policy decisions regarding resource allocation. Unlike the routine collection of administrative data, measurement of health care provider capacity output data from surveys provides information to analyze costs and the relationship between inputs and outputs. Quality of care can be assessed through analyzing the impact of structural dimensions of health care, inputs, on the outcome of health care, outputs. Through continuous assessment and post-evaluation, health facility surveys have served as a tool to monitor and evaluate the changes occurring as a result of decentralization (MEASURE *Evaluation* 2001; Lindelow and Wagstaff 2001).

Data on inputs can be gained for health facility surveys through interviews, record reviews, direct observation, clinical vignettes, and/or consultation observation. At all levels there may be data that is unavailable or imprecise. Data collected through interviews, clinical vignettes, or direct observation may be subject to reporting and/or social desirability bias (Lindelow and Wagstaff 2001). Due to the heterogeneity of health care providers, health facilities, population served and individual patients, comparability of outputs and quality at all levels is often problematic through health facility surveys.

Important websites: http://www.cpc.unc.edu/measure/publications/pdf/ms-01-02.pdf

4.4 Outcomes

Our conceptual framework outlines several key goals of decentralization. These fall largely under the categories of efficiency, quality, equity, accessibility, utilization, responsiveness, and participation.

4.4.1 Technical and Economic Efficiency

Economic measures of efficiency often focus on three types of efficiency – technical, economic, and allocative. Allocative efficiency was discussed under expenditure management and resource allocation. **Technical efficiency** refers to the ability of governments or health care providers to transform resources into health services in the most productive manner, combining inputs so as to achieve the maximal output without wastage or over-use of inputs. This means, for example, that there are appropriate levels of staffing, regular supplies of drugs and supplies, and equipment that are medically necessary for a health facility's case mix or for public health services aimed at a local population's epidemiological profile. **Economic efficiency** refers not only to operating in the most productive manner but doing so with the lowest cost inputs, e.g., generic drugs in place of expensive name-brand drugs, and medical assistants in place of doctors for basic ailments. In theory, decentralization can improve technical efficiency if it removes excess administrative levels, if it leads

to innovation and discovery of new techniques for health service delivery, or if greater oversight and accountability of health workers and planners decrease wastage of resources.

Measures of costs are essential for a variety of reasons. Foremost is the need to determine the resource requirements for providing key health services. It is not uncommon for health planners to underestimate the recurrent implications of capital costs, thereby leaving a health infrastructures with buildings but shortages of drugs, supplies, or staff or inoperable equipment. Not recognizing the importance of allocating funds for operations and maintenance has often left equipment broken and in disrepair, unable to be used by idle staff. Another reason is to determine where and for which health services economies of scale exist which will point to whether or not certain activities are less costly if they remain centralized.

Tracking cost information over time and across different types of providers allows planners to monitor changes in efficiency. Cost data are also essential for many different types of economic analysis, such as cost-effectiveness analysis, cost-utility analysis, and cost-benefit analysis. These types of analyses allow measures of costs to be linked to their potential and realized impacts on health outcomes.

Key questions:

- How well does the public sector provide its services? Are costs lower for local government provision of public health goods or for central government provision?
- At what level is it most appropriate to provide public, quasi-public, and private goods, i.e., what are the minimum efficient scales for production of the goods and services provided by the government?
- Is the public sector more or less efficient (i.e., does it provide greater output for a given level of inputs) than the private sector in providing goods and services that they both provide?

Indicators:

- *Average costs of providing primary health care services, basic curative care, secondary and tertiary care*
- *Average cost per outpatient visit, average cost per bed-day (inpatient visit) by level (referral hospital, district hospital, health center)*
- *Average length of stay*
- *Hospital bed occupancy rate*
- *Doctors/nurses per hospital bed*
- *Data sources: facility surveys, health information systems*

Box 6. Analyzing Efficiency and Costs

Cost analyses serve several purposes. They allow policymakers and planners to determine the overall level of resources necessary for operating a functioning health system, identifying gaps between a properly functioning system and the observed system. Cost analyses can also allow planners to prioritize among different activities, modes of service delivery, or organizational structures. Planners can use cost information to determine appropriate remuneration for services that are contracted out or for calculating expected costs of risk-pooling arrangements. Analyses of costs additionally serve as measures of inputs in analyses of effectiveness such as cost-benefit analysis or cost-effectiveness analysis.

For evaluating the performance of a decentralized health system, planners and evaluators likely will want to know the costs of delivering a package of essential health interventions. Key components to be costed in a decentralized health system could include: (1) a network of entry-level primary health care facilities (health centers, dispensaries, or health posts), (2) a first-line referral facility such as a districthHospital, (3) a management and organizational structure such as a district health management team, and (4) incremental interventions such as water and sanitation services, health and nutrition education programs, and family planning outreaches (World Bank 1993).

Cost analyses generally differentiate between recurrent and capital costs. Recurrent costs include such items as salaries and benefits for personnel, materials and supplies, operations and maintenance (e.g., fuel, electricity, groundskeeping, security, maintenance of buildings, equipment, and vehicles), and in-service training. Generally, costs of items consumed or replaced within a year are considered to be recurrent costs. Capital costs involve the costs of items used for longer than a year, such as the construction of a building or purchase of equipment or vehicles. Capital costs are amortized over their expected lifetime of the item.

Common problems in cost analyses include the omission or underestimation of relevant costs (particularly recurrent costs), costs of inputs that do not reflect their true social value, and allocation of joint costs when inputs are used in multiple activities. Accounting for all relevant costs requires meticulous attention to documenting relevant inputs. In many countries, the true social value of inputs – such as drugs and supplies from international sources – are distorted by fixed exchange rates or price controls. Economists generally rely upon estimates of "shadow prices" to adjust these prices to reflect the true costs of the inputs. Finally, many inputs – such as overhead at hospitals or district management structures – support multiple activities. Some fraction of these costs must be allocated to service delivery outputs. Common rules for allocating these joint costs include the amount of time devoted to different activities or the proportion of outpatients for specific conditions (e.g., immunization, children's curative care, maternity services) in total outpatients.

Cost analyses generally rely upon information from health facilities, collected through facility surveys or management information systems. Data should be collected from all types of health care providers in order to make comparisons. For material inputs such as drugs, the focus of data collection can be on quantity, quality, condition or state of repair, cost of acquisition, and/or criteria for allocation. Through analyzing inputs and costs, health facility surveys provide a "detailed picture of resource availability, adequacy, and costs at facility level" (Lindelow and Wagstaff 2001). This information along with quality and output data can be used to assess health care quality, infrastructure, utilization and availability.

Useful sources of information for cost analyses:

Creese, A. and D. Parker. 1994. "Cost analysis of primary health care: a training manual for programme managers." Geneva: World Health Organization.

World Bank. 1993. "A Framework and Indicative Cost Analysis for Better Health in Africa." Technical Resource Working Paper No. 8. Human Resources and Poverty Division, Africa Technical Department, World Bank.

4.4.2 Quality

Measures of quality can include both input indicators and measures of service outputs. In this section quality is treated as an output reflecting the combined capacities of essential inputs. Many of the key indicators of service delivery quality have been discussed in the section on inputs.

Key questions:

- How well does the public sector perform in ensuring adequate levels of staffing, drugs, commodities, supplies, and functioning equipment? Is performance better or worse under decentralization?
- Who sets norms and standards for care? What regulations and mechanisms are in place for enforcing standards and norms? Are there systems for ensuring that norms and standards are met?
- Do the (local) health system and health care facilities have documented policies and materials on:
  - standard treatment guidelines with exemptions for poor and vulnerable groups
  - user fees and user fee revenue
  - facility management
  - national facility standards (structural, input, etc.)
  - others?
- Has the quality of services at government facilities improved as a result of decentralization?
- Are patients treated according to standard treatment guidelines and national norms of medical care?
- Are systems in place for proper referral of cases to higher levels as necessary and back-referral to lower levels for follow-up care?
- Are regulatory, supervisory, and enforcement mechanisms in place to ensure adherence to minimum facility standards, staff performance, and adherence to guidelines?
- Do local governments have mechanisms for contracting for health and non-health services among different public, private, and nongovernmental organizations?

Indicators:

- *Pct. of facilities with written guidelines for standard treatments, pricing policies and exemption mechanisms, facility management, etc.*
- *Pct. of service providers following standard treatment guidelines; pct.. of patients treated according to guidelines*
- *Existence of a national or subnational quality assurance program with procedures, standards, and enforcement mechanisms for ensuring minimal levels of quality and improvement*
- *Pct. of patients following proper procedures for referral with follow-up instructions provided from higher levels to lower levels*

4.4.3 Equity and Accessibility

Two forms of equity can be enhanced – or worsened – by decentralization. The first is horizontal equity, or the capacity for local governments to deliver equivalent levels of services to constituents with similar needs. The second is vertical equity, or the ability and willingness for local governments to deliver different levels of services for constituents with different needs (World Bank 1999).

Decentralization can improve or worsen equity depending upon several key factors: the capacity of the central government to redistribute income from wealthier to poorer areas; the increased ability of local governments to identify the poor and non-poor, the willingness of the local government to allocate funds to health services that are pro-poor, and the capacity for the poor to advocate on their behalf through political or other processes. By being closer to local populations, local governments, particularly ones with significant community involvement, may be better able to target health services to subregions with high concentrations of the poor. They may also be more knowledgeable about health conditions afflicting the poor of the region. Alternatively, to the extent that decentralization gives voice to the poor, the poor may be able to advocate on their own behalf to ensure that health services meet their needs.

