A WORLD BANK COUNTRY STUDY

Health Sector Reform in Bolivia

A Decentralization Case Study

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Abstract

Bolivia made progress in health status and equity in the last decade, thanks to the implementation of a series of health policies directed primarily at reducing maternal and infant mortality and controlling communicable diseases. These policies include the introduction of a focus on health outcomes in the context of decentralization, the implementation of a public health insurance, the strengthening of vertically-financed public health programs and to a lesser extent, an increase in the size of the sector's workforce and greater participation of indigenous peoples for health. This report analyzes these policies, draws lessons from their implementation, discusses remaining challenges, and provides recommendations in the context of the country's latest policy developments.

Findings show that while coverage has increased in almost all municipalities, significant equity gaps remain between the rich and the poor, the urban and rural, and the indigenous and non-indigenous. The analysis suggests that the Ministry of Health should concentrate on three key issues: first, maintaining the focus on national priorities in the context of the new, expanded maternal and child insurance; second, strengthening efforts to extend care to poor rural areas; and third, improving the effectiveness of the system in the context of the new management model.

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Acronyms and Abbreviations

APL	Adaptable Program Loan
BRISAS	*Brigadas de Salud* (Itinerant Health Brigades)
CIDOB	*Confederación de Pueblos Indigenas del Oriente Boliviano* (Eastern Bolivian Native People's Confederation)
CSCB	*Confederación Sindical de Colonizadores de Bolivia* (Labor Confederation of Colonizers of Bolivia)
CSUTCB	*Confederación Sindical Unica de Trabajadores Campesinos de Bolivia* (Sole Labor Confederation of Farm Workers of Bolivia)
CSTSB	*Confederación Sindical de Trabajadores de Salud de Bolivia* (Labor Confederation of Health Workers of Bolivia)
DHS	Demographic and Health Surveys
DILOS	*Directorio Local de Salud* (Local Health Board)
DFID	Department for International Development (UK)
ECLAC	United Nations Economic Commission for Latin America and the Caribbean
EPI	Expanded Program of Immunizations
ES	Epidemiological Shield
EXTENSA	National program for the extension of coverage to rural areas
FPS	*Fondo de Inversión Productiva y Social* (Productive and Social Investment Fund)
FSN	*Fondo Solidario Nacional* (National Redistribution Fund)
HIPC	Highly Indebted Poor Countries
HRH	Human Resources for Health
IADB	Inter-American Development Bank
IMR	Infant Mortality Rate
INASES	*Instituto Nacional de Seguro de Salud* (National Institute of Health Insurance)
LAC	Latin America and the Caribbean
MECOVI	*Encuesta de Mejoramiento de Condiciones de Vida* survey
MMR	Maternal Mortality Rate
MOH	Ministry of Health
NDL	National Dialogue Law
PA	Performance Agreements
PAHO	Pan-American Health Organization
PRS	Poverty Reduction Strategy
SBS	*Seguro Básico de Salud* (Basic Health Insurance)
SBSIO	*Seguro Básico de Salud Indígena y Originario* (Indigenous Basic Health Insurance)
SEDES	*Servicio Departamental de Salud* (Departmental Health Services)
SNIS	*Servicio Nacional de Información en Salud* (National Health Information Service)
SUMI	*Seguro Universal Materno Infantil* (Universal Maternal and Infant Insurance)
SNMN	*Seguro Nacional de Maternidad y Niñez* (National Maternity and Childhood Insurance)
UNDP	United Nations Development Program
USAID	United States Agency for International Development
WHO	World Health Organization

Executive Summary

Introduction

Bolivia made progress in health status and equity in the last decade, thanks to the implementation of a series of health policies directed primarily at reducing maternal and infant mortality. These policies are: (i) the introduction of performance agreements that set yearly regional targets for priority indicators, (ii) the implementation of a public health insurance for maternal and child interventions, (iii) the strengthening of vertically-financed public health programs, (iv) an increase in the health sector's workforce in the context of the HIPC debt relief initiative, and (v) initiatives promoting indigenous empowerment and an intercultural approach to health care. This document analyzes these health reform policies, draws lessons from their implementation, discusses policy and structural gaps and provides specific recommendations in the context of the latest policy developments.

Measured against what would be expected from its level of income and education, Bolivia has a history of unsatisfactory health outcomes and poor maternal and infant mortality indicators. In 1994, the infant mortality was 75 per 1,000 live births and the maternal mortality 390 per 100,000 live births, among the highest in the region.

The decentralization of Bolivia's government structure in 1994 had a significant impact on the organization of health service delivery in the country. The core component of decentralization was the distribution of 20 percent of central government revenues to the country's 314 municipal governments. This 20 percent included some of the resources previously used by the central government to finance health care. The ownership of health facilities and the responsibility over financing of equipment and basic inputs was decentralized to municipalities. The "responsibility for health care," an insufficiently defined concept, was also decentralized to municipal governments. At the same time, the responsibility for the administration and management of human resources for health (HRH) was deconcentrated to the Ministry of Health's (MOH) regional administrations (SEDES). There were two attempts at fully decentralizing the sector by transferring

the responsibility for HRH financing and management to municipalities (in 1994 and in 2001, in the framework of the National Dialogue[1]), but both failed after fierce political battles.

This decentralization process brought the services closer to the population and gave the municipalities a greater role in financing and provision. However, it also gave local governments the authority to decide autonomously whether or not to fund health care, including the option to use the central government transfers for other purposes. Furthermore, it fragmented between different actors the responsibility over production factors (labor, capital, and inputs). This setup created difficulties for the local implementation of national priorities, the management of facilities and human resources, as well as transparency and accountability.

In response, the MOH developed instruments to clarify the responsibilities of municipalities, regions and the central government, by shifting the focus of the sector from inputs to health outputs and outcomes and increasing accountability within the system. Second, it introduced the public health insurance as a mechanism for earmarking a small fraction of central government transfers to pay for the non-salary recurrent costs of a basic package of services. Third, faced with the political impossibility of transferring HRH to municipalities, the government devised various organizational models that address the management difficulties created by the fragmented decentralization and provide alternative means to give municipalities an effective voice in the management of human resources.

As a result of the implementation of these policies, the coverage of priority maternal and child interventions increased substantially. Coverage of skilled birth attendance more than doubled, from 25 percent in 1994 to 54 percent in 2002, and coverage of pneumonias in children under 5 rose from 25 to 100 percent in the same period. Preliminary data suggest that this increase in coverage has translated into a drop in infant and maternal mortality, to 66 deaths per 1,000 live births, and 234 deaths per 100,000 live births, respectively (in 2000). However, two concerns arise: (i) in recent years, the rate of increase in coverage has been tapering off; and (ii) the equity gap remains, despite the fact that the reforms reached not only the urban and rich, but also the poor, rural, and indigenous municipalities; in 2001, the coverage of skilled birth attendance was 89 percent for the richest fifth of the population, while it reached only 25 percent for the poorest.

Furthermore, despite the introduction of the public health insurance, households remain an important source of financing for the sector, with out-of-pocket expenditures contributing 30 percent of national health spending. On the other hand, while public health spending as a percentage of GDP increased in the last 4 years, it remains low (1.4 percent in 2000) and not well targeted. Finally, social security, which accounts for 37 percent of national health spending, is concentrated in the higher income quintiles.

In the last year, the current government deepened some of the previous reforms and launched new ones. These include the Universal Maternal and Child Insurance (SUMI—which builds on the previous public health insurances), the new decentralized management model centered on the DILOS, efforts to improve the policy dialogue with indigenous peoples, and EXTENSA, a program for the extension of coverage to rural areas. These new initiatives have the potential to sustain the progress achieved in recent years, but also present new challenges, especially in the current context of rising tensions resulting from the country's economic crisis and recent social conflicts. These challenges require new answers that will maintain and consolidate the initiated reforms and their focus on providing services to the poor.

1. The "National Dialogue 2000" consolidated demands from local and national governments, civil society and other actors, and culminated in the Bolivian Poverty Reduction Strategy (PRS) and the National Dialogue Law (passed in July 2001), which legislates the use of funds liberated through HIPC II debt-relief.

Clarifying Targets and Accountability in the Context of Decentralization

To clarify targets and improve accountability within the decentralized system, the MOH set annual targets in priority indicators that were included in commitments with the international cooperation (World Bank, HIPC, and PRS) and in performance agreements signed with each SEDES. These performance agreements focused government priorities at all levels and increased transparency and accountability. The main challenges they faced were: (i) a lack of regular monitoring and evaluation; (ii) their complexity (inclusion of a large number of results and process indicators); and (iii) the lack of a clear methodology to set regional targets.

In addition, the government devised various organizational models to address the management difficulties created by the fragmented decentralization. The most recent of these is the new health management model consisting of Local Health Boards (DILOS) and autonomously-managed health networks. Each municipality has its own DILOS, made up of a representative of the MOH (designated through the SEDES), one from the municipal government, and one from organized civil society. This board is responsible for strategic decisionmaking over the outputs expected from the corresponding health network established in the Local Health Plans. The DILOS select the director of the corresponding health network (which may encompass more than one municipality), who is responsible for the day-to-day management of health services.

This new framework brings together the different stakeholders for the shared management of health services and has the potential to improve accountability and the effectiveness of health service delivery at the local level, but it also presents certain risks. For the model to be most effective the MOH should focus on:

- Maintaining and improving the performance agreements signed between the MOH and the SEDES, through a simplification of the included indicators, the development of a transparent methodology for setting targets and the strengthening and institutionalization of a permanent monitoring and evaluation system.
- Developing new instruments to strengthen accountability: Local Health Plans can provide continuity to departmental commitments and take national health priorities to the level of service delivery. The SEDES representative in the DILOS is the key link in bringing the departmental targets to the local level. Mechanisms that provide incentives for compliance with local commitments should also be considered, such as linking the health commitments set in the Local Health Plans to the municipality's access to resources from the Productive and Social Investment Fund (FPS).
- Addressing the challenges presented by the territorial division of the country. In rural areas, this implies the setting up of DILOS and health networks that cover more than one municipality. This has been a challenge in the past. Ways of effectively creating multi-municipal DILOS and networks should be explored; they could consider the creation of transitory municipal unions as set in the respective legislation.

Public Health Insurance

While the Performance Agreements set the stage for a results-based culture, public health insurance (now SUMI) is the government's central strategy to implement national priorities within the decentralized system and give providers the tools and incentives to reach the agreed upon targets. Public health insurance aims to: (i) promote demand by reducing the cost barrier for users and guaranteeing free access to a basic package of benefits, (ii) improve incentives for providers through a fee-for-service payment mechanism, and (iii) strengthen the municipalities' responsibility over financing of non-HR inputs by earmarking public funds received from central tax transfers.

Results show that the public health insurance improved health financing, reinforced national health priorities, promoted demand for primary care and empowered the population for health. Coverage of maternal and child services increased substantially, also in rural and poor municipalities.

Municipalities got more involved in health service management. Yet, the potential of the insurance was not fully exploited, as many municipalities could not fully use health insurance funds in the past because of insufficient infrastructure and personnel (on average, municipalities spent 60 percent of earmarked funds in 2001).