Measures of equity look at the level of per capita health spending by regions of different levels of wealth. These aggregate measures of wealth, however, may mask disparities in income within regions.

At the household level, measures of equity generally focus on spending by poor households relative to non-poor households, the share of medical and health expenditures in total household expenditures, and household expenditures on different types of care (e.g., curative vs. preventive; public vs. private vs. traditional). There is no clear ideal share of health expenditures in total monthly household expenditures. Clearly, if the share of health spending in total household spending is high, a household might risk impoverishment, be forced to borrow or sell off assets to pay for care, or forego care.

Benefit-incidence analysis, discussed more fully below, links information on expenditures by different financers of care (public and private) with information on utilization patterns by different socioeconomic groups.

Key questions:

- What are the levels of per capita spending (by the public sector, households, insurers, private and NGO providers) in rich and poor local governments?
- What is the economic burden faced by the poor relative to the non-poor? Do financial and physical barriers to health services prevent the poor and other vulnerable groups from using health services?

Indicators:

- *Mean per capita equalization grant by region, district, local government*
- *Mean public sector per capita expenditure by region, district, local government*
- *Mean monthly household health expenditure (on medical care, preventive care) by socioeconomic quintile/decile*

- *Share of monthly household health expenditures in total household expenditures*
- *Prevalence of illness, adverse health condition by socioeconomic quintile/decile*
- *Use of essential health services by socioeconomic quintile/decile*
- *Proportion of the poor exempted from paying fees for care, drugs, etc.*
- *Proportion of poorest quintile/quartile/decile covered by insurance/risk sharing programs/community based health insurance*

Box 7. Assessing Equity by Linking Public Expenditures with Household Surveys: Benefit-Incidence Analysis

Benefit-incidence analysis and marginal benefit incidence analysis are used to examine the distributional implications of public sector resource allocation decisions (Selden and Wasylenko 1992). The methodology links information on public expenditures on different programs or activities (hospitals, primary health care) with micro data from household surveys on utilization patterns of health services.

Benefit incidence analysis might indicate, for example, that households in the poorest 20 percent of the population constitute 30 percent of the users of primary health care clinics, while households in the wealthiest 20 percent of the population constitute only 10 percent of primary health care clinics. Such a finding would indicate that public expenditures on primary health care are progressive, providing greater subsidies to the poor than to the non-poor. This has been the case in studies in Costa Rica (Sauma and Trejos 1990) and Malaysia (Hammer, Nabi, and Cerone 1992). If the share of users were the same across all quintiles – each 20 percent of the population constituted 20 percent of users of primary health care – then the distribution of public expenditures would be perfectly equal (though perhaps not necessarily equitable if certain quintiles had greater health needs). If, however, the share of primary health care users were highest among the wealthiest 20 percent of the population, then the distribution of public expenditures on primary health care would be regressive, favoring the non-poor over the poor. Studies in Indonesia have found this to be the case, largely because of the bias towards urban hospital-based care (van de Walle 1992).

While a powerful analytical tool, benefit-incidence analysis has seldom been used to evaluate equity and its relationship with decentralized health sectors, largely because of the data requirements and large sample sizes needed.

Sources:

Selden, T.M. and M.J. Wasylenko. 1992. “Benefit Incidence Analysis in Developing Countries.” Policy Research Working Paper No. 1015. Washington, DC: World Bank.

van de Walle, D. 1996. “Assessing the Welfare Impacts of Public Spending.” Policy Research Working Paper No. 1670. Washington, DC: World Bank.

4.5 Access

Measures of physical accessibility focus on the time and distance that individuals must travel to use health services. Decentralization may improve physical accessibility, particularly in jurisdictions where the majority of the population lives in rural areas, if local planners choose to shift resources from more costly urban-based secondary or tertiary care to less costly rural primary health care. Decentralization can also improve physical accessibility if local planners use their informational advantage on the spatial distribution of their populations to better target health services.

The use of Geographic Information Systems (GIS) provides increasingly more accurate representations of spatial distributions of populations in relation to spatial distributions of health care

facilities. A recent study using GIS information in Bangladesh, for example, found that rural households in the poorest socioeconomic quintile were nearly six kilometers farther, on average, from the closest hospital than rural households in the wealthiest socioeconomic quintile (MEASURE *Evaluation* 2003).

The presumption that all populations should have equal access to health care services ignores, however, the importance of weighing costs relative to benefits and the importance of considering issues of equity. The optimal distribution of clinics will depend upon time price elasticities – the responsiveness of individuals to changes in distance (or time) in increased use of health services – and the costs of building additional clinics (relative to other alternative uses of funds, including alternatives such as outreaches). The optimal distribution of health services will also depend upon unmeasurable subjective factors such as the relative weight that a society places on equity and ensuring that a minimal level of care is available for the poor.

Care should also be taken not to overemphasize the importance of access. While access is clearly a critical factor, other characteristics of health services – such as price and quality – and of individuals – such as levels of education, views towards modern medical care, income, and wealth – may exert greater influence than physical proximity to care. Studies have shown that people will often bypass facilities that are close by in order to access higher quality care (Akin and Hutchinson 1999). Multilevel regression analysis (Box 11, in Section 5) can help to ascertain the relative importance of different individual, cultural, and health services characteristics on the demand for health care.

Key questions:

- How far do (poor and non-poor) households live from the closest health care facility providing essential health services/emergency obstetric care/family planning, etc?
- What are the costs of increasing access relative to other interventions that can improve service utilization and health outcomes?

Indicators:

- *Percent of population (rural, poor) living within X kilometers of a health facility*
- *Pct. of population (rural, poor) living within X kilometers of a facility offering specific services (e.g., obstetric care, a package of essential primary health care services, family planning and immunization outreaches, 24-hour emergency transport)*
- *Pct. of population living within X kilometers of hospital*
- *Population per doctor, nurse clinic, hospital, hospital bed (by geographic area)*

4.5.1 Utilization

Decentralization may improve the quality and availability of public sector health services, but that is not an assurance that the services will be used. The existence of alternatives in the private sector may limit the impact of improved public sector service availability. Further, individuals must value the services sufficiently to be willing to pay in time or money to use the services.

The indicators in this section reflect the use of health services that might be considered to be priority health services in a developing country context. Many are commonly collected using widespread and standardized population-based surveys such as the Demographic and Health Surveys (Box 8). The indicators are intended as examples. Any utilization indicators should be adapted to specific country contexts, but should be measurable and consistent in repeated surveys.

Key questions:

- Does the utilization of basic primary health care services – those with public goods aspects or positive externalities – increase as a result of decentralization?
- Does the utilization of private curative services increase as a result of decentralization?
- Are the poor or other vulnerable groups more or less likely to have access to services under the decentralized system?

Indicators:

- *Proportion of children aged 12-24 months fully immunized*
- *Contraceptive prevalence rate for women aged 15-49*
- *Condom use last sex*
- *Proportion of ill individuals seeking curative care from a modern (public, private, or NGO) health care provider*
- *Client satisfaction with publicly provided services*
- *Knowledge indicators*

Box 8. Household and Community Surveys

In order to collect the level of detailed information required for evaluating decentralization impacts on health behaviors and health outcomes, the most useful data collection tools are random sample surveys of individuals and households. These collect detailed information on individual and household characteristics. They often collect information on the use of basic health services, reproductive health, recent morbidity and mortality, and knowledge, attitudes, and practices regarding common health issues.

Demographic and Health Surveys have been conducted in over 65 low- and middle-income countries around the world. These surveys use standardized questionnaires to collect information on individual and household socioeconomic conditions, fertility, contraceptive use, knowledge of family planning, use of childhood immunization services, prevalence of common childhood ailments and treatment seeking behavior, nutrition, mortality, and reporting of symptoms of sexually transmitted diseases. For many countries, service delivery modules also collect information on the quality and availability of basic primary care services in the areas near the sampled households. When linked, the data from the households and health facilities can provide a useful mechanism for evaluating the relative impact of service availability and quality, as well as individual and household characteristics, on the likelihood that services will be used.

Other common surveys include the Living Standards Measurement Surveys (LSMS), which are often conducted jointly by the World Bank and the statistics departments of individual countries, and the Multiple Indicator Cluster Surveys sponsored by UNICEF. While the LSMS often collect health information from households, the main focus is usually on household spending patterns.

A significant limitation of such surveys is that the sample sizes at the local decentralized level may not be sufficient for compilation of specific indicators. As a result, aggregation of local governments into regions may be required.

Important websites:

http://www.measuredhs.com/

http://www.worldbank.org/lsms/

http://childinfo.org/MICS2/Gj99306k.htm

4.5.2 Community Participation

Community participation is often linked with the sustainability of health reforms. Community participation can be viewed both as an input in the process of health production, by providing a mechanism for information and needs to be channeled to health officials, and as a mechanism to hold those same health officials accountable for performance. Community participation can also be viewed as a health system output, allowing citizens to have voice in their government, as well as a mechanism to promote health reforms and health system goals (World Health Organization 1978). As one researcher notes,

> Participation can be viewed as a means to enhancing health goals in terms of coverage, access, and effective utilization of health care, as well as improved prevention of disease. It is also conceived of as an end in itself, building networks of solidarity and confidence in social groups, building institutional capacity, and empowering people to understand and influence the decisions that affect their lives (Loewenson 2000).

However, the extent of community participation depends upon the existence of institutions and mechanisms that give citizens voice in the decision-making process. Some of these include participation in local health boards, health unit management committees, health budgeting processes, and community outreaches. Without supporting institutions and guidelines, mechanisms for community involvement may simply serve as vehicles for "local capture" by local elites or powerful groups. Two key issues are the extent of devolution of meaningful responsibilities to community participants and the building of capacity at the local level for community participation to have meaningful influence.

> Citizen participation in some form is an essential part of successful decentralization. It is becoming a more common element in developing country political environments – 13,000 units of local government in Latin America are now elected, up from 3,000 in 1973 – but the flow of information is by no means undistorted. Decentralization policies should take informational imperfections into account and attempt to improve the depth and degree of citizen participation in local government action. Local government responsiveness, one of the main rationales for decentralizing, cannot be improved when there are no mechanisms for transferring information between the local government and its constituents (Seddon 1999, p. 18)

Key questions:

- What structures are in place to supervise local health facilities? Health boards? Health unit management committees?
- How are community representatives selected for participation in management committees?
- Do institutions for local representation permit participation by all groups or promote capture by local elites?

Indicators:

- *Existence of local health boards made up of community representatives*
- *Existence of facility management boards made up of community representatives?*
- *Existence of clearly defined process of selection of community representatives on local health boards/facility management boards*
- *Measure of adherence to selection processes*

4.6 Impact: Health Outcomes

This section suggests impact indicators that may be used to monitor changes in the health status of populations in the context of decentralized health systems, i.e., the effectiveness and impact of health programs and decentralization. Such indicators are important for conducting impact evaluations of decentralization programs. Information can be collected on illnesses and epidemiological factors and on individual-level health outcomes from a random sample of populations in decentralized jurisdictions.

The ultimate aim of decentralization, as well as most health reforms in developing countries, is to improve the health and well-being of the population. Measuring changes in the health and well-being of populations requires having detailed data on the health behaviors and health outcomes of those populations. Key indicators of health service outcomes might include infant, child, and adult mortality rates, nutritional status, child health outcomes, immunization rates, prevalence of HIV/AIDS, malaria, etc.

Key questions:

- Are health outcomes better or worse under decentralized systems?
- Are health outcomes for the poor better or worse under decentralized systems?
- Data sources: Epidemiological surveys, patient registers, sentinel sites, household surveys, national censuses: any evaluations that are already in place.

Indicators

- *Prevalence of illness in adults and children*
- *Prevalence of wasting in children under age 5*
- *Prevalence of diarrhea in children under age 5*
- *Total fertility*
- *Prevalence of symptoms of sexually transmitted diseases*

5. Preparing a Monitoring and Evaluation Plan

The above definitions and conceptual framework can be used to develop a stepwise framework for designing and implementing a decentralization monitoring and evaluation plan. The stepwise framework has several key elements, namely: (1) defining the nature, timing,and objectives of the decentralization process, (2) identifying key indicators and developing a data needs assessment plan,(3) developing a research design for impact evaluation,(4) collecting additional (non-routine) data, (5) analyzing data to evaluate the impact of a decentralization policy, and (6) disseminating results to revise policy and improve performance. The stepwise framework borrows from that used in other monitoring and evaluation guides (Bertrand, Magnani, and Rutenberg 1996).

Step 1. Defining the Type, Nature, Timing and Objectives of Decentralization

The initial step in the monitoring and evaluation process is to identify what responsibilities are being decentralized, to whom or to which level or organization, the objectives (e.g., efficiency, equity, quality) of decentralization, the timing, and the supporting mechanisms (new ministries and agencies, laws, organizational structures). This step shapes the entire monitoring and evaluation plan, providing the necessary information to determine what the areas of focus should be. The overall objective of this step is to provide background information on the decentralization process. The focus can be broad, but the clear aim is to collect as much information on the development of the decentralization policy and its objectives.

An important component of this step is in ascertaining the timing and coverage of implementation of the decentralization process: Will decentralization be undertaken in all regions simultaneously or will it be piloted in some regions before others? If so, how are these experimental regions to be chosen? Will it be based on (measurable) differences in capacity, political determination, or financial resources or is it based on random selection?

Another important component is determining what the specific objectives of the decentralization program are. In policy documents, these may be vague – improved community participation, greater citizen voice, more efficient service delivery, more local autonomy. Researchers and evaluators will have to define indicators to measure changes in these components. Comparisons can then be made between how the program is working, how the program should be working, and what progress is being made in achieving decentralization's goals.

This step may involve stakeholder analysis and mapping to identify interest groups and influential groups that will or have been affected by the policy implementation or change. In the health system, these stakeholders often include consumers, community groups, insurers, public and private providers, health system and facility managers, staff at the ministry level, and elected officials. During development of a monitoring and evaluating plan for decentralization, stakeholder analysis should also identify all those who will be expected to implement and monitor changes in the health system. After identification, input from these groups is gained through key informant

interviews; focus groups; consultative, consensus-building meetings; and awareness/health promotion activities. Support and opposition then can be mapped and a strategy can be developed to build consensus, to integrate ideas, and to increase support for the monitoring and evaluation plan among all stakeholders.

This step is also likely to involve reviews of key health sector documents at both the national and local level. This may include the review of clinical statistics, administrative reports including financial, inventory, and personnel records, event logs, correspondence, official reports, and other documents. The documents may also provide a historical context for program and policy development. The data though may be inaccurate, unrepresentative, incomplete, or inaccessible for a variety of reasons.

Box 9. Analyzing the Division of Responsibilities andEextent of Control: The Decision-Space Framework

The decision-space framework seeks to map which responsibilities rest with which level of the public sector and to indicate the level of control that each level has over those responsibilities (Bossert 2000b). It outlines major areas of responsibilities that can be assigned to the local level in five categories and fourteen subcategories (see Appendix Table 6). These include:

Finance and expenditure functions: revenue sources, allocations of expenditures, fees

Service organization functions: hospital autonomy, insurance plans, payment mechanisms, required programs and services, service standards, vertical programs, and supplies and logistics)

Human resources functions: salaries, contracts, civil service

Access functions

Governance functions

Within the five major categories and 14 minor categories, local authorities are evaluated by the degree of control that they have over specific functions – narrow, moderate, or wide. In cases of “narrow” control, central authorities generally retain control over these functions. For “wide” control, local authorities have complete or near complete control.

An application of this methodology in Latin America found considerable variance across countries in the level of flexibility granted to local municipalities for different functions. Chile, Colombia, and Bolivia tended to have wide control over contracting of private services and governance, moderate control over financial allocations, and very narrow control for human resources, service provision, and targeting of priority programs, which remained centrally controlled (Bossert 2000a).

Step 2. Identifying Key Indicators and Developing a Data Needs Assessment Plan

The second step is to identify key indicators that are measurable and to link those with a plan for assessing data availability and data needs. Indicators should be clearly linked to the objectives of the decentralization process, be comparable across time, prioritize information needs, and cover key aspects of the decentralization process. It is important to identify indicators that will allow policymakers to determine whether the decentralization program is progressing as intended or has met its goals. This means that indicators should include detailed information on program inputs, improvements in key processes, intermediate outputs, and, for evaluation purposes, key health outcomes.

This step also involves identifying the resources available for monitoring and evaluation; identifying key personnel and requisite human capacity to undertake monitoring and evaluation activities, data processing, and statistical analyses; and determining the research design for evaluation

of decentralization's progress and impacts. Some of the key personnel may already be carrying out routine program and performance monitoring in the context of management information systems. For other aspects of the analysis, particularly for impact evaluations, specialists may need to be contracted with universities or other academic institutions. Population surveys require significant technical expertise, and are often performed by contracting with local survey firms with input from academic institutions and universities.

Data needs assessment requires linking indicators to existing and routinely collected data and to new sources of data that can be collected through stakeholder analysis, population surveys, or other sources. Annex E outlines some of the key data sources for monitoring and evaluation of decentralization in several key areas. Data are organized into activities that are part of routine information systems and those that involve special data collection or periodic surveys. Routine monitoring systems generally include data on patient flows at government clinics and hospitals, government expenditures through publicly available budget process negotiations, and inventory and stock control procedures. Routine health information systems (Box 10), for example, provide data to local health planners on flows of inputs from the different levels to clinics and within clinics, on patient flows at different levels of care, and on a variety of other areas of performance. Others, such as large population-based household surveys or detailed costing studies, may be conducted only every few years and for purposes other than evaluation of the decentralization process.

Many of the data collection tools are common across the broad categories of indicators described above. Key informant interviews, for example, can potentially collect information on policy outputs and the extent and nature of community participation. Population-based household surveys, for example, provide one of the principal sources of data for measuring improvements in health outcomes, the goal of most health reforms. Facility surveys provide information on both technical inputs and the quality of care.

Some routine information on health system performance may also be collected through community representatives using systems of qualitative data collection. Periodic reports on local clinic performance can identify lapses in adherence to standards and provide an additional accountability mechanism enhancing clinic performance.