The SUMI, launched by the current government in January 2003, introduced substantial changes. The most important of these is that the SUMI benefit package now includes higher complexity care for mothers and children. This represents an opportunity to cover additional needs and empower the population, given that a universal package for specific population groups is easier to understand than a package only covering partial risks. However, for these additional rights to be guaranteed, the SUMI must ensure corresponding financing. In this respect, the SUMI not only increased the resources earmarked at the municipal level (initially to 7 percent of the central tax transfers to be increased gradually to 10), but also created a National Redistribution Fund (FSN), financed with 10 percent of the Special National Dialogue Account created through the HIPC debt relief initiative. These additional funds are not distributed to municipalities on a per capita basis but are available for municipalities whose own resources are insufficient to cover needs. However, as no detailed cost studies are available, it is uncertain whether existing SUMI funds will be sufficient to cover the promised package and preliminary estimates suggest this is an area to monitor carefully.

Additional to ensuring that the available resources match the services included in the package, an important challenge arising from these changes is linked to equity. It can be expected that rural and poor municipalities will not have access to the additional resources provided by the FSN, and their populations will benefit little from the additional tertiary care services included in the insurance. This is because of the greater cultural and geographic access barriers in these areas. As a result, very few rural municipalities are expected to exhaust their funds earmarked for the SUMI, which under the current rules is a precondition to access the FSN. These additional resources would thus no longer flow towards the poorest municipalities, as originally intended by the National Dialogue Law. While rural populations can receive care in urban hospitals their real access is limited.

A second challenge is a risk of diversion of resources away from national priorities. Tertiary care hospitals are likely to absorb most of the available SUMI funding. Limited incentives for cost-containment and prioritization (due to assured reimbursement by the FSN) could lead to inefficient use of resources in high-cost interventions—primarily for urban middle-class populations—leaving primary care services underfunded. In addition, since the SUMI focuses exclusively on the maternal and child population, it leaves out some interventions targeted to the general population that were previously included (such as consultations for sexual and reproductive health for non-pregnant women, treatment and diagnosis of tuberculosis, and malaria).

Third, while social security facilities have to provide public insurance services (by law), they may have limited incentives to do so. The participation of social security providers in the public insurance addresses the segmentation and improves the equity and efficiency of the system by introducing a degree of economic solidarity between subsectors and taking advantage of social security facilities' excess capacity in the framework of the country's national priorities. Yet, social security providers only partially recover the costs of services provided under the public health insurance, given that personnel and fixed costs are not included in the reimbursement fees. This becomes especially acute for the more costly tertiary care interventions, which are now included in the SUMI, and where social security providers have a comparative advantage over the MOH.

To address these challenges the MOH should implement measures that ensure that the focus on national priorities is preserved, the benefits of the SUMI are effectively provided and guaranteed to all, and the poor rural populations have access to them. Such measures could include:

- Establishing a permanent monitoring system of SUMI financial flows to identify and correct financing inequities and potential under-funding of primary health care services.
- Ensuring sustainable financing of national program interventions no longer covered by the public health insurance and strengthening the focus on health promotion and prevention,

especially related to nutrition (these interventions should be reimbursed by the SUMI in rural areas). In addition, if necessary, the SUMI benefits package should be reviewed in light of national priorities, cost effectiveness and resource availability.

- Giving rural municipalities greater flexibility over the use of SUMI funds and facilitating their access to the FSN. For example, these municipalities could be allowed to charge higher fees for SUMI services. The health networks could use these extra funds to address challenges in health service delivery or create local incentives linked to permanence and performance of rural health workers. In addition, conditions for municipal access to FSN funds should be set for tertiary care (including, for example, audits of municipal health accounts and management changes to improve attendance at first level of care).
- Ensuring access of all citizens to SUMI services, which entails: the effective transport of citizens from poor municipalities to the corresponding reference hospitals (the cost is covered by the SUMI); examining options to promote demand by reimbursing patient costs; and ensuring that Social Security facilities effectively provide SUMI services to the population not included among their direct beneficiaries.
- Strengthening the first level of care (including those services delivered by itinerant health brigades under the EXTENSA program). Improving the quality of primary care facilities will increase the access of the poor an the efficiency of the system as a whole. This entails resolving HR and equipment bottlenecks. One option is to establish a *gatekeeper* (ie. a family doctor). Alternatively, free access to SUMI services may be conditioned upon entering the system at the first level of care.

The Epidemiological Shield

In addition to public health insurance, as part of the 1999 health sector reforms, the Government launched the Epidemiological Shield (ES), which focuses on preventing the country's communicable and vector-borne diseases through centrally-financed programs. The ES main components are: (i) the Extended Program of Immunizations; (ii) a series of stand-alone programs to tackle highly prevalent diseases such as Chagas, malaria, tuberculosis, leishmaniasis, and dengue; and (iii) the establishment of an epidemiological surveillance system. It is estimated that Chagas, malaria, and tuberculosis account for approximately 40 percent of the disease burden in Bolivia. This has significant adverse economic effects on the population, especially the poor, who are at greater risk due to worse housing and working conditions. Economic losses associated with mortality and morbidity due to Chagas, malaria and tuberculosis exceeded 7 percent of GDP in 1998.

The Epidemiological Shield achieved progress in the control of communicable diseases. The coverage and quality of the national Malaria, Chagas and Tuberculosis programs significantly improved over the last four years. Furthermore, national political and financial commitment for these programs increased, which played an important role in their effective implementation and led to the setting of respective targets in international and national health commitments. Remaining challenges include:

- Aligning local health priorities with those set by the national programs. While vertical financing and implementation has avoided the fragmentation of responsibilities, in some instances, low political commitment at the departmental level undermined the execution of the programs. Options to address this challenge include the introduction of non-financial incentives to assure that local authorities meet ES targets and the designation of departmental coordinators that respond to the national level.
- Ensuring coordination between programs. Each ES component is financed and run as a totally independent program, thus ignoring the advantages of combining similar activities. To enhance coordination within the SEDES, regional communicable disease coordinators should be designated that are responsible for the ES as a whole.

- Assuring predictable and reliable financing for national programs. This entails maintaining efforts to protect the expenditures for these programs and greater coordination in donor financing, which could be done through pooling of external resources for the ES as a whole.
- Clarifying the responsibilities of all actors in areas where the national programs overlap with other health reform policies and programs, especially the SUMI and EXTENSA, to avoid duplication of efforts and financing.

Human Resources for Health and EXTENSA

Human resources for health (HRH), and particularly staffing levels, staff distribution, and staff productivity have recently become primary concerns of the ongoing health sector reform. In 2001, Bolivia had 6.6 doctors and 3.4 professional nurses per 10,000 inhabitants, which is about half the Latin American average, but is similar to the health staff per population ratios prevailing in countries with comparable levels of GDP per capita. Half of the MOH's doctors and nurses worked in tertiary care facilities and only 40 percent in primary and secondary health networks.

The Bolivian public health system suffers from substantial staff shortages and geographical imbalances. In 2002, the HIPC debt-relief initiative led to the incorporation of an additional 2,000 doctors and nurses to the public sector. Two-thirds of these were destined to first and second level public facilities, thus reducing overall staffing shortages in these networks by close to 30 percent. This, however, did not resolve absolute shortages for nurses (which remain around 50 percent). Primary and secondary networks now have an absolute surplus of doctors, but these are unequally distributed. In rural networks, average doctor shortages are 5 percent and nurse shortages 60 percent. By contrast, in urban networks, facilities are overstaffed with doctors, while nurse shortages are relatively small.

Second, evidence suggests that HRH spend significant time on non-productive activities. Unexplained absences and strikes are frequent and turnover rates high. In addition, improved organization of training and work could result in significant productivity gains. Efficient staff management, however, remains hampered by the prevailing institutional arrangements. After a decade of decentralization efforts, a mismatch between authority and responsibilities at the various hierarchical levels persists with respect to the administration and management of HRH. Most wage bills are paid by the central government and decisionmaking for recruitment and selection reside at the departmental level. However, until recently, the district director was the person ultimately responsible for reaching health targets within the networks.

Third, the compensation scheme does not include financial incentives linked to staff productivity or working in underserved rural areas. Of the MOH's US$60 million annual payroll, 83 percent goes to basic salaries and employer contributions. The remaining 17 percent is distributed to workers according to a reward system linked to staff seniority, union affiliation, professional specialization, and location. This reward system, however, fosters practice in urban locations by providing incentives for activities primarily required in metropolitan areas such as professional specialization, managerial and research activities. These also discourage commitment to the provision of primary care.

The MOH should deepen its recent efforts in addressing key HRH issues, by:

- Improving the allocation of HRH management and administration tasks between different government levels. To improve effectiveness in the management of HRH and overcome spatial imbalances, in the long run, a system can be envisioned with greater devolution towards the DILOS and stronger accountability. Taking into account the limitations imposed by the political context, this entails that in the short run, the DILOS should be responsible for: (i) allocating HRH within the health network; (ii) participating in the selection of new staff; (iii) controlling and enforcing the presence of HRH at work;

(iv) coordinating training activities for individual health workers; and (v) introducing local incentives. The MOH/SEDES would retain the responsibility and authority for the allocation, hiring and laying off of staff on the short run. This function would be gradually transferred to the DILOS and in a transition period, new staff would be hired at the local level. This transition would require the allocation of resources to the DILOS so that staff would be remunerated at the local level. On the short and long run, the MOH would retain the responsibility for setting the overall remuneration framework.

- Establishing a pro-rural policy environment to redress geographical imbalances in staff allocation. This entails increasing the transparency of HRH administration and management at all government levels and strengthening pro-rural financial incentives. This could be done through a complete revision of the remuneration system. For example, seniority could be given greater weight within the reward structure and an accelerated promotion scheme along the seniority bonus linked to service in rural areas implemented. Alternatively, additional financial incentives could be created on the margin—under local control—that would make basic care and rural areas more attractive, in line with national priorities. Finally, given that financial incentives alone may not be sufficient to attract HRH to rural areas, complementary regulatory measures and nonfinancial incentives should be considered.
- Targeting EXTENSA and HIPC to rural areas. EXTENSA, the national program for the extension of coverage provides a key opportunity to increase the supply of services in remote areas that lack health infrastructure. To ensure the optimal success of this initiative, EXTENSA's mobile brigades should be well targeted and the human resources that conform them selected with the input of the communities they will serve. The community health agents (ASISTES), who will provide the link between the health brigades and the communities, should be selected by local indigenous organizations. EXTENSA's itinerant health brigades should be complemented by an increase in personnel in rural health facilities. This has been partially achieved under HIPC, but could be improved through the reallocation of HIPC staff.

Indigenous Empowerment and an Intercultural Approach to Health

The indigenous population, which represents a majority in Bolivia, suffers from political and social exclusion. Indigenous people have worse health indicators and lower access to formal health services. On average, 50 percent of indigenous women give birth at home, compared with 20 percent of non-indigenous women. In parallel to the formal health sector, the indigenous population uses its own traditional doctors, practices and beliefs. Factors that explain the inequities in health outcomes between the non-indigenous and the indigenous populations include economic, geographic, and cultural access barriers. The health reforms primarily addressed the economic access barriers by implementing the public health insurance and more recently, the geographic barriers by increasing the number of health workers in rural areas.