Many of the data collection tools for monitoring and evaluation of decentralization are generally available in developing countries, increasingly so in recent years, but are not used specifically for evaluating decentralization. It is the linking of various data sources that provides the strength – and the difficulty – of conducting adequate monitoring and evaluation of decentralization programs. For example, linking data on public sector expenditures from ministries of finance and health with data from household surveys is a relatively recent and uncommon development in evaluation programs. Its occurrence has been primarily in evaluating the benefit-incidence of public sector expenditures. However, such analyses can be extremely useful in knowing the effectiveness of resources in improving health behaviors and health outcomes.

Decentralization programs, like many health sector reforms, affect the health sector at many levels – planning and resource allocation, service availability and quality at health facilities, and ultimately at the individual level. As a result, monitoring and evaluation programs require data collection from many different viewpoints of the health sector.

Box 10. Routine Health Information Systems

Routine health information is defined as "information that is derived at regular intervals of a year or less through mechanisms designed to meet predictable information needs" (Wilson et al. 2001). Sources of data often used in designing a routine health information management system include health service statistics, administrative data, epidemiological and surveillance data, data on community-based health actions, and vital events data. Serving as a key monitoring tool for interaction between the provider and patient at point of contact, this information is a means through which to document health care provision, administration and financing, morbidity, births and deaths, and public health information. Through empowering managers and decision makers at all levels with systematic data and regular information, routine health information systems can support and improve service delivery, disease control, planning and management, and performance monitoring (Wilson et al. 2001; Sapirie 2001). Tracking expenditures, monitoring performance, and determining coverage and service utilization are all components of routine health information systems, all of which can help guide resource allocation and policy decisions. Within communities, these systems promote greater local decision-making power, help identify target populations, and serve as a link between public health workers and the community. Routine health management systems also have been shown to facilitate the process of devolution in Kenya, Zambia, and Baluchistan (Sapirie 2001).

Routine health information systems are often associated with particular problems. First, they may not be introduced or designed by the service providers, but those higher within the health system or international donor agencies. This often leads to indicators defined by outside sources, excessive data reporting and recording by local staff, parallel data collection within facilities and the larger health system, large amounts of collected but unused data, inadequate training on data usage, and unclear reporting requirements (Sapirie 2001).

Routine health information systems may also suffer, like many other sources of data, from poor quality or limited information. These systems generally collect information only on users of health care facilities, omitting information on populations who lack access to treatment and patients treated within the private sector. Demographic data are often under- or misreported. Further, while patient flows may be clearly documented, background information, particularly socioeconomic status, is generally not included.

Routine health information systems may also be quite costly to initiate and maintain. The investment in computers and data processing systems and equipment for routine health information systems have created a new set of problems including high initial and maintenance costs, unavailability of replacement parts, and inadequate local training and communication between users and technical support staff (Sapirie 2001; Wilson et al. 2001).

Important websites: http://www.rhinonet.org

Ideally, a data needs assessment plan for monitoring of decentralization reforms should be developed prior to the initiation of such reforms. This will permit: (1) awareness of data needs and evaluation designs that will allow key questions to be answered and (2) pre- and post-decentralization comparisons. This may not be possible, however, particularly if the decentralization process is imposed upon the health sector. Regardless, hasty decisions regarding evaluation designs should be avoided. Some evaluation tools and data collection can be costly, and plans should prioritize among different types of data collection as well as be explicit about how data will be used.

Step 3. Establishing a Research Design for Impact Evaluation

Monitoring the progress of a decentralization program involves following measurable and consistent indicators over time to determine what improvements, or lack of, are occurring in a decentralized health sector. Impact evaluation, on the other hand, is a more involved process than monitoring – both in the amount of data required and the sophistication of the analyses employed – since it seeks not only to determine what has occurred but also why and how it occurred. For this, researchers must have diverse and abundant information on as many of the possible factors that can

influence an outcome – not just the program itself. A decentralization program, for example, may be implemented simultaneous to numerous other influences on the health sector – rapid economic growth, improved educational systems leading to a more productive work force and more informed consumers, public sector restructuring, or civil service reform.

Research designs for impact evaluations are affected by program coverage – whether the program covers an entire population (full coverage) or just subgroups or subregions of a population (partial coverage). Programs that cover only a segment of a country allow for experimental or quasi-experimental evaluation designs with comparisons between those regions or local governments exposed to a program and those that are not. From an impact evaluation perspective, the gold standard for examining the impact of decentralization would be to randomly assign the units of analysis – regions, local governments, populations – into control groups and experimental groups. For an impact evaluation of decentralization, "treatment" groups would involve local governments to which responsibilities have been devolved, while "control" groups would include local governments to which such responsibilities had not been devolved. With a large enough sample of local governments and a proper randomization procedure, local governments, on average, in decentralized "treatment" groups and non-decentralized "control" groups would ideally be identical in all respects except for being decentralized.

In the absence of randomized selection, **selection bias** may result. If local governments are selected to be decentralized, for example, on the basis of better human or institutional capacity, then the sample of decentralized local governments may be qualitatively and quantitatively different from the sample of non-decentralized local governments in ways that may bias the results of the evaluation. Decentralized jurisdictions may have better outcomes precisely because they have higher human and institutional capacity and not because they are decentralized, though being decentralized will clearly be associated with better outcomes.

In reality, however, such controlled experimental designs are often impossible, either for political reasons or because other priorities outweigh the need for monitoring. It may not be politically feasible to implement a decentralization policy in some regions without implementing it in all regions. Alternatively, if decentralization is implemented in some areas and not others, health planners may prefer to implement the policy in areas with strong institutional capacity first, leaving areas with weaker institutional capacity to be decentralized once capacity has improved. Such selection, while reasonable, may bias poorly designed evaluations.

As an alternative to experimental designs, quasi-experimental designs can be used to make comparisons between decentralized and non-decentralized entities – decentralized governments, semi-autonomous hospitals or community-influenced clinics or locally governed populations. While these lack the advantage of having random assignment of treatment/decentralized and control/non-decentralized groups, statistical controls can be made for observable factors that may explain differences unrelated to the decentralization process. Several design methods fall under the category of quasi-experimental designs: regression-discontinuity designs, matched "constructed" control groups, or more rigorous multivariate regression techniques with statistically equated control groups in which statistical controls – income, level of literacy, ethnic fractionalization, etc. – are used to adjust for other non-random and observable factors influencing outcomes. (Rossi, Freeman, and Lipsey 1999).

Programs with full coverage, on the other hand, must rely upon non-experimental designs with evaluations of trends over time or differences in outcomes linked to different program intensities. If a decentralization program were to cover an entire country or region, leaving no areas to serve as controls, evaluation is more difficult. Comparisons are largely reduced to before, during, and after

designs. These have clear limitations, since observed changes may be due to a variety of influences. Comparisons may be possible if measures of decentralization – the degree of fiscal control for example – can be quantified and the intensity of the decentralization process can be shown to vary across regions or jurisdictions. Cross-sectional surveys can be used to measure the impacts of different intensities of decentralization programs on targeted outcomes. Statistical controls can then be used to control for other factors that may influence outcomes. If such surveys are collected at multiple points in time, i.e., panel surveys are conducted, considerably more robust analyses can be undertaken. If, however, a decentralization program is undertaken uniformly and in all regions, time series analyses, looking at trends in repeated measures of health outcomes before, during, and after the decentralization process is implemented, can be performed. These, however, are likely to suffer from considerable concerns regarding secular trends or other external factors (Rossi, Freeman, and Lipsey 1999; Rehle and Hassig 2001; Adamchak et al. 2000).

Robust research designs also generally involve repeated and comparable data collection (panel/longitudinal or time series studies) at different points in time – pre- and interim- and post-intervention. For evaluations of decentralization programs, time-series and panel studies are considerably more powerful than evaluations examining a snapshot of decentralization at a single point in time. This is because many factors can shape a situation at a particular point in time, and only through repeated observations can the influence of reforms such as decentralization be distinguished from other factors.

In Uganda, for example, the process of decentralization has coincided with numerous other changes in the country – economic growth and liberalization, reform of the civil service, relative peace, and reconstruction following more than a decade of civil strife. As a result, attributing changes in outcomes to specific factors has been made difficult.

In short, the robustness and statistical validity of impact evaluations is determined by a hierarchy of research designs, from those following experimental designs with randomized participation, to those following quasi-experimental designs with statistical controls for non-randomization, to observational and non-experimental designs.

Step 4. Collect Additional Data

Seldom will all of the data required for a robust evaluation of a decentralization program be readily available to a policy analyst or available in a form that permits ready analysis. Population-based nationally representative household surveys – providing key information on the impacts of a variety of health programs – are costly and unlikely to be undertaken annually in most developing countries. In general, these are also unlikely to be designed specifically for evaluations of decentralization. Even so, periodic (every 3-5 years) surveys such as the Demographic and Health Surveys are increasingly common in developing countries. Many of these surveys, however, while nationally or regionally representative (urban/rural, north/south/east/west/central), may have sample sizes that are insufficient for analyzing issues at the level of the decentralized unit (e.g., district or province).

Population-based household surveys require technical expertise that may not be available within ministries of health. In some cases, it may be easiest to contract with an outside agency with expertise in surveying or to piggy-back on the data collection efforts of organizations outside of the health sector. Annual household surveys in Uganda, for example, conducted by the Bureau of Statistics, examine household income and expenditure patterns in order to monitor poverty, but also contain substantial information on the utilization of health care for basic heath problems (illness,

immunizations, maternal health) and key health outcomes. In other countries, individual donors have chosen to contract with outside agencies to collect population-based data for evaluating the impacts of their own programs (MEASURE *Evaluation* 2003).

Because decentralization is often performed simultaneous with efforts to build local technical and information-gathering capacity, efforts to evaluate decentralization may be tied to the establishment of new monitoring systems, such as the routine health management information systems and development of sentinel sites for epidemiological data. These can complicate evaluations, as changes in measured health outcomes may reflect improvements in data quality rather than actual improvements in health.

Step 5. Analysis Stage

Analyses of decentralization will depend upon the financial resources available for evaluations, the capacity to conduct different types of analyses, the time frame for analysis, and the feasibility of different research designs (experimental versus non-experimental).

Ideally, monitoring and evaluation – including data collection and analysis – should constitute approximately 5 percent of a health or program budget. In countries that are hard-pressed to meet basic needs such as provision of essential health services, monitoring and evaluation may be considered to be a low priority and resources may be scarce.

Different research designs may be influenced both by political constraints – the potential for using comparison groups or partial coverage designs – and by fiscal constraints – the feasibility of funding more detailed data collection. Analysts may be limited to using existing data sources, which may require stringent assumptions or permit conclusions with numerous conditionalities.

Low public salaries may also limit the technical capacity – both at the local government level and at the central ministry level – for conducting rigorous impact evaluations, as individuals with specialized technical skills may be lured away by donors or opportunities abroad. Local capacity may be available only at universities and other academic institutions, perhaps within schools of public health or departments of population studies or statistics.

Decentralization is also generally a long-term process. Results – particularly health impacts – may not be detectable at early stages of the decentralization process or detectable only with a lag.

Many statistical software packages exist for data analysis. Most common among researchers in the social sciences and public health are Epi-Info, SAS, Stata, and SPSS. These software packages contain many of the basic statistical commands for doing simple analyses such as one- and two-way analysis of variables, or more complicated analyses using multivariate regression analysis. Historically, more sophisticated quantitative analyses were limited by computing power. That is unlikely to be the case. Rather, the more rigorous analyses are likely to be limited solely by the level of human capital.

Box 11. Multilevel Regression Analysis with Household and Health Facility Survey Data

In order to evaluate the impact of disparate factors, including decentralization, on the outcomes of decentralization (e.g., greater or more equitable utilization of essential health services), a common method of analysis is multivariate regression or multilevel analysis. Multivariate regression analysis attempts to measure the relationship between an outcome or dependent variable (e.g., contraceptive use, fertility, use of preventive health services) and a set of potential explanatory or independent variables (e.g., wealth, education, marital status, proximity to health care). In the context of evaluations of health programs and health systems in developing countries, the outcome and explanatory variables are often derived from population-based household surveys. The advantage of regression analysis is that multiple factors that affect dependent variables can be controlled for simultaneously.

Regression analysis is particularly important for evaluations using quasi-experimental designs in which participants – individuals, decentralized local governments, health care facilities – are not selected randomly. Regression analysis allows for observed measurable differences in non-randomly selected participants to be included in models along with measures of program exposure. Regression analysis therefore, under certain conditions, permits calculations of the impacts of decentralization purged of other potentially confounding factors.

Some examples of regression analyses include:

the effects on utilization of health services of being in a decentralized district or a district with greater fiscal autonomy relative to being in a non-decentralized district or a district with lesser fiscal autonomy

the effects of decentralization on health outcomes, technical and allocative efficiency, and other desirable decentralization objectives over time controlling for secular trends

the marginal effects of public sector expenditures on different program areas (primary health care vs. secondary care) for different socioeconomic groups (marginal benefit-incidence analysis)

estimates of technical and economic efficiency of autonomous public clinics or clinics in decentralized districts relative to centrally controlled public clinics.

A study of decentralization in Uganda used multilevel regression analysis to examine the impacts of local government health expenditures on health care utilization behaviors in decentralized localities (Hutchinson, Akin, and Ssengooba 2002). The analysis found considerable evidence of strong impacts of government inputs on the use of curative care services but negligible effects of government inputs on use of immunization services, antenatal care, and access to safe water and sanitation. Specifically, for curative care for both children and adults, higher expenditures per capita were positively associated with the likelihood that ill individuals would receive curative care. A greater budget share to mother–child health programs and to private goods in general was also associated with a higher likelihood that ill children would be taken for curative care.

Other issues: sample selection and endogenous decentralization, program targeting, difference-in-difference models

Useful sources of information for regression analyses: J. Wooldridge 2003; Maddala 1998 and 1983; Johnston and DiNardo 1997. Useful source of information for multilevel analysis: Angeles and Mroz 2001.

Step 6. Results Dissemination

The final step in any monitoring and evaluation effort is to present the results in a manner that maximizes their potential for influencing policy and making clear conclusions that can be fed back into program operations. This often requires presenting technically complex analyses in a way that is easily understandable to non-technocrats or to individuals of diverse educational backgrounds. Dissemination should therefore focus on key results with references to more complex analyses and methodologies. Often communications specialists can be used to develop strategies for communicating results to different groups and in different forums.

A final (and continual) step in any monitoring and evaluation effort is to use the results to revise the decentralization policy, to redress weaknesses in the current structures and processes, to remove barriers to effective outcomes and impacts, and to share information with others undergoing similar processes.

Ideally, dissemination of results would occur through oral presentations to health planners and policymakers at the central and local government levels or any levels where the results can assist in improving the functioning of the decentralized health sector. Results should be disseminated to all key stakeholders and all those in a position to affect the necessary changes. Such presentations might focus on a few key results, including areas where decentralization has succeeded and areas where additional work and revisions might be considered. Depending on the audience, oral presentations may be extremely technical – discussing methods of data collection, research design, and analysis – or limited to non-technical aspects and results understandable to a lay person. Interested parties could then refer to more detailed written reports of results and methods.

Written reports should document all research methods used, types of data collection, and specific analyses conducted. Appendices can be used to present more technical results. A sample outline might include the following chapters:

1. Rationales for decentralization, background, and history

2. Description of evaluation plan: methods and sources of data

3. Stakeholder analysis: perceptions of decentralization's impacts

4. Analysis of resource allocation and flows

5. Efficiency of service delivery: Changes in the costs of providing services – before and after decentralization, between

6. Utilization of health services: Analysis of trends and use of health services by geographic region

7. Analyses of equity issues

8. Suggestions for follow-up

Results dissemination should also involve a timetable for revising policy, a plan for further data collection and revisions to routine information systems, and suggestions for future evaluations.

6. Monitoring and Evaluating Decentralization: An Agenda for the Future

This guide has attempted to highlight some of the key issues in decentralization as they relate to the monitoring and evaluation of decentralization as a process and a bundle of interventions. The guide has examined the role that decentralization plays in making changes in authority, accountability, capacity, and information flows, with the ultimate objective of improving health outcomes. It has also presented indicators and common sources of information for collecting data on those indicators, along with a very general stepwise framework for setting up a decentralization monitoring and evaluation plan.

It is clear from country experiences that the link between decentralization and improved or more equitable health outcomes is far from guaranteed. This is due in part to shortages of information and the paucity studies using robust research designs that allow definitive conclusions to be made about decentralization's impacts. Many studies have been observational or descriptive, outlining major changes. While these studies are critical for monitoring and describing decentralization experiences, they generally lack the ability to link changes to outcomes and impacts.

There is considerable scope for additional operations and scientific research in the monitoring and evaluation of decentralization. Increasingly, international donors are being asked to demonstrate program achievements and calling upon recipient countries to be accountable for donor funds. As decentralization has been an increasingly common health sector reform in recent years, evaluations of its effects are likely to become more common as well.

The above presentation leads to several recommendations for additional study of decentralization – its inputs, changes, and outcomes:

- *Research designs*: Greater heed should be paid to research designs. While randomized experimental/control group designs are often precluded by political and social forces, all efforts should be taken to employ scientific methodologies in evaluations of decentralization processes. This will allow for results that are replicable, conclusions that are definitive, and guidelines that can be used in different settings.

- *Indicators*: Many of the indicators proposed here for monitoring and evaluating the effects of decentralization are standard indicators of health system performance. However, they are often used for purposes other than to evaluate decentralization. In some cases, however, there is a need for new indicators. The same holds for many of the data collection tools – routine health information systems, household surveys, and facility surveys. Bringing these together to address decentralization reforms allows for more comprehensive reviews of country decentralization performance.

- *Capacity building in monitoring and evaluation*: It is hoped that this guide has not been so esoteric as to be of little value to the actual implementers and evaluators of decentralization programs in developing countries. Rather, it is hoped that the issues raised here will spur additional efforts in monitoring and evaluation and highlight areas where additional technical and analytical capacity building might prove useful.