In the last few years, however, the government developed various initiatives to reduce cultural barriers of access to health services and open democratic participation spaces for indigenous people. These include: (i) strengthening bilateral forums for dialogue between the MOH and indigenous groups; (ii) recognizing the intercultural dimension of health in the SUMI law; (iii) signing agreements with the principal indigenous organizations (CSUTCB and CIDOB) on the accreditation of traditional doctors; and (iv) involving indigenous groups in the selection of community agents for the EXTENSA program. Many of these initiatives, however, have so far not been fully implemented. To advance in this area and reduce the gaps in health outcomes and access to services between indigenous and non-indigenous people, the MOH should consider:

- Progressing on the cultural adaptation of services. This is critical to expand coverage in rural areas. The implementation of the Pregnant Woman's Rights Charter could provide an important step in this direction. This entails empowering women to demand the rights included in the Charter (for example, choosing the position for childbirth and asking to be given the placenta) and training health personnel. Another option is to reimburse traditional midwifes when they refer pregnant women to health facilities so as to improve the relationship between them and the public health sector. In addition, the incorporation of traditional medicine to the system could be explored, for example through the accreditation of traditional doctors and/or piloting the reimbursement of traditional healing practices.
- Giving indigenous populations a greater voice in the definition of health policies. At the regional and national levels, arenas for consultation and dialogue between indigenous organizations and the MOH should be strengthened. At the local level, indigenous peoples representation in the DILOS through their territorial organizations should be encouraged.

CHAPTER 1

HEALTH OUTCOMES AND COVERAGE IN THE CONTEXT OF DECENTRALIZATION

Bolivia has made progress in health results and equity in the last decade, thanks to the implementation of a series of health policies directed primarily at reducing maternal and infant mortality. These policies are: (i) the introduction of performance agreements that set yearly regional targets for priority indicators, (ii) the implementation of a public health insurance for maternal and child interventions, (iii) the strengthening of vertically financed public health programs; (iv) an increase in the health sector's workforce in the context of the HIPC debt relief initiative; and (v) initiatives promoting indigenous empowerment and an intercultural approach to health.

The purpose of this paper is to analyze these health reform policies, draw lessons from their implementation, discuss policy and structural gaps and provide specific recommendations in the context of the latest policy developments. We focus on the health reform policies implemented by the government in recent years to reduce maternal and child mortality and morbidity from the country's main communicable diseases.[2]

In this first chapter, we present the context in which the health reforms were launched, in terms of health status and general socioeconomic policies. We then analyze the progress in coverage of key health services that accompanied the implementation of the health reform policies. Considering the lack of availability of recent DHS data to assess progress in health outcomes, we base our analysis primarily on administrative data[3] and available surveys and focus on coverage indicators. Furthermore, data availability does not allow an assessment of attribution of the

2. A separate study led by the IADB is underway to look at issues surrounding social security in health.

3. The National Health Information System (SNIS), which is the main source of administrative data, has a margin of error because of underreporting, mainly by private facilities and practitioners and to a lesser extent by NGOs and Health Insurance Funds. There may also be a degree of over reporting or wrong classification, linked to higher public insurance reimbursement fees or to ensure compliance with targets set in the performance agreements.

observed progress to each health reform policy. Rather, we assess the links between the observed improvements in coverage and the entire set of health reform policies. Finally, we present preliminary evidence of improvements in health outcomes based on the 2001 national population survey.

Bolivia is a lower middle-income country with a GDP per capita of US$980, for a population of 8 million inhabitants spread over a large territory (over 1 million square kilometers). Life expectancy is 63 years and the adult illiteracy rate 14 percent. While poverty levels dropped significantly in the last decade, 59 percent of the population (mainly rural and indigenous) still lived below the poverty line in 2001 (compared with 71 percent in 1992). In the last few years, Bolivia has been faced with stagnant growth, increasing fiscal pressures, rising unemployment (now over 10 percent) and the continuing prospect of economic or natural exogenous shocks, thus increasing pressures on its already difficult socioeconomic situation.

Measured against what would be expected from its level of income and education, Bolivia has a history of unsatisfactory health outcomes and poor maternal and infant mortality indicators. Infant mortality was estimated at 75 per 1000 live births in 1994 and maternal mortality was equally high, estimated at 390 per 100,000 live births for the 1984–94 period (DHS 1994). By 1998, infant mortality had dropped to 67 deaths per 1,000 live births (DHS 1998). This, however, is still much higher than other Latin American countries with comparable socioeconomic and national health expenditure indicators, such as Nicaragua and Honduras (see Table 1.1). In addition, these average figures conceal large disparities between rural and urban areas and between income quintiles. In 1998, the infant mortality rate was 50 percent higher in rural than in urban areas. Similarly, out of 1,000 live births, 147 children were expected to die before the age of 5 in the poorest 20 percent of the population, compared with 32 in the richest 20 percent (Gwatkin 2000).

Most maternal and child deaths are avoidable through prevention and timely interventions, as evidenced by the underlying structure of mortality. In 1994, the main causes of maternal mortality were hemorrhage, accounting for 39 percent of deaths, eclampsia (21 percent), abortions (10 percent) and infections (4 percent). In the case of children under 5, diarrheas and pneumonias accounted for 56 percent of deaths, perinatal causes were responsible for an additional 16 percent and immunopreventable diseases for 3 percent (MSPS 2000; PAHO/WHO 1997). The country's

TABLE 1.1: COMPARATIVE INDICATORS: LATIN AMERICA

	MMR	IMR	GDP per capita (PPP US$)	National health expenditure per capita (US$)	Literacy rate	Life expectancy at birth	Total fertility rate
	1998/99*	1998/99	1999	1998/99	2000	2002	2002
Bolivia	390	67	2.355	53	86	63.5	3.9
Peru	185	33	4.622	117	90	69.8	2.6
Nicaragua	118	45	2.279	41	64	69.3	3.9
Paraguay	114	19	4.384	165	93	70.7	3.8
Guatemala	111	37	3.674	94	69	65.6	4.4
Honduras	108	42	2.34	59	72	70.5	3.7
Ecuador	74	30	2.994	65	92	70.5	2.8
Brazil	68	33	7.037	271	85	67.9	2.1
Mexico	51	15	8.297	221	91	73.0	2.5

*MMR for Bolivia is from 1994.
Source: WHO.

high level of malnutrition, which affects one quarter of children under 3 years, and anemia, which affects two thirds of these children and a quarter of pregnant women contribute to the high mortality rates. Another related factor is the high fertility rate and low access to reproductive health services, especially among poor women: for the poorest 20 percent of the population, modern contraceptive use is around 7 percent, the fertility rate 7.4, and 84 percent of births occur at home (DHS 1998).

In addition to high maternal and child mortality rates, Bolivia has an incidence of malaria, tuberculosis and Chagas well above Latin American averages. It has been estimated that these three diseases account for 40 percent of the disease burden in Bolivia and are responsible for economic losses that correspond to 7 percent of GDP (Medici and Bravo 1999). In the case of malaria, 75 percent of the Bolivian territory is endemic and 40 percent of the population at risk. The incidence of tuberculosis is among the highest in the region (105 per 100,000 inhabitants in 2001) and more than twice the average incidence for Latin America. Chagas disease is endemic in 60 percent of the territory and is the cause of 13 percent of deaths in the adult population (see Chapter 5 for more details).

Government policies beyond the health sector and the country's socioeconomic context influenced these poor health outcomes. First, the structural adjustment policies that followed the hyperinflation period of the 1980s led to a contraction in public investment in the health sector. Second, the decentralization of Bolivia's government structure in 1994 was accompanied by a lack of definition over priorities, outputs and outcomes for the health sector, which affected health coverage and public health expenditures. Decentralization improved equity in the distribution of resources, by establishing the automatic redistribution of 20 percent of central government revenues to the country's 314 municipalities on a per capita basis. This was the first time that poor municipalities had access and control over the use of these funds. In the health sector, the government transferred the ownership of health facilities (health centers and hospitals) to municipalities, while it delegated the responsibility for the management of the public health system's human resources to the Departmental Health Services (the Ministry of Health's regional offices). As a consequence of this "partial devolution" and consequent lack of definition over accountability, national health expenditures remained stagnant and coverage levels of key services (such as vaccines) dropped.

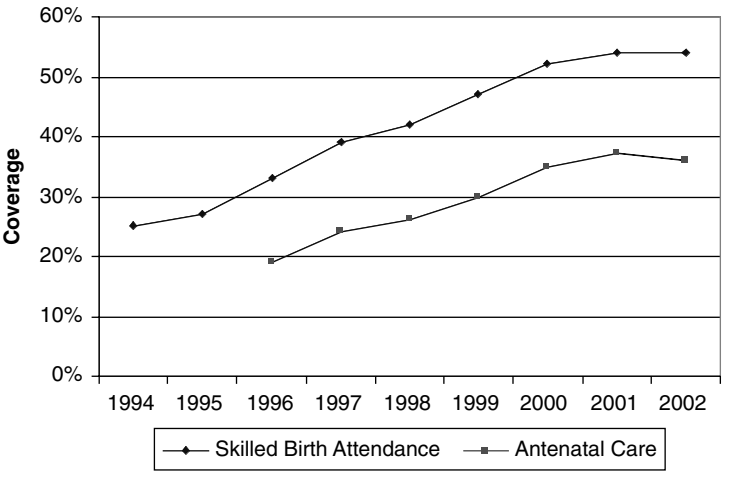
In recent years, however, the Government of Bolivia, with the support of the international donor community, made important efforts to improve health outcomes, and especially to reduce the infant and maternal mortality. To do so, the Ministry of Health (MOH) launched a health reform that consisted of: a public health insurance for basic mother and child interventions, performance agreements that set yearly regional targets for priority indicators, and a revamping of the vertically financed public health programs directed at the country's main endemic diseases. More recently, these were complemented with an increase in the public sector's health workforce and initiatives directed at indigenous peoples.

As a result of this set of policies, the coverage of priority maternal and child interventions increased substantially. According to MOH administrative data, the percentage of births attended by skilled personnel more than doubled, from as low as 25 percent in 1994 to 54 percent in 2002; this represents an additional 80,000 institutional deliveries in 8 years. Findings from continuous household surveys (INE, MECOVI 2001) suggest that current coverage may be even higher, reaching 61 percent.[4] At the same time, while in 1996 only 19 percent of pregnant women had one antenatal care visit, in 2002, this percentage had risen to 36 percent[5] (see Figure 1.1). Similarly, between 1994 and 2002, the coverage of pneumonias and acute diarrheas in children

4. While the National Health Information System (SNIS) reports 156,744 births attended by skilled personnel in 2001, the MECOVI reports 146,194. The higher coverage figure of the latter is due to the use of a smaller denominator for expected live births.

5. This indicator is defined as: women with one antenatal care visit/expected number of pregnancies.

FIGURE 1.1: COVERAGE OF SKILLED BIRTH ATTENDANCE AND ANTENATAL CARE 1994–2002



Source: MOH-SNIS 1994–2002.

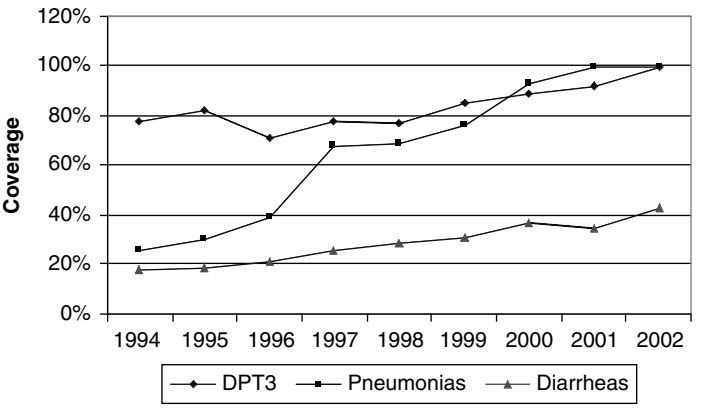
under 5 increased to 100 percent[6] and 43 percent, respectively (see Figure 1.2). While the vaccination of children under one year of age with the third dose of the DPT vaccine dropped to as low as 71 percent in 1996, it recovered with the reforms and, according to administrative data, reached 100 percent in 2001.[7] This achievement resulted from the strengthening of the country's expanded program of immunizations (see Chapter 5).

The coverage of priority interventions increased not only in urban municipalities, but also in rural ones, according to administrative data. This finding holds when municipalities are classified according to average income, predominance of indigenous population, or existence of a secondary level health facility. Between 1996 and 2001, while average skilled birth attendance rose from 37 percent to 60 percent in non-indigenous municipalities, it rose from 18 percent to 36 percent in indigenous ones (see Figure 1.3). This finding and a disaggregate analysis performed at the municipal level suggests that the reform policies did reach the poor, rural and indigenous municipalities, including those that lack secondary level facilities.

6. The observed increase in the number of cases attended to in health facilities might be a reflection of an increase in incidence but not necessarily an increase in coverage. But this is not reflected in the indicator because the MOH uses a constant incidence of 10 percent to calculate the coverage of pneumonias in children under 5 years. Another issue relates to the incentives within the fee-for-service reimbursement mechanism of the public insurance. Because the fees are higher for pneumonias as for acute respiratory infections (ARIs), there is an incentive to report simple respiratory infections as pneumonias. By comparison, the MECOVI 2001 reports that 54 percent of acute respiratory diseases in children under 5 were attended to in health care facilities (but this figure includes both cases of pneumonias and ARIs).

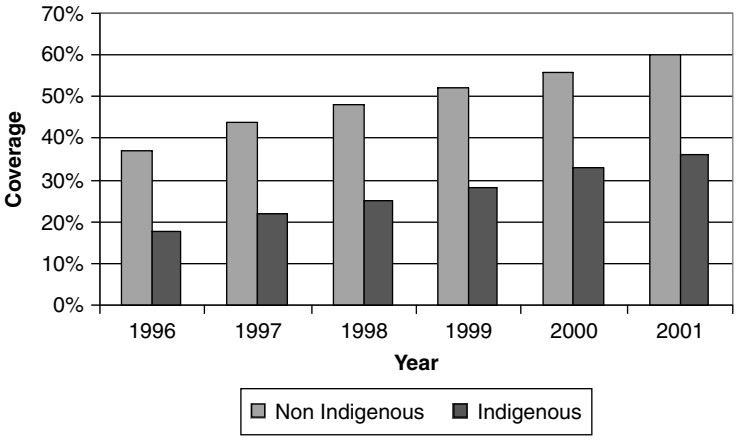
7. The MECOVI (1999, 2000, 2001), however, shows that on average, 65 percent of children under 3 have been vaccinated with DPT3. Methodological issues might explain these differences. The survey is based on respondent recollection (i.e., asking mothers whether the child received the third dose of the vaccine and initially asking to be shown the corresponding vaccination certificate), which considering low levels of education, especially in rural areas, may lead to underreporting. However it should also be noted that the SNIS reported that 233,478 third doses of Pentavalent vaccine were given to children under 1 in 2001. But the census estimates from 2001 show that there were only 203,850 children under 1 in the country, thus pointing to a margin of error for administrative vaccination data.

FIGURE 1.2: COVERAGE OF DPT3, PNEUMONIAS AND ACUTE DIARRHEAL DISEASES 1994–2002



Source: MOH-SNIS 1994–2002.

FIGURE 1.3: PERCENTAGE OF BIRTHS ATTENDED BY SKILLED PERSONNEL



Source: SNIS and URS-MOH 2002.

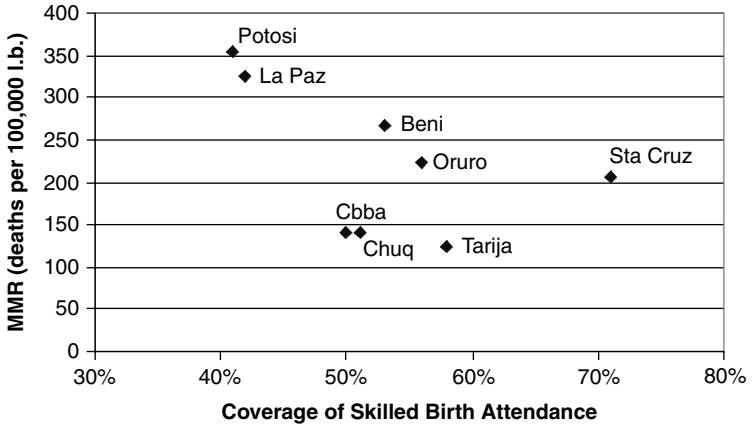
Preliminary data suggest that the observed increase in coverage in priority interventions resulted in a significant decrease in maternal mortality. A final assessment of the impact of the reforms on mortality is not yet possible due to the lack of availability of comparable maternal and infant mortality data (the results from the next DHS are expected by early 2004). Yet, the 2001 post-census survey found that maternal mortality had fallen to 234 deaths per 100,000 live births, (compared with the 1994 DHS estimate of 390 deaths per 100,000 live births). The different methodologies used to compute this more recent estimate should be kept in mind when drawing comparisons. While the post-census survey estimates the deaths that occurred during the year 2000, the DHS estimates the deaths over the period 1989–1994.

Table 1.2: Maternal Mortality Rate, by Geographic Region* (maternal deaths per 100,000 live births)

	Altiplano	Valles	Llanos	Bolivia
ENDSA 94 (Corresponds to period 89–94)	602	293	110	**390**
Post-Census Survey 2002 (Corresponds to year 2000)	320	147	206	**234**

Source: INE: ENDSA 1994 and Post-Census Survey 2000.
*The Altiplano region includes the departments of La Paz, Potosi, and Oruro, the Valles region (Cochabamba, Chuquisaca, and Tarija), and the Llanos (Santa Cruz, Beni, and Pando).

Figure 1.4: MMR vs Skilled Birth Attendance Year 2000



Source: SNIS 2000 and INE 2003.
Note: Pando is not included in the analysis because the survey reports no deaths in 2000.

The Altiplano is still the geographical zone with the highest maternal mortality rate, but the results from the post-census survey suggest that the gap in maternal mortality between the three regions decreased in the last decade. While in 1994, the mortality in the Altiplano was 5.5 times that in the Llanos, the relationship between the region with the highest and the region with the lowest maternal mortality rate is now 2.2 according to the survey (see Table 1.2). In addition, the departments with the lowest MMR are also those that have achieved the highest coverage of skilled birth attendance in 2000 (see Figure 1.4.).

There is evidence linking these achievements in coverage and health outcomes to the health reform policies implemented by the government and especially to the improved access made possible by the public health insurance. First, an analysis of the determinants of access to health services suggests that the implementation of the public health insurance has increased the probability that women receive skilled birth attendance. The most important factors determining whether a woman will receive institutional care for childbirth are: (i) the area of residence (living in an urban area increases the probability of skilled birth attendance by 27 percent); (ii) whether the

TABLE 1.3: MATERNAL MORTALITY RATE AND USE OF SBS SERVICES, BY REGIONS (MATERNAL DEATHS PER 100,000 LIVE BIRTHS)

	Altiplano	Llanos	Valles	Bolivia
MMR 2000 (Post-Censal Survey)	320	206	147	234
Percentage of women who have used the SBS (2000)	29%	35%	48%	37%

Source: Lugo and Gutierrez (2000) and INE (2003).

head of household is indigenous (reduces the probability by 20 percent); and (iii) the knowledge that the Basic Health Insurance offers free services (increases the probability by 16 percent). Insurance coverage (other than public health insurance) comes only fourth and increases the probability of receiving skilled birth attendance by 15 percent (see Annex C). By contrast, in the case of disease or accident, the main determinant that influences whether or not an individual will be attended in a health facility is whether or not s/he has health insurance coverage (other than the public health insurance). This increases the probability of receiving care for illness or accidents by 23 percent.

Second, a survey on the knowledge and use of public insurance services among adult women throughout the country suggests a parallel between the use of SBS and maternal mortality by regions. Overall, 37 percent of women report that they have used the public health insurance services. The region with the greatest percentage of women who have used the public health insurance services (Valles) is the one with the lowest maternal mortality rate, while the region with the lowest percentage of women having used the SBS, is the one with the highest maternal mortality rate (see Table 1.3).

In addition, regardless of trends in economic growth, the infant mortality rate has seen its fastest rate of decline since the 1960s in the last decade. In the 1960s, while the average annual real GDP growth was 3 percent, reductions in infant mortality were slow (0.5 percent per year). During the 1970s, the country grew faster and the IMR started to decrease at a more rapid rate (2.2 percent). During the 1980s, the country suffered from an economic crisis and hyperinflation resulting in practically no growth in real terms. The IMR, however seemed not to be affected by this economic stagnation and continued to drop at the rate of the previous decade. Finally, between 1990 and 1998,[8] economic growth picked up again, at the same rate as in the 1970s, but the IMR dropped more rapidly than in the 1970s, at a rate of decrease of 2.9 percent per year (see Table 1.4). Comparable data is not yet available to gauge whether the most recent economic slowdown (between 1998 and 2002) has had an impact on the rate of reduction of the infant mortality rate, or whether the health reforms will have upheld the observed progress.