Annex A. Hypothetical Division of Responsibilities in a Decentralized Health System

Responsibility	Central	Regional Offices/Provinces/States	Districts/Municipalities/ Local	Hospitals/Facilities	Communities, Citizens and Community Groups
POLITICAL/LEGAL					
Legal Framework	Decentralization laws codified in constitution	Limited role in making of laws	No role	Service delivery according to laws	Through electoral processes
Policy Making	National health policy formulation	Limited role in policy making; transmission of national policies; supervision of	Local policy formulation only	Ensuring that actions adhere to national, regional and local policies	Limited role at local level
Strategic Planning	Preparation of national health plans	Preparation of regional health plans and reports	Preparation of annual health plans and reports; enactment of plans for local health services	Enactment of plans for facility-based services	Occasionally as in “bottom-up” planning
Regulation	Regulation of private profit and non-profit health care providers	Enforcement of regulations on private profit and non-profit providers	Little role	No role	No role
	Oversight of health care institutions and health research institutes with national mandates	Some oversight of regional health institutions	Some oversight of district healthh institutions	No role	No role
	Regulation of private insurers and national social insurance or health funds	Limited role unless separate state insurance benefits	Monitoring of community-based health insurance	No role	No role
Norms and Standards	Norms and standards regarding equipment, health infrastructure and technology	Supervison of district health authorities to ensure compliance with national standards	Supervision of health facilities and community health workers to ensure compliance with national standards and guidelines	Adherence to norms and standards	Some participation in management boards to ensure adherence to norms and standards; feedback to authorities
International	Liason with international health organizations and aid agencies	Some liason with international health organizations (Sector-wide Approaches [SWAps])	Some liason with international health organizations (SWAps)	Some interaction with international NGOs	Interaction with international NGOs
FISCAL					
Revenue Generation	National taxes, tariffs	Regional/State taxes	Limited role	Collection of user fees	In some cases, participation in community-based insurance or pre-payment
Intergovernmental Transfers	Financing national, regional, and local health services with other transfers; Ensuring national priorities through systems of conditional and matching grants	Financing regional and local health services	Raising additional local funds	Reliance upon government transfers	No role
	Financing health research with national interest	—	—	—	—
Expenditure Management	Advice on allocation of resources, including capital funds	Approval of large-scale capital projects outside the public sector	Implementation of local capital projects	Autonomous institutions have wide latitude in expenditure decisions	In some cases, participation in bottom-up planning
	Public health budget analysis and formulation	Compilation of health expenditure budgets	Management and control over local health budgets	—	—

Responsibility	Central	Regional Offices/Provinces/States	Districts/Municipalities/ Local	Hospitals/Facilities	Communities, Citizens and Community Groups
ADMINISTRATIVE					
Human Resources	Appointment of senior officials; Administrative officials hired through civil service	Hiring of regional, provincial health officials (unless elected)	Hiring of district officials	Hiring of local support staff; occasional community outreach activities	In some cases, facility management boards participate in hiring/firing
Supervision	In some cases, supervision of regional health officials	Supervision of district health teams	Supervision and control of community health workers	Supervision of facility staff	In some cases, facility management boards participate in oversight
Training and Capacity Building	Planning, training, and regulation of health personnel	Monitoring and employment of public sector health personnel	In-service training, especially on-the-job support, of health workers	In-service training, especially on-the-job support, of health workers	No role
Drugs, supplies, and equipment	Procurement through national medical stores of drugs, supplies, and equipment	—	—	Rare direct procurement; some decision making power over inputs, drug kits	No role in procurement
	Monitoring pharmaceutical policies, drug quality, and distribution	Distribution of drugs, supplies, and equipment to district health teams	Distribution and monitoring of drugs, supplies, and equipment to local health facilities	Direct control over inputs, including inventory management systems	In some cases, facility management boards participate in oversight
Infrastructure	Some financing decisions for large capital outlays	Some financing decisions for large capital outlays	Financing decisions over smaller capital outlays	Autonomous institutions may have some control over capital outlays	Limited role
Operations and Maintenance	Provision of guidelines and technical assistance for regular procedures	Provision of guidelines and technical assistance for regular procedures	Allocations of funds for operations and maintenance	Allocations of funds for operations and maintenance	Limited role
Technical Assistance	Guidelines for regional and local health planning	Regional health planning and program monitoring	—	—	Limited role
	Technical advice on programs	Technical advice on programs	Implementation of technical advice and operations research	—	Limited role
	Collecting and compiling routine health information and disseminating new policies	Collecting and forwarding routine health information to central and district offices	Collecting and forwarding routine health information to regional and central offices	Collecting and forwarding routine health information to regional and central offices	Limited role
Service Delivery	Technical advice on programs including vertical programs	Coordination of public and nongovernmental regional activities	Coordination and supervision of all government, NGO, and private health services	Charged with service delivery of essential health package	Community outreach programs, awareness, sensitization
	Provision of logistical support to regional and district health teams	Provision of logistical support to district health teams	Management of all public sector health facilities with local responsibilities	Community outreach programs, awareness, sensitization	—
	Provision of national public goods: conducting research and disseminating results	—	Dialogue with beneficiaries of health services and their representatives	—	—
	Information, education, and communication (IEC) programs on national health priorities	IEC programs of regional health priorities	IEC programs on district health priorities	—	—

Responsibility	Central	Regional Offices/Provinces/States	Districts/Municipalities/ Local	Hospitals/Facilities	Communities, Citizens and Community Groups
Community involvement	No role	Policy making regarding creation of community organizations	Promotion of community participation in local health services planning, implementation and monitoring	Community outreach programs	Participation in facility management boards; representatives chosen in local elections
	—	—	Monitoring and coordination, in some cases, of community-based health programs	In some cases, organization of community-based health and health insurance programs	In some cases, organization of community-based health and health insurance programs
	—	—	Promotion of links with local government departments	—	—
Hospitals	In some cases, supervision of semi-autonomous and government controlled national referral hospital	In some cases, supervision of regional hospitals	In some cases, supervision of district hospitals	In some cases, near autonomy	Particiapation in hospital management boards

Annex B. Health Sector Accountability Matrix

Health Sector Actors		Users/ patients	Ministry of Health	Agencies of restraint	Funding agencies	Parliament	Local gov't officials	NGOs	Hospital boards	Health councils	Profes-sional associations	Unions	Health care providers	Interna-tional donors
Supply Informaiton, Respond to Sanction	Users/ Patients													
	MOH													
	Agencies of restraint													
	Parliament													
	Local govt officials													
	NGOs													
	Hospital boards													
	Health councils													
	Professional associations													
	Unions													
	Health care providers													
	International donors													

Annex C. Key Questions regarding Monitoring and Evaluation of Decentralization along Functional and Dimension Areas

Functional Area	Authority	Accountability	Capacity	Information
POLITICAL				
Legal Framework	Is the decentralization process codified in law? How are lawmakers selected?	Do judicial systems and other law enforcement apparatus exist to enforce laws? What are the length of terms for politicians?	Do politicians have the necessary knowledge and information to enact relevant legislation?	Do citizens have information on the performance of their elected officials?
Policy Making	Who (national, regional, local, community) makes policy? How is policy translated into action? Who determines national, regional and local priorities?	What mechanisms exist for feedback at the national, regional, local, community, and facility levels so as to revise policy as needed?	Have subnational officials been informed of national priorities and do they understand?	Is policy based on reliable and timely receipt of information on performance?
Strategic Planning	Who prepares national, regional, and local plans? How are national priorities ensured in regional, and local plans?	What mechanisms exist for feedback so as to revise national, regional, and local plans as needed?	Do planners have the requisite skills and competencies to analyze information and data for making strategic plans?	Is planning based on reliable and timely receipt of information on performance?
Regulation	What regulations exist to ensure accreditation and certification of doctors, health workers, and medical institutions?	Are there mechanisms (quality assurance units, regulatory bodies) to ensure that regulations are enforced?	Do regulatory agencies have sufficient numbers of trained officials with the financial resources to carry out their functions?	Is information collected that allows determination of health workers who do not adhere to minimum standards?
Norms and Standards	Who decides norms and minimum standards of care?	What mechanisms/bodies exist to enforce norms and standards (e.g., accreditation, sanctions, employment, market mechanisms)?	Do systems exist to compile and monitor adherence to norms and standards?	Is information available on adherence to norms and standards?
International Coordination	Who coordinates donor financing and priorities?	What mechanisms exist to ensure	Do national, regional, and local health officials have the requisite skills to coordinate, negotiate and advocate for national priorities and needs?	—
FISCAL				
Revenue Generation	What is the overall level of resources for health across different regions/local governments? Are they equitably distributed across regions/jurisdictions? What proportion of resources comes from the various funding sources (national government, local government, NGOs, insurance companies, autonomous quasi-public institutions, private sector, private individuals) in the health sector? What is the absolute quantity (per capita) of transfers (financial and in-kind) from the various sources of funds to local governments?	What proportion of each level of government's resources come from categorical grants, equalization grants, matching grants, block grants, general revenue and tax revenue?	Are resources sufficient to finance a basic health package? Are analysts' skills sufficient for documenting resource flows?	Are data systems in place to collect information on revenue-generating capacity and systems of national and local health accounts?
Intergovernmental Transfers	Who determines (and what is) the formula for allocating resources to subnational governments?	Are intergovernmental transfers based on simple and verifiable formulae? What type of transfers (unconditional/conditional) are used to ensure fulfillment of national priorities?	Are financial management systems developed for tracking flows of funds? Are analysts' skills sufficient for documenting resource flows?	Is information on intergovernmental transfers (national, regional, local) published by the media?