In conclusion, since the MOH launched a set of comprehensive health reform policies in the mid 1990s, the coverage of priority interventions increased significantly throughout the country. Preliminary data suggest that this increase in coverage has translated into a significant drop in infant and maternal mortality. However, two concerns arise: (i) in recent years, the rate of increase in coverage has been tapering off; and (ii) the equity gap between the urban and rural,

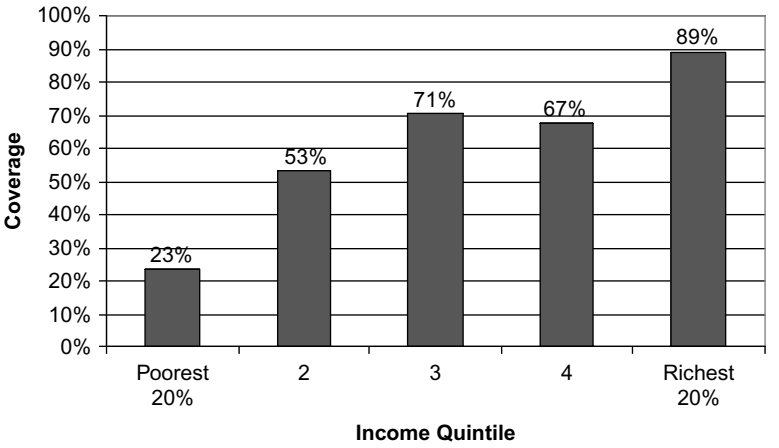
8. The analysis stops in 1998, given that is the latest year for which DHS IMR data is available. If we were to extend it to the whole decade, average GDP growth would drop to 4.5 percent, while the average drop in IMR would increase to 3.2 percent when using UNICEF's IMR estimate (59 deaths per 1,000 live births in 2000) or drop to 2.4 percent when using the estimate from the census (66 deaths per 1,000 live births in 2000). In either case, the conclusion that this is the decade with the fastest drop in IMR despite a slowdown in economic growth holds.

Table 1.4: Trends in Economic Growth and Infant Mortality Rate (percentages, annual average)

	1960–70	1970–80	1980–90	1990–98
Real GDP growth	3.0	5.0	0.1	5.1
Drop in IMR	–0.5	–2.2	–2.2	–2.9

Source: World Bank Statistical Information Management & Analysis (SIMA).

Figure 1.5: Skilled Birth Attendance by Income Quintile—2001



Source: INE, MECOVI 2001.

the indigenous and non-indigenous, the rich and poor remains high (see Figure 1.5 and Annex B). As mentioned above, a simple regression analysis shows that, controlling for income and other characteristics, the probability of having institutional attendance at childbirth is 27 percent lower if the family lives in a rural area and is 20 percent lower if the head of household is indigenous (see Annex C).

Against this background, in the last year, the new government has deepened some of the previous reforms and launched new ones. These include the Universal Maternal and Child Insurance (SUMI—which builds on the previous public health insurances), EXTENSA, a program for the extension of coverage to rural areas, the implementation of a new management model for health centered on local health boards (DILOS), and efforts to improve the policy dialogue with indigenous peoples. While these new initiatives clearly increase the direct benefits to the population (for example in the case of the SUMI), they have come under severe strain, in part due to the additional efforts they require from municipalities and health workers (in terms of time and financing), in part due to the rising tensions linked to the country's economic crisis and recent social conflicts. These tensions require new answers that will maintain and consolidate the initiated reforms and their focus on providing services to the poor, while helping the government reduce social tensions.

We now turn to an analysis of the reforms that led to the improvements in health coverage presented in this chapter. First, Chapter 2 presents the structure of the Bolivian health sector and the national health expenditures. Chapter 3 then discusses the different management models implemented in the health sector in the framework of decentralization and the performance agreements introduced to clarify accountability within the system. Chapter 4 turns to the centerpiece of the reforms, namely the public health insurance, and discusses the implications of the recent changes introduced with the SUMI in light of the previous experiences (with the *Seguro Nacional de Maternidad y Niñez* and the *Seguro Básico de Salud*). Chapters 5 discusses the vertical public health programs for the prevention of the country's main communicable and vector-borne diseases. Chapters 6 and 7 turn to key areas of more recent change, namely those related to human resources for health and the empowerment of indigenous peoples, respectively. Finally, Chapter 8 provides overall conclusions and recommendations from the analysis.

CHAPTER 2

FINANCING AND USE OF SERVICES

In this chapter, we look at the structure and financing of the health sector in Bolivia. We analyze national health expenditures, particularly the trends in public health expenditures over the past decade, the cross-subsidies that exist between the public sector and social security in health, and the distribution of expenditures between different income quintiles.

The public sector[9] is responsible for the health needs of the majority of the Bolivian population. Only about 20 percent of the population is covered for health care through social security, which consists of about 15 Health Insurance Funds (*Cajas de Salud*), financed through compulsory employer and worker contributions.[10] These Health Insurance Funds cover mainly urban and higher income households: in rural areas and for the poorest income quintiles, coverage is below 10 percent. In addition, about 4 percent of the population has a private insurance. The rest (about 75 percent of the population) seek care in the public sector, NGO, or Church facilities. In this context, for the large majority of the population, financial risk protection against ill health comes exclusively from the recently implemented public health insurance (and was inexistent before its inception in the mid-1990s).

National health expenditures in Bolivia account for 4.9 percent of GDP (in 2000), equivalent to US$427 million.[11] Out of these expenditures, Health Insurance Funds are responsible for the greatest share (37 percent of the total, equivalent to US$ 157 million),[12] followed by households' out-of-pocket expenditures, which accounts for 30 percent of the total (US$127 million).[13]

9. By public sector, we mean the governmental health facilities. This concept excludes social health insurance.

10. The 2000 Permanent Household Survey (MECOVI) reports that 17 percent of the population is affiliated to social security health insurance funds, while the INASES (Instituto Nacional de Seguros de Salud) reports 28 percent (equivalent to 2.6 million beneficiaries).

11. Preliminary data from Cárdenas, Esquivel, and Ávila (2001).

12. This figures includes the private health insurance funds (*Cajas Bancarias*).

13. Preliminary data from the Permanent Household Survey (MECOVI) indicates that this figure could be even higher.

TABLE 2.1: NATIONAL HEALTH EXPENDITURES 2000

Agents	Millions of US$	% of total expenditures	% Population covered*
Public Sector	113.0	26	65–70
Health Insurance Funds	156.5	37	20
Private Insurance	16.5	4	5
NGOs	13.7	3	5–10
Households	127.4	30	
Total	**427.1**	**100**	

*These figures are approximate and in the case of the public sector and NGOs reflect use rather than coverage.
Source: National Health Accounts. Cardenas, Esquivel and Avila (2001); INE, MECOVI 2000.

The public sector spends 26 percent of the total (US$113 million or 1.3 percent of GDP), one fifth of which comes from external donors. Finally, private insurers and NGOs (which receive half their financing from external sources) together account for the remaining 7 percent or US$30 million (Cárdenas 2000; see Table 2.1 and Annex A for more details).

There is an imbalance between different subsectors' health spending and their respective population coverage. The public sector is responsible for providing services to between 65 and 70 percent of the population. However, public sector spending accounts for only one fourth of the total. The Health Insurance Funds, on the other hand, cover barely 20 percent of the population, but spend 37 percent of the total. This means that the public sector spends US$20 per capita, while on average, Health Insurance Funds spend close to US$100 per beneficiary.

In addition, despite the recent introduction of the public health insurance schemes (discussed in detail in Chapter 4), households still account for almost a third of national health expenditures. Between 1999 and 2001, about 10 percent of households destined more than 10 percent of their monthly expenditures to health and 1.2 percent of households, spent more than half of their monthly expenditures on health.[14] Three quarters of this was spent on the purchase of pharmaceuticals (in drugstores). This alone represented 20 percent of national health expenditures.

Public Health Expenditures

The central government (including the MOH and its Departmental Administrations, the SEDES) controls most of the public health expenditures (about 80 percent). This is because the financing of human resources, which accounts for most of the public health budget, comes from the central level. Municipalities, on the other hand, account for only 18 percent of public health expenditures, despite the fact that they finance the variable costs of the public health insurance. Finally, the remaining 2 percent come from the Social Investment Fund (FPS) and other public entities.

Central public health expenditures (including the MOH and SEDES) increased in real terms in the last decade, at an average rate of 4.5 percent per year.[15] Between 1990 and 1994, MOH expenditures experienced rapid growth; but between 1994 and 1998, which coincided with the country's decentralization, MOH spending dropped again in real terms, practically to its 1991 level. In 1998, expenditure growth resumed, at an average rate of 14 percent per year (see Figure 2.1). As a result, central public health expenditures reached US$100 million in 2001.

14. Encuesta de Hogares MECOVI 2000.

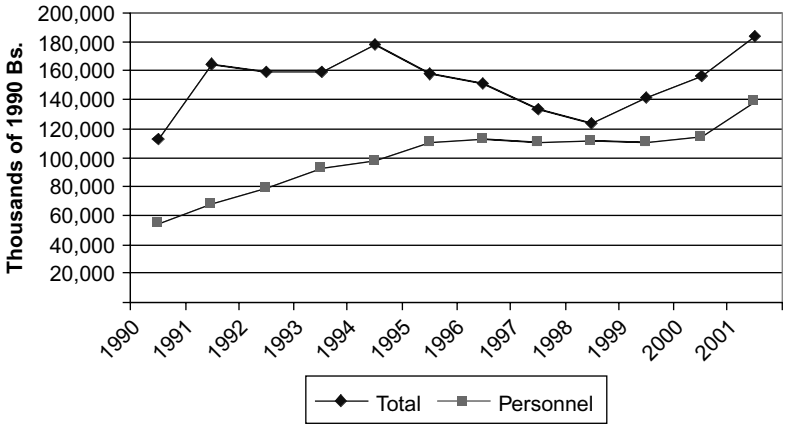
15. The analysis does not include the pensions to widows of the Chaco war, which were paid by the MOH at the beginning of the 1990s.

TABLE 2.2: PUBLIC HEALTH EXPENDITURES (EXCLUDES SOCIAL SECURITY)

	(Percentages)		
	1990–1994	**1995–1998**	**1999–2001**
Total Expenditures/GDP	1.00	0.80	0.80
Salaries/Total Expenditures	51.40	79.50	81.10
Investment/Total Expenditures	14.60	5.80	6.00

Source: Cardenas et al, 2000 and 2001. National Health Accounts.

FIGURE 2.1: CENTRAL PUBLIC HEALTH EXPENDITURES 1990–2001



Source: Cardenas, 2000 and 2001. National Health Accounts.

The sustained increase in spending on salaries, observed throughout the decade, explains most of this rapid growth in public expenditures. In the last few years (1999–2001), salaries accounted for more than 80 percent of total spending, and investment spending fell to 6 percent (see Table 2.2). The real wage bill doubled between 1990 and 1995, remained stable between 1995 and 1999, and increased another 25 percent between 1999 and 2001. This increase is due to an increase in the number of personnel employed and, to a lesser extent, to an increase in the real salary level of MOH staff. Between 1994 and 2001, the number of doctors and nurses working for the MOH increased by 43 percent. At the same time, their basic salaries increased between 41 percent (for professional nurses) and 58 percent (for auxiliary nurses), in real terms.

Ministry of Health spending on inputs and drugs is barely US$4 million per year, which is complemented by an additional US$5 million from municipal financing of public health insurance inputs. This brings the total to US$9 million, which is less than 10 percent of total public health expenditures and corresponds to just over US$1 per inhabitant spent on drugs and other inputs. This low priority placed on drugs and other inputs by the national government limits the effectiveness of health services and shifts the responsibility for their purchase onto households.

Social Security and Cross-Subsidies

Among the 15 public and private Health Insurance Funds that make up the social security system for health, most of the expenditures (and beneficiaries) are concentrated in the *Caja Nacional de Salud*. The *Caja Nacional de Salud* covers 83 percent of the social security health insurance beneficiaries and accounts for two-thirds of the expenditures of this subsector. Some of the other smaller Health Insurance Funds, (*Universitaria, Militar*, *CORDES*, and *Caminos*) spend six times as much per beneficiary as the *Caja Nacional de Salud*.

The cross-subsidies between the Health Insurance Funds (mainly the *Caja Nacional de Salud*) and the public sector are multiple and complex, with an unclear net direction. The Health Insurance Funds and the public sector each own and run their own facilities. Yet, very often, the beneficiaries of one of these subsectors seek care in facilities run by the other subsector. This is especially the case for primary care in rural areas, where the Health Insurance Funds don't have any facilities and their beneficiaries therefore seek care in the public sector. In total, it is estimated that 18 percent of public sector interventions go to Health Insurance Fund beneficiaries. In the case of deliveries, 45 percent of pregnant women affiliated to the Health Insurance Funds have their deliveries in public sector facilities. A rough estimate suggests that the annual subsidy from the public sector to the Health Insurance Funds is in the order of US$18 million.

On the other hand, the Health Insurance Funds must deliver the package of interventions included in the public health insurance to the whole population (not only to their direct affiliates). They recover only a fraction of the total cost of these services (since the reimbursement fees cover mainly inputs and drugs). Yet, this subsidy (from *Cajas* to the public sector) is minimal, as evidenced by the fact that less than 2 percent of *Cajas* services go to the uninsured population; the Health Insurance Funds attend about 2,000 deliveries of non-beneficiaries (under the public health insurance) per year. By comparison, the MOH attends between 10,000 and 12,000 deliveries of insured women per year. Furthermore, the *Cajas* have excess capacity which means that a large portion of these additional costs is fixed (HR, infrastructure); average bed occupancy rates in maternity services are 67 percent in Health Insurance Fund hospitals (see Table 2.3).

In addition, by law, the Health Insurance Funds must contribute 5 percent of their total income to the national government as a subsidy for public health interventions. This corresponds to about US$8.5 million.[16] However, the Health Insurance Funds don't always fully meet this commitment and similarly, the national government does not always pay the contributions it owes the *Cajas*, as a public employer.

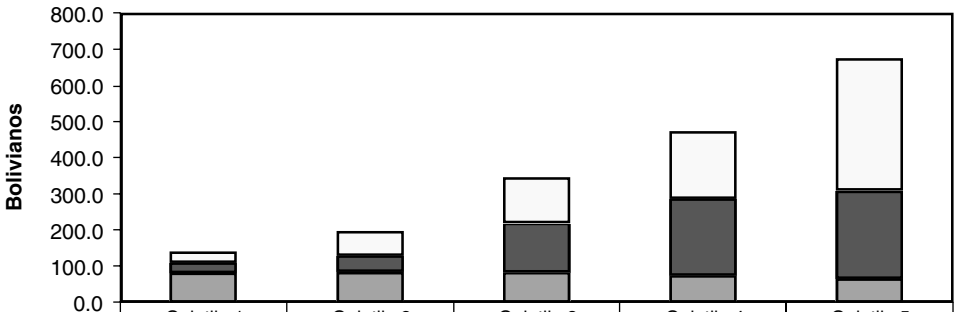
TABLE 2.3: BED OCCUPANCY RATES AND AVERAGE LENGTHS OF STAY (2001)

	Public Sector Hospitals	Health Insurance Fund Hospitals
Bed Occupancy rates (maternity)	58%	67%
Bed Occupancy rates (Other Services)	52%	74%
Average length of stay (days)	4.58	6.67

Source: SNIS 2001.

16. Year 2000, including all public Health Insurance Funds (*Cajas*).

FIGURE 2.2: HEALTH EXPENDITURE PER CAPITA BY INCOME QUINTILES 1999



	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Private	30.9	66.5	127.3	186.5	366.6
Social Insurance	30.5	45.5	136.9	214.1	242.8
Public Exp.	80.3	84.4	81.9	73.1	65.4

Source: Based on INE 1999 (MECOVI) and Cárdenas (2000).

Distributional Impact of Health Expenditures

Total health expenditure per capita in the richest 20 percent of the population is five times that in the poorest 20 percent (see Figure 2.2). This is because richer households spend much more on health per capita than poorer households. Second, Health Insurance Funds spend much more on higher income populations than on poorer ones. This is a reflection of the fact that most of their affiliates are from the higher income quintiles. In addition, their spending is concentrated in these quintiles even more than their beneficiary base would suggest: while 19 percent of Cajas beneficiaries are from the two lowest income quintile of the population, they receive less than 11 percent of *Cajas* services. Finally, public health expenditures do not balance out these differences in part because they represent a much lower share of the total, in part because they are only minimally progressively distributed. This is because the population from all quintiles, including the higher income ones, use public hospitals. In spite of this limited targeting towards the poor, it should be noted that public expenditures constitute the fundamental basis for the financing of health for the poor.

An analysis of expenditures differentiated between indigenous and non indigenous, or urban and rural populations shows similar though not as pronounced trends. Private and Social Insurance Fund expenditures are also higher in non indigenous and in urban populations, while public expenditures are only slightly higher for the rural and indigenous, without balancing the previous inequalities.

CHAPTER 3

CLARIFYING TARGETS AND ACCOUNTABILITY IN THE CONTEXT OF DECENTRALIZATION

In this chapter, we briefly describe the changes decentralization introduced for the health sector and the different institutional arrangements set up at the local level to manage health networks within the decentralized context. We then analyze the instruments the MOH developed to improve accountability and introduce a focus on results within the decentralized context. Finally, we discuss the institutionalization of the government's focus on results in the context of the new management model introduced by the actual government.

Decentralization

The decentralization of Bolivia's government structure had a significant impact on the organization of health service delivery in the country. First, the 1994 decentralization (enacted through the Law of Popular Participation and the Law of Administrative Decentralization), made funds available at the local level, by instituting the per capita distribution of 20 percent of central government tax revenues to the country's 314 municipal governments. This significantly improved equity since it was the first time that rural municipalities had access to these funds. Second, in the health sector, this transfer of funds was accompanied by the decentralization to municipalities of the ownership of health facilities and the responsibility over the financing of the equipment (including maintenance) and of basic inputs.

The public sector's human resources for health (HRH), on the other hand, were not decentralized to the municipalities. This was the subject of debate both during the 1994 decentralization, and again in 2000, in the framework of the National Dialogue and the resulting legislation of the use of funds released through the HIPC II debt-relief initiative. In both cases, the proposal to fully transfer the responsibility for HRH financing and management (including hiring and firing) to municipalities was rejected. In 1994, the debate on decentralization occurred primarily between different groups within the government with conflicting views on the subject, and the intermediate solution to deconcentrate HRH to MOH's regional administrations (the Departmental Health Services-SEDES) was adopted.

In 2000, the debate involved more actors, but the decentralization of HRH to municipalities was again rejected. In the case of the third level of care, an alternative proposal to decentralize HRH directly to the hospitals was also put forward. Main proponents for the decentralization of HRH came from within the government, with the support from small municipalities. The large municipalities, however, most of whom were politically opposed to the government coalition parties, strongly opposed decentralization, fearing that it would bring them additional responsibilities without the necessary accompanying resources. They were backed by the unions and most professional organizations who saw in decentralization a weakening of their central bargaining power.

As a result, the health sector was never fully decentralized to municipal governments. Since 1994, the responsibility for the management of human resources lies with the MOH's regional administrations. As a result, the responsibility over the production factors (labor, capital and inputs) is split between different actors: the SEDES is responsible for human resources for health and the municipality for financing basic inputs and investing and maintaining its health infrastructure.

The government devised various organizational models to address the potential management difficulties created by this fragmented decentralization. Initially, the split of responsibilities was to be solved by the municipal DILOS (Local Health Board), a body made up of a representative of the municipal government, a representative of the health sector, and a representative of civil society. The DILOS brought together the different stakeholders for the "shared management" of health services. In 1999, the DILOS was replaced by the Territorial Health Councils, made up essentially of the same actors, but whose role was now restricted to one of consultation, with no decision power over resources in health. Instead, the operational management of health service networks was transferred to the health districts, the local administrations of the MOH. As a consequence, the role of the municipality became restricted to the financing of basic inputs (through the public health insurance) and investing in infrastructure.

In this context, while on one hand, decentralization brought health services closer to the population and gave the municipalities a greater role in their financing and provision, on the other hand, the fragmentation of responsibilities and the lack of effective institutional arrangements to resolve this created difficulties with respect to the implementation of national priorities at the local level. In addition, responsibilities and accountability were unclear, thus hampering the efficient and transparent management of facilities and human resources.

The MOH responded to these challenges by shifting the focus of the sector from inputs (as was the case with the shared management by the DILOS) to outputs. To do so, it developed instruments to focus activities at the departmental and local level on the national priorities and increase accountability of all actors within the system. This included the setting of annual national targets in priority indicators, which were inserted in the government's commitments with the international cooperation (World Bank, HIPC, and PRS). To make sure that this shift in focus would become effective throughout the system, the MOH started signing annual performance agreements with each SEDES that set regional targets in priority indicators and clarified the responsibilities of each government level.

More recently, after the different stakeholders again failed to reach consensus on the decentralization of Human Resources to municipalities in the framework of the National Dialogue 2000, the current government introduced yet another change in the sector's organizational structure. This new structure recovers the concept of the DILOS (Local Health Board) in a modified version, and complements it with the setting up of health networks with autonomous operational management. The conceptual framework underlying this new organizational model for the health sector rests on the concepts of "shared management" of health services complemented with their "concurrent management." Shared management is effected through the DILOS, which brings together the health stakeholders (municipalities, SEDES and organized civil society) for strategic decision making over the outputs expected from the health network. Concurrent management

refers to the complementary articulation of other actors (NGOs, Church providers, etc.), allowing their voluntary participation in health decisions concerning the network. Finally, the day to day operational management of the health service network is in the hands of the network director.

This model presents key differences over the previous ones. The DILOS is now responsible for strategic decision making and endorsement of annual local health plans that set the health outputs expected from the network, but no longer for the operational management of health services. The new model thus foresees a separation of roles between the DILOS' strategic management of services and the technical/operational management that is now under the responsibility of the network director. This network director is to be selected through a competitive process led by the DILOS.

These changes have the potential to strengthen the focus on outputs at the local level. The model recovers a space for consultation and agreement on outputs between the different government levels while granting autonomy in the day-to-day management of the network services to the network director. However, this model also presents new challenges, which are discussed in the last section of this chapter. First we examine the instruments that effected the shift from the focus on inputs to one on outputs at the national and departmental levels.