Functional Area	Authority	Accountability	Capacity	Information
Expenditure Assignment	Who (national, regional, local, community, facilities) determines how financial resources will be spent among different health priorities?	Is information on health budgets (national, regional, local) published by the media? What mechanisms (bottom-up planning, annual conferences) exist for local input into budgetary processes? What systems exist for periodic auditing of local financial accounts?	Are planners sufficiently trained in interpreting epidemiological, cost and effectiveness data to make optimum budgetary decisions?	Are spending decisions based on accurate epidemiological, cost, and effectiveness data? Do financial management information systems exist to monitor the performance of local health officials?
ORGANIZATIONAL				
Human Resources	Who/what level (national, regional, local, facility) determines the hiring, firing, rewarding, and sanctioning of health workers and support staff?	What mechanisms (laws, regulations, professional standards) exist to hold workers accountable for performance? Are Patient's Bills of Rights present in public sector facilities? What mechanisms exist to sanction poor performing workers and reward good performing workers?	Do health workers have adequate training to fulfill the requirements of their jobs? How are national, regional, local, and facility training needs determined?	What procedures (performance reviews, direct observation) exist to measure the performance of health workers? Is this information provided to the supervisors who can sanction or reward health workers?
Training and Capacity Building	Who designs training programs? Who conducts training? Who monitors the quality of training?	What systems are in place to periodically update worker skills? What systems are in place to monitor worker proficiency?	Do health workers have adequate training to fulfill the requirements of their jobs?	What information is collected on worker performance, training program outputs, and other measures of capacity building?
Drugs, Supplies, and Equipment	Who is responsible (national, regional, local, facility level) for procuring drugs, supplies, and equipment?	What mechanisms exist to monitor stocks of drug and supplies? What systems exist to ensure minimum standards of drug/supplies procurement?	Are staff trained in inventory control?	Is procurement of drugs, supplies, and equipment based on epidemiological data and information on costs?
Infrastructure	Who is responsible for decisions on major capital investments, such as new clinics, hospitals, and administrative offices?	Does the existing decision-making system occur at a level that is too local and result in an over-capitalization of the health sector (i.e., too many hospitals)	Do systems exist for collaboration among localities so as to avoid over-capitalization?	Are capital investment decisions based on accurate epidemiological, cost, and effectiveness data?
Technical Assistance	Who (units within the ministry of health and elsewhere) is responsible for providing technical assistance in key health areas (maternal-child health, HIV/AIDS, infectious diseases, mental health, etc.)	What mechanisms exist, if any, for feedback on the quality of technical assistance and the performance of experts?	Does the central ministry have sufficient experts to advise decentralized units in best practices, operations research, etc.?	How is information about best practices transmitted to health workers? How do results from in-country and international research get translated into revised best-practices?
Operations and Maintenance	Who is responsible for decisions on financial allocations to operations and maintenance?	What mechanisms exist to ensure the proper functioning of existing health infrastructure?	Do planners have the requisite knowledge and skills for budgeting and planning for recurrent inputs?	Do financial management systems adequately capture amortization and depreciation of capital costs?
Service Delivery	Who is responsible for service delivery for national, regional, and local public goods? Who is responsible for ensuring provision of an essential package of primary health care interventions?	Who is responsible for supervision of service delivery? What mechanisms (facility management boards, markets) are in place to promote quality service delivery?	Do health workers have the necessary skills and resources to perform tasks according to minimum standards of quality?	Do health information systems exist (and are they utilized) to transmit information on patient flows?

Community involvement	What supervisory, decision-making, and planning bodies exist to involve citizens in the health system?	What roles do community groups (election of local health officials, participation in planning and running of facilities)	Do citizen groups have the necessary skills and knowledge to evaluate the adequate performance of the health system?	Do citizen groups have information on budgets, expenditures and system outputs for evaluating performance?
Hospitals	Under whose authority (national, regional, local, autonomous) are referral, regional and local hospitals?	Who supervises hospitals and ensures that minimum standards are met, essential services are provided and the poor are served?	Do hospitals have the requisite financial, human and material resources to provide essential secondary and tertiary care?	Do health information systems exist (and are they utilized) to transmit information on patient flows, system inputs and performance?

Annex D. Types of Indicators for Monitoring and Evaluation of Decentralization across Functional and Dimensional Areas

Functional Area	Inputs	Processes	Outputs
POLITICAL/LEGAL			
Legal Framework			
Authority	Constitution, laws delineating responsibilities in decentralized system and establishing the legal basis for the existence of decentralized structures; Structures of government (federalist, unitary)	Formulating and enacting constitution Devolving/delegating/deconcentrating responsibilities according to legal requirements	Transparent, accountable, and representative governance
Accountability	Functioning judicial system Electoral system for representatives, health officials, community representatives Appointment process for officials Mechanisms for recall	Consistent enforcement of laws Regular holding of elections for national, regional, and local politicians and health officials	
Information	Systems to inform legislators regarding national priorities; Systems for constituents to view performance of elected officials	Free, fair, and transparent elections held according to legally required schedules	
Capacity	Capacity for lawmakers to interpret relevant health information for developing relevant legislation; capacity of electorate to evaluate the performance of elected officials	Building capacity for an informed electorate to select representatives	
Policy Making			
Authority	Division of responsibilities among national, regional and local officials for policy making; control over priority-setting	Coordinated policy making among key stakeholders according to national, regional, and local priorities	Informed policies that address health sector priorities and allow government to carry out its stewardship role
Accountability	Electoral system for representatives, health officials, community representatives; systems of voice for all stakeholders	Developing policies based on consensus of key stakeholders	
Information	Scientific and operations research organisms for information generation for policy formulation	Using information from scientific and operations research and routine information systems for developing policies	
Capacity	Capacity to interpret scientific and performance information for policy making	Building capacity to transmit information on system performance	
Strategic Planning			
Authority	Division of responsibilities among national, regional, and local officials for planning; control over priority-setting	Planning that is coordinated and involves consensus building	National and local health planning based on national, regional, and local priorities
Accountability	Electoral system for representatives, health officials, community representatives; systems of voice for all stakeholders (yes/no)	Use of national priorities and guidelines in determining local government activities	
Information	Scientific and operations research organisms for information generation for policy formulation	Systems for feedback; reliable and timely use of information	

Functional Area	Inputs	Processes	Outputs
Capacity	Capacity to interpret financial, epidemiological data for planning	Training in financial and epidemiologic data compilation and use (e.g., pct. of workers trained)	
Regulation			
Authority	Existence of regulatory bodies for certification of personnel, for regulation of private practitioners, for oversight of health care institutions and research institutions; and for accreditation	Developing regulations, updating, and disseminating	Well-regulated public and private sectors according
Accountability		Enforcement of regulations, regular oversight;	
Information	Published and disseminated regulations and codebooks, standards of care	Use of information systems for monitoring adherence to legislation and regulations	
Capacity	Sufficient human resources with at least basic capacity to carry out regulatory responsibilities	Building of capacity for undertaking regulatory functions	
Norms and Standards			
Authority	Division of responsibilities for setting norms and standards; published national minimum standards for care	Distribution and dissemination of nationals standards	Public and private providers who perform according to known and verifiable standards
Accountability	System of evaluating workers; existence of national standard treatment guidelines, patient's bill of rights	Periodic review of worker performance to ensure adherence to standards	
Information	Systems for compiling performance indicators for workers, managers	Posting of standard treatment guidelines, patient's bill of rights in hospitals/clinics	
Capacity	Capacity to implement norms and standards	Building technical capacity to evaluate worker performance	
FISCAL			
Revenue Generation			
Authority	Tax collection systems; control over decisions to tax, borrow and implement user fees; financing of public goods; per capita health expenditures by region/jurisdiction/ socioeconomic group Total health expenditure per capita (and share of total) by central/regional local gov't, private providers, households, NGOs	Collection of taxes, user fees, insurance payments	Sufficient revenues to finance essential health packages and national and regional public goods
Accountability	Accountancy and financial management systems	Use of basic accounting and financial management procedures; periodic auditing of national, local government accounts	
Information	Financial management systems;	Use of financial management systems to document flows of funds	
Capacity	Systems to train in basic accountancy, user fee collection	Training in accounting and bookkeeping Training of providers in user fee collection, documentation	

Functional Area	Inputs	Processes	Outputs
Intergovernmental Transfers			
Authority	Formula for allocating resources (based on population, health) Pct. of local revenue from: - categorical grants - matching grants - equalization grants - conditional/unconditional grants	Formula used for allocating resources across jurisdictions	System of transfers allowing sufficient resources to fund nationally mandated programs and fulfill local priorities
Accountability	Conditional/matching grants used to fulfill national priorities Equalization grants used to promote vertical equity	Use of basic accounting and financial management procedures; periodic auditing of national, local government accounts	
Information	Publication of transfer information (amount,timing) in mainstream media	Use of public information on transfers to hold health officials, workers accountable	
Capacity	Systems to train in basic accountancy, financial management	Training in accounting and bookkeeping Training of providers in user fee collection, documentation	
Expenditure Management and Budgeting			
Authority	Defined service packages including national priorities	Pct. of expenditure and expenditure per capita on: - Private/curative care vs. public health - Primary v. secondary v. tertiary vs. other National/regional/local gov't share in curative/public health National/regional/local gov't share in expenditures on drugs/salaries/operations and maintenance/ capital/other	Rational allocation of resources to primary, secondary and tertiary care based on national, regional, and local dispersion of costs and benefits
Accountability	Use of bottom-up planning to involve all stakeholders	Budgeting done with full stakeholder involvement based on available cost/disease burden data	
Information	Defined service packages based on costs, technical assessments of effectiveness	Collection of epidemiologic, disease burden, cost and effectiveness data that are used in formulating budgets	
Capacity	Systems to combine data on costs/disease burden/effectiveness	Training in priority setting and use of costs and disease burden data in budgeting	