National Commitments and Performance Agreements

The establishment of indicators to monitor health sector performance started in 1997 with the launch of the HIPC debt relief initiative. As part of the social development performance indicators, the HIPC set yearly targets for the period 1997–2000 on output indicators related to child and maternal mortality and outcome indicators related to the country's major endemic diseases, namely Chagas and Malaria. A further step was taken through the World Bank's Health Sector Reform APL, which built on the HIPC and set annual targets starting in 1999 for eight performance indicators that measure the outcomes of key project-supported health interventions aimed at reducing child and maternal mortality rates.[17]

The commitment of the central government to reaching these goals was further strengthened by their inclusion in the Poverty Reduction Strategy (PRS) and the National Dialogue Law (NDL), passed in July 2001. The PRS and the NDL emerged as the result of the "National Dialogue 2000," a participatory process involving broad representation from civil society, local, and national governments and other actors, to define the country's poverty reduction strategy. The PRS and the NDL had been set as conditions for the country's eligibility under the enhanced HIPC debt-relief initiative, as they define the basic strategies to be used in health for poverty reduction and legislate the use of funds liberated through HIPC II.

To bring the focus on outputs to the operational level, the MOH developed Performance Agreements (PA), as instruments that set targets for the regions on priority health indicators. Since 1999, the Minister of Health annually signs Performance Agreements with each of the nine regional health directors. These PAs include indicators on health service coverage and processes related to decentralization and institutional strengthening (see Table 3.1 for the list of indicators included in the PAs). They establish the "terms of reference" of the Regional Health Authorities and are evaluated semi-annually by the MOH.

Results

The new focus on health outputs strengthened the accountability within the system and directed efforts towards the national priorities. The MOH met practically all the targets agreed upon with

17. One of the innovations of this project was that it included the health targets into the legal agreement of the loan to condition year to year disbursements. In addition, it established triggers to be attained to progress to the second and third phases of the program as well as an outcome target for the infant mortality rate in 2008, the year of expected completion of the program.

TABLE 3.1: PERFORMANCE INDICATORS INCLUDED IN REGIONAL PERFORMANCE AGREEMENTS 1999, 2000 AND 2001

Results Indicators	Process Indicators
1. Skilled birth attendance	1. Regular local and regional information analysis meetings
2. Complete prenatal care attendance	2. Decentralized public health networks in place
3. Pneumonia cases attended in children <5 years	3. Hospitals with management authority
4. Acute diarrheal diseases attended in children <5	4. Rotation of human resources in SEDES
5. Early neonatal hospital mortality	5. Performance evaluations of human resources in SEDES
6. Coverage of 3d dose of DPT/HIB/Hep B vaccine	6. Human resource productivity index by level of care in the public sector
7. Number of municipalities with coverage of 3d dose of DPT/HIB/Hep B vaccine below 80 percent	7. Timely delivery of information from SEDES to SNIS
8. Percentage of TB cases cured	8. Percentage of facilities (public, private and NGO) reporting to SNIS
9. Pulmonary TB patients attended	9. Information coverage by facility
10. Percentage of homes fumigated against Chagas	10. Availability of family planning inputs in health facilities
11. Diagnosis and treatment of malaria	
12. Women who receive family planning counseling	
13. Women who receive counseling following hemorrhage in the first half of pregnancy	
14. Bed occupancy rate in 2nd and 3rd level hospitals	
15. Average length of stay in 2nd and 3rd level hospitals	

Source: MOH.

the international cooperation (see Table 3.2).[18] At the regional level, after signing performance agreements with the MOH, the SEDES soon sought to reach agreements on priority targets with their respective districts, thus bringing the commitments a level further down and clarifying the responsibilities at each level. At a more operational level, the meetings of the Information Analysis Committee—a local arena formerly used to discuss health issues on a district and departmental level—shifted their focus from a general discussion of district activities to a more focused analysis of each district's performance on the priority indicators, their likelihood of reaching the annual targets, and the identification of critical issues. As a result, local actors started thinking more systematically about health indicators, the factors that might facilitate or impede reaching the set health goals, and the links between these benchmarks and the desired health outcomes.

Challenges

The experience to date suggests that both the instrument and its application could be improved to further the focus on results in the country. The main challenges with respect to the instrument include: (i) the choice of indicators; (ii) the methodology to set targets, (iii) monitoring and evaluation; and (iv) incentives for compliance.

18. In the case of the World Bank health APL-1, the national government met targets on the 8 key health indicators in all years except in the case of the complete cycle of antenatal care in 2002 and the national financing of vaccines. For the latter financing fell short by US$600,000 in 1999, by US$1.5 million in 2001, and by US$1 million in 2002 (Table 3.2). As the agreed-upon triggers were met, the project moved into the second phase of the APL.

TABLE 3.2: NATIONAL COMMITMENTS FOR HEALTH

Indicators	baseline 1998	Achieved coverage (target) 1999	2000	2001	2002
1. Percentage of births attended by trained health personnel	42%	47% (38%)	52% (40%)	54% (43%)	54% (54%)
2. Women with complete cycle of antenatal care visits	30%	31% (30%)	33% (32%)	36% (36%)	34% (38%)
3. Early neonatal hospital mortality (per 1,000 live births)	9	7 (14)	9 (13)	7 (12)	7 (8)
4. Number of pneumonia cases in children under 5, attended in health services	81,462	91,554 (85,000)	112,154 (95,000)	122,743 (105,000)	128,244 (122,000)
5. Number of acute diarrheal diseases in children <5, attended in health services*	337,123	372,986 (310,000)	450,772 (340,000)	426,697 (370,000)	
6. 3d dose DPT/Hib/Hepatitis B vaccine (coverage refers to DPT for 1998 and 99)	77%	85% (82%)	89% (65%)	92% (75%)	100% (85%)
7. No. of municipalities with DPT/Hib/ Hep B vaccine coverage less than 80%	171	135 (170)	66 (180)	118 (119)	53 (83)
8. National financing of vaccines (Millions of US$)	0.5	1.9 (2.5)	4.0 (3.0)	2.0 (3.5)	3.0 (4.0)

*As of 2002, this indicator was replaced by the number of children under 5 who receive 3 doses of iron.
Source: MOH.

Choice of indicators

The indicators included in the Performance Agreements initially were those set down in agreements between the country and the international cooperation (World Bank APL and HIPC documents). Then, the MOH together with the international cooperation and regional representatives expanded them to a set of 15 results indicators and 10 process indicators, the latter with the objective of deepening decentralization from the national level to health districts by strengthening local capacities. Some of these indicators, however, had no clear and simple link to the desired health outcomes. This is the case with the number of acute diarrheal diseases (ADD) and pneumonias attended to in health care facilities. A period of intense floods increased the incidence of ADDs and pneumonias in the country in 2001. As a result, more cases were attended to in facilities, as reflected by an increase in the indicator as reported by the SNIS. This, however, was not a reflection of improved coverage nor necessarily of any progress towards the desired health outcome (a reduced infant mortality rate), but simply denoted an increase in the number of cases attended to.

In addition, most of the process indicators included in the PAs lacked a clear measurement methodology and had as their information source the Departmental Health Authorities (SEDES) themselves. Similarly, some of the output indicators, such as the supply of contraceptives and the number of women who received post-abortion counseling, could not be measured because the information was supposed to come from surveys conducted especially for that purpose (clearly an unsustainable and costly solution).

Setting and reaching the targets

A second challenge is the lack of a defined methodology for setting targets resulting in potentially inadequate assessments of regional performance. In the first year of full implementation of the

TABLE 3.3: RANKING OF DEPARTMENTS BY PERFORMANCE

	(A) % Targets met	(B) % Growth in indicators	(C) Coverage achieved
Chuquisaca	1	4	1
Potosí	2	5	3
Beni	3	6	4
Cochabamba	4	1	8
Santa Cruz	5	8	6
Oruro	6	3	2
Tarija	7	9	7
Pando	8	2	5
La Paz	9	7	9

Source: Authors, based on information from the MOH and SNIS.

Performance Agreements (1999), targets were set through political negotiations roughly on the basis of the trend observed in the three previous years. In the following years, however, targets were set according to how well the 1999 benchmarks had been reached. As a result, departments that had set very optimistic (and unreachable) targets in 1999, set targets for 2000 that, in some cases, implied no improvements in coverage. It followed that these departments met all targets in the year 2000. Other departments, on the other hand, who had set very low targets, followed the opposite behavior and, by the end of 2000, found themselves far from reaching their targets.

As a result, the national ranking of departmental performance (which compares targets with achieved coverage) may not adequately reflect real progress in terms of health outcomes. This can be illustrated by an analysis of the performance of the country's nine departments on seven priority indicators (indicators 1 through 7 in Table 3.1) during the period 1999–2001. The ranking of the departments varies considerably, depending on which criteria is used to measure performance (see Table 3.3). The MOH used criteria A, namely, the proportion of targets met each year, and accordingly rewarded Chuquisaca three years in a row as best performer. If, however, we look at the percentage growth in indicators achieved over the 1998 baseline (criteria B), Chuquisaca comes only fourth, and Cochabamba is the best performer. Finally, if the criteria used is the absolute level of coverage achieved each year (criteria C), again Chuquisaca comes first, but the second best department is now Oruro, which ranks only sixth according to criteria A.

At the district level, targets were often set by the SEDES with limited local involvement and using different methodologies. Some SEDES simply applied the regional benchmarks to all districts equally, irrespective of intra-regional differences. Others used historical district trends to set targets that on the aggregate would enable the region to achieve the benchmark set in the performance agreement with the national level. But in most cases, local ownership in the process was low as were local incentives for meeting the proposed benchmarks.

Monitoring and evaluation

The PAs have not been monitored and evaluated regularly, mainly because no organizational unit was clearly given this responsibility. Until 2002, each SEDES was responsible for monitoring the performance of their districts, and the health reform unit within the MOH produced reports on SEDES performance and their meeting of the targets. An attempt to get the donors involved in 2000 failed. As a consequence of the lack of definition over the institutional setting for the overall PA process (including their monitoring and evaluation), the PAs have typically been crafted and

signed in the second semester of the year. Another related challenge is the availability of information. The monitoring of PAs relies on administrative data from the SNIS, which suffers from underreporting (mainly from social security and private facilities) and some discrepancies when compared with survey data.

Incentives for compliance

The MOH has created and used different incentives for the SEDES to reach the agreed upon benchmarks. These include public dissemination of the ranking of SEDES and recognition of best performers. On two occasions, this was complemented by a prize of US$10,000 in medical equipment (given in 2000 to Chuquisaca). This mechanism generated a degree of competitiveness between different SEDES around the PAs. The districts, on the other hand, had limited incentives to comply with their PAs. This is because while they committed to specific health targets, they often had no control over the inputs needed to reach these targets. The facilities under their operational management belonged to the municipalities and the human resources working in them were managed directly from the SEDES, with no deconcentration at the local level. (See Box 1 for some examples on how several pilot districts addressed these challenges.)