Functional Area	Inputs	Processes	Outputs
ORGANIZATIONAL			
Human Resources			
Authority	Level of government determining employment Clear procedures for hiring/firing/electing - health officials - senior management - clinic and hospital management - medical professionals - non-medical staff Pct. of hospital/clinic posts (by type) that are filled	Hiring based on facility utilization and health needs (not nepotism, tribalism, etc.)	Health sector labor force allocated based on costs and needs that has the technical and managerial capacity to carry out prescribed functions with necessary incentives to perform those functions
Accountability	Responsibility for firing, rewarding, and sanctioning based on performance	Firing, rewarding, and sanctioning based on performance	
Information	Systems for flows of information about hiring needs; performance of health workers	Regular performance monitoring and reviews based on quantifiable performance objectives	
Capacity	Systems to pay health workers on time Average salary by grade Systems for regular skills updates	Payment of salaries, bonuses on time Training and skills updating Pct of civil service receiving management training	
Training and Capacity Building			
Authority	National institutes for training of health workers	Development of skilled health workers. Number/pct. of doctors, nurses, health workers trained each year	A trained health workforce to carry out essential functions in service delivery and management
Accountability	Accreditation procedures for training institutes	Periodic reviews of training curricula; periodic examinations of performance; Pct. of health workers adequately performing assigned tasks relative to measurable national standards of clinic and diagnostic performance	
Information	Training needs databases	Use of training needs data bases for priority setting in national, regional and local	
Capacity	Systems for updating instructors' skills	Training of trainers	
Drugs, Supplies, and Equipment			
Authority	Systems for procurement of drugs, supplies, and equipment based on needs/utilization	Procuring drugs, supplies, and equipment through competitive bidding/quality control	Efficient management of key service delivery inputs to minimize wastage and loss
Accountability	Systems for control of drug stocks at national, regional, local and facility levels	Use of inventory control systems at all levels	
Information	Stock control databases on the use of drugs at all levels	—	

Functional Area	Inputs	Processes	Outputs
Capacity	Pct. of hospitals/clinics having: - essential drugs in-stock and non-expired - key supplies (e.g., gloves, syringes, bandages) - acceptable storage facilities - equipment in working order (e.g., X-rays, sterilization equipment - safe water, electricity Composite indicator for commodities	Rational use of drugs/supplies according to national guidelines Pct. of hospitals/clinics experiencing stockouts in last 6 months (by jurisdiction) Pct. of hospitals/clinics in good/excellent condition (by jurisdiction) Pct. of hospitals/clinics experiencing blackouts in last 30 days (by jurisdiction) Pct. of key personnel trained in drugs, supplies, equipment stock management	
Infrastructure			
Authority	Responsibility for capital decisions (hospitals, clinics, offices)	Decisions about large capital investments made with full stakeholder involvement based on needs/utilization data	Rational allocation of resources for infrastructure to primary, secondary, and tertiary care based on national, regional, and local dispersion of costs and benefits
Accountability	Accountability to citizens and electorate regarding major capital projects and civil works; auditing procedures to monitor use of funds	Conducting referendums and elections on major capital projects and civil works; conducting periodic audits of contractors and contracting procedures	
Information	Financial information systems and systems of accountancy	Use of needs/utilization data in planning for capital investments	
Capacity	Technical capacity to undertake large capital projects	—	
Technical Assistance			
Authority	Responsibility for disseminating information on best practices, norms for care	Dissemination of best practices and scientific knowledge to practitioners	Timely and relevant technical assistance from central government agencies with comparative advantage in scientific and operations research
Accountability			
Information	Access to international operations research and scientific knowledge		
Capacity	Scientific institutions, ministerial departments with up-to-date knowledge of best practices, international advances in medical technology		
Community Involvement			
Authority	Existence of local health boards, clinic/hosp. management teams based on local representation	Local health boards/management teams meeting regularly and fulfilling mandated functions	Community involvement in management, decision making, planning, and policy making that meets local needs and priorities
Accountability	Systems determining representation on boards/teams	Use of clearly defined processes for selecting representatives, evaluating performance	
Information	Systems for evaluating performance of representatives	Representatives held accountable for fulfilling selected tasks/responsibilities	
Capacity	Community representatives with requisite knowledge and skills to undertake management, planning, decision-making, policy-making functions	—	

Annex E. Data Matrix

Functional Area	Key Issues	Data Sources	
		Routine	Periodic or Special Data Collection
POLITICAL			
Legal Framework Policy Making Strategic Planning Regulation Norms and Standards International Coordination	Background information on contextual factors influencing decentralization; legal, policy, and regulatory systems; electoral systems for health officials and other politicians; time frame for decentralization; systems for citizen voice and accountability of health officials and politicians; transparency in governance, planning, and policy making	Documents (Constitution, Sector Strategy Papers) outlining legal frameworks and responsibilities of different levels of government	Key informant interviews, focus group discussions, short quantitative surveys with structured questionnaires
FISCAL			
Revenue Generation	Total (per capita) financial resources for the health sector and sources (central gov't, local gov't, NGOs, private) Equity of financing across geographic regions and poor/non-poor groups	Ministry of finance published budgetary information	Private household expenditures Living Standards Measurement Surveys (LSMS) Demographic and Health Surveys (DHS) National and Local Health Accounts Public Expenditure Reviews
Intergovernmental Transfers	Transparency of transfers; formulae used to determine transfers; public dissemination of transfers; donditionality of transfers and degree of local autonomy	Newspapers and media; government documents from ministries finance and of local government	National and Local Health Accounts
Budgeting and Expenditure Assignment	Degree of control of decentralized financial decision making; capacity for informed decision making; allocation of resources across priority areas and levels (primary, secondary, tertiary care); financing of essential service packages; bottom-up planning; allocations to capital/recurrent inputs	National and local government budgets and expenditures Financial management systems Information on training programs in expenditure management	National and Local Health Accounts
ORGANIZATIONAL			
Human Resources	Allocation of staff and determination of staffing needs; systems of performance evaluation	Government documents on deployment of staff Routine health information systems Facility management systems	DHS Service Availability Module MEASURE DHS+ Service Provider Assessment; facility surveys Client exit interviews
Training and Capacity Building	Level of training of health workers and periodic skills updates	National universities and training institutes Ministry of health	Special studies of training needs assessments
Drugs, Supplies, and Equipment; Operations and Maintenance	Stocks of drugs, supplies, and equipment; Ssstems for management	Routine health information systems Drug tracking systems	DHS Service Availability Module MEASURE DHS+ Service Provider Assessment; facility surveys; inventories

		Data Sources	
Infrastructure/Hospitals	Organization of services; hospital autonomy; allocation of resources to primary/secondary/tertiary care	Government budgets and expenditures	Special studies of infrastructure needs National and Local Health Accounts
Community Involvement	Existence and performance of local health boards and facility management committees; participation in local elections	Facility management information systems	Key informant interviews: Political leaders Health officials Community leaders Community surveys
Access, Utilization, and Equity	Distance to care, treatment seeking behavior by different socioeconomic groups	Health management information systems Facility records	Household surveys Geographic Information Systems (GIS)
Efficiency and Quality	Technical and economic efficiency; changes in the quality of care	Facility management systems	Facility surveys; costing studies
Impact: Incidence Survival Quality of Life	Impact of decentralization on health outcomes	Epidemiological surveys, patient registers, sentinel sites, household surveys, national censuses: any evaluations that are already in place.	Household surveys LSMS DHS

Annex F. Decision-space Functions

FINANCE and EXPENDITURE FUNCTIONS	
Revenue Sources	Choices about where sources come from: i.e., will local authorities be allowed to assign own source revenue to health?
Allocations of Expenditures	Choices about how to allocate funds: i.e., will local authorities be allowed to assign funds to different priority programs? Hospitals versus primary care?
Fees	Choices about local charges: i.e., will local authorities be allowed to set fees, and, if so, are they allowed to determine the levels and change them?
SERVICE ORGANIZATION FUNCTIONS	
Hospital Autonomy	Will local authorities grant hospitals autonomy and select the degree of autonomy allowed?
Insurance Plans	Will local authorities create, manage, and regulate local health insurance plans?
Payment Mechanisms	Will local authorities select different means of paying providers, e.g., per capita, salary or fee for service?
Required Programs and Services	To what degree will the central authority define what programs and services the local health facilities have to provide?
Service Standards	To what degree will the central authority define service standards, such as quality standards for facilities?
Vertical Programs, Supplies, and Logistics	Are vertical programs continued under the control of central authorities or are they transferred to local control? Are drugs and other supplies provided by central authorities or do they become the responsibility of local authorities?
HUMAN RESOURCE FUNCTIONS	
Salaries	Will local authorities be allowed to set different salary levels? Will they be allowed to determine bonuses?
Contracts	Will local authorities be allowed to contract short-term personnel and set contract terms and compensation levels?
Civil Service	Will local authorities be allowed to hire and fire the permanent staff without higher approvals? Will staff be able to be transferred by local authorities?
ACCESS FUNCTIONS	
Access Rules	Will local authorities decide who has access to facilities and who is covered by insurance?
GOVERNANCE FUNCTIONS	
Governance Rules	Are local officials accountable to the electorate? Will local officials have choices about: Size and composition of hospital boards? Size and composition of local health offices? Size, number, composition, and rule of community participation

Source: Bossert 2000b

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