Deepening the Focus on Results in the Context of the New Management Framework

The MOH established the new management model centered on the DILOS as an answer to the fragmentation of responsibilities on health production factors. The DILOS brings together for strategic decisionmaking, into a single institutional unit, those who own and finance the health inputs (SEDES and municipality) as well as a representative of organized civil society. In addition, the model foresees the establishment of health networks (which may encompass more than one municipality) run by network directors who have the operational responsibility over the provision of services.

To improve accountability and strengthen the focus on health outcomes in the context of the new management model, the MOH will have to address several challenges. These include: (i) maintaining and improving the Performance Agreements signed between the MOH and the SEDES; (ii) developing new instruments to bring the focus on results to the local level (that is, to the DILOS and health networks); (iii) ensuring the effective functioning of the DILOS and operational management of the health networks, especially in rural areas; and (iv) strengthening and institutionalizing the monitoring and evaluation of health outputs and outcomes at all levels.

The performance instruments signed between the MOH and the SEDES should be maintained, improved and tailored to the new management model. This implies reducing the number of indicators and ensuring that they are: (i) in line with changes in desired health outcomes; (ii) have a defined measurement methodology that is easily understood by local health actors; and (iii) are measured on the basis of information periodically available from an impartial source (for example, the SNIS). To reflect the new management model, the PAs could, for example, include process indicators related to setting up health networks and the effective functioning of the DILOS. The national government has already taken some steps in this direction for the 2003 PAs.

New instruments should be developed to bring the focus on results to the local level. Increased involvement by the DILOS presents an opportunity to increase ownership in the definition of local priorities and targets. These should be explicitly defined in an appropriate instrument, which could be the Local Health Plan. This plan would be signed by the DILOS and the network director for whom it would represent the terms of reference. It should include: (i) a set of specific coverage and process targets that the health network is expected to achieve, and (ii) the responsibilities of all parties in reaching these targets (including, for example, technical assistance and financing of HR from the SEDES, and financing from the municipality for the SUMI and specific health investments). To ensure that the local health plans reflect national priorities, the representative of the SEDES in each DILOS should bring with him a proposal of local health targets.

Box 1: Pilot Experiences of Three Health Service Networks with Different Management Models

Several health service networks in the country experimented with alternative management models. Most of them were pilot experiments with strong financial and technical support from external donors. We briefly present some aspects of three different cases, namely El Alto (supported by Dutch cooperation and the World Bank Health Reform Project), Challapata (supported by DFID) and San Lorenzo (supported by Canadian cooperation).

El Alto, LA PAZ

In District I of El Alto (covering about 150,000 inhabitants—one-fourth of the municipal population), the management of the governmental health service network was transferred to an NGO. The transfer was formalized through the signing of a management contract between the NGO and a committee including two representatives of the municipality, two from the SEDES and two from organized civil society (a committee similar to the DILOS). The contract included results and process indicators and established the decentralization of the hiring and firing of human resources within the network, from the SEDES to the NGO. After a year of functioning, results suggested that service administration had improved, coverage increased and the first level of care had been strengthened: bed occupancy rates reached 84 percent, external consultations increased by 55 percent, and skilled birth attendance increased by 41 percent. In addition, a user satisfaction survey suggested the population was generally pleased with the services. However, the network soon encountered difficulties with respect to human resources management, as the hiring and firing functions were never transferred to it from the SEDES.

Challapata, ORURO

In Challapata, Oruro, in addition to the similar use of a management contract, the five municipalities that corresponded to the territorial area of the health service network (for a total population of 40,000 inhabitants) were brought together to set up a "Mancomunidad" (voluntary association of municipalities) for health. The idea was that the Mancomunidad would facilitate coordination among municipalities on health issues, enable a pooling of resources for the public health insurance and a clear separation of responsibilities between the association of municipalities, the SEDES and the health service network to be managed by its appointed director. Challenges faced in relation to the mancomunidad included: (i) the relative complexity of the formal requirements and long duration of setting up the mancomunidad; (ii) the reluctance of the municipalities to pool their public health insurance earmarked funds, as well as to commit additional municipal funds for the operational running of the Mancomunidad; and (iii) the low level of technical expertise at the municipal level (explained by small size and remoteness of municipalities). On the side of the health service network, the main challenge was the failure to attract specialized doctors to effectively upgrade the Mancomunidad's main facility into a secondary level hospital.

San Lorenzo, TARIJA

In the district of San Lorenzo, which includes one municipality of 20,000 inhabitants, emphasis was placed on the management training of district personnel and the introduction of performance instruments. These included a district health plan signed annually by the municipality and all of the district's staff, and individual annual work plans with monthly targets in priority indicators for all staff. The district director evaluated her staff twice a year. As a result, management capacities in the district increased significantly leading to a greater focus on results. Yet, two problems soon arose: first, the district director lacked credibility due to her limited means to act upon the results of the performance evaluations. While she made use of several incentives, such as training, reward certificates, and rotations within the district, these remained marginal because she had no resources at her disposal and no say in the hiring and firing of personnel for the district (except in the case of the selection of HIPC staff). This led to a drop in staff morale who felt their increased efforts were not being recognized. Second, the district director expressed she could hardly be held accountable for the priority benchmarks set with the SEDES, since she had no control over the production factors needed to meet them.

An additional option would be to link the health goals set at the municipal level to future financing from the Productive and Social Investment Fund (FPS). Currently, the FPS provides financing for municipalities from the HIPC II debt-relief initiative and other external sources (for example, World Bank, Canada, IADB). To access these funds, the municipalities need to finance a counterpart, the percentage of which is determined on the basis of their level of income and the type of project. An option would be to make access to FPS funds conditional upon reaching certain health goals at the municipal level. These health goals should be in line with national priorities and the achievement of the Millennium Development Goals. This mechanism would generate greater incentives for municipalities to comply with the local performance instruments and their associated health targets.

The effective functioning of the DILOS and health networks requires that they have sufficient resources—and control over them—to meet the set health goals. To ensure this, the municipal representative in the DILOS should be the link towards the execution of municipal SUMI funds, according to the corresponding reimbursement needs and priorities identified within the health network. Second, the tasks related to the administration and management of human resources for health must be distributed between the DILOS and the other government levels in a way that resolves responsibility and authority mismatches. This is discussed in detail in Chapter 6 on Human Resources for Health. Finally, for the effective functioning of health networks, primary care facilities should be strengthened.

Rural areas present the particular challenge of setting up multi-municipal health networks. Considering that some municipalities have very small populations with only primary care health facilities, they must associate with other municipalities where the referral hospitals are located to form a complete health network. For these cases, the model foresees the setting up of a "multi-municipal" DILOS based on each municipal DILOS. This multi-municipal DILOS would designate the corresponding health network director to manage the entire health network. The country has developed several formal institutional mechanisms for the association of municipalities, which could facilitate the constitution of multi-municipal DILOS. One of these is the "Mancomunidad," a voluntary association of municipalities within a set judicial framework, for a specific purpose. However, past experience with setting up these formal mancomunidades around a given health network (see Box 1) suggests that it is a time-consuming and relatively complex process. On the other hand, the functioning of a multi-municipal DILOS could be made effective through the "Transitory Municipal Unions," a more informal version of the mancomunidades.

To ensure follow up of health goals set in the PAs and the Local Health Plans, the monitoring and evaluation function should be institutionalized within the MOH and the SEDES. This would include: (i) a regular evaluation of the compliance with PAs and Local Health Plans and public dissemination of the results; and (ii) support to the DILOS in identifying and solving bottlenecks to improve health outcomes.

Finally, in the longer term, the MOH, together with the municipalities, could consider changes in the payment mechanism that would increase the incentives for health networks to meet the agreed upon targets. For example the DILOS could assign the health network a percentage of its historical budget, retain the rest and disburse it after the achievement of set monthly targets, including additional incentives on top of the budget. Another option is for the MOH to include in the HRH incentive framework, the periodic (annual) provision of one-time financial rewards to all HRH in a set number of health networks that achieve the best performance.

CHAPTER 4

PUBLIC HEALTH INSURANCE

In this chapter, we analyze the design and implementation of public health insurance in Bolivia. By this term we refer to the three forms of public health insurance that have been successively implemented in the country since 1996, namely, the National Maternal and Child Insurance, the Basic Health Insurance, and the Universal Maternal and Infant Insurance. First, we describe the basic characteristics of the insurance scheme and how they have changed over time. Then, we analyze the following specific issues in more detail: (i) the relationship between the size of the package, user empowerment and targeting; (ii) the financial relationship between the central government and municipalities and the associated incentives; (iii) the impact of the insurance on equity; and (iv) incentives and administrative issues related to the payment mechanism. Each section includes an analysis of the main challenges and some recommendations to address them, and the last section presents brief conclusion.

Design and Basic Characteristics of the Public Health Insurance in Bolivia

The Bolivian public health insurance is a policy that, since its inception in 1996, guarantees the entire population free access to a publicly financed package of health services. This policy promotes demand and the empowerment of the population and has become the key instrument for the government to implement national health priorities in the context of decentralization.

The public health insurance facilitates the access of the poor to health services by removing economic barriers. Within the Bolivian health system, the social health funds (*Cajas*) provide free services to their beneficiaries, but they cover only about 20 percent of the population, which typically is not the poorest. The rest of the population receives care primarily in public facilities, which charge user fees for drugs and for consultations, diagnostic exams and hospitalizations (with the exception of services provided under the national public health programs). As a result the economic barrier of access has become important for the poor. In this context, the public health insurance establishes a mechanism for the public financing of drugs and other inputs and guarantees the free access of all to the services included in the package.

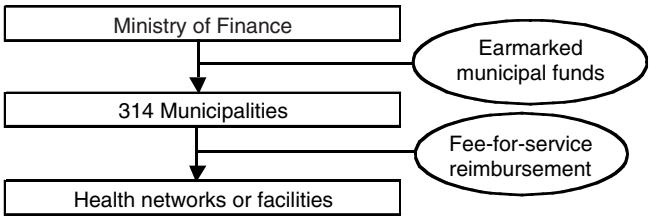
The public health insurance was first implemented in 1996 as the National Maternal and Child Insurance (*Seguro Nacional de Maternidad y Niñez*—SNMN). This insurance included the coverage of a reduced package of services (32 interventions) directed at pregnant women and children under 5 years. In 1998, the SNMN became the Basic Health Insurance (*Seguro Básico de Salud—SBS*), as financing was increased and the package expanded to 92 interventions, including some interventions for the general population, financed by national programs (such as sexual and reproductive health and treatment of STDs, malaria, TB, and cholera). Since January 1, 2003, the SBS has been replaced by the Universal Maternal and Infant Insurance (*Seguro Universal Materno Infantil*—SUMI), which covers a comprehensive package of services for pregnant women and children under 5 years. Table 4.1 presents the different characteristics of the Bolivian public health insurance and describes how these changed as the SNMN became the SBS and later, the SUMI.

TABLE 4.1: THE EVOLUTION OF PUBLIC HEALTH INSURANCE IN BOLIVIA

	SNMN	SBS	SUMI
Target population	Pregnant women and children under 5 years	Pregnant women, children under 5 years and general population for specific interventions	Pregnant women until 6 months after childbirth and children under 5 years
Package (risks covered)	32 interventions corresponding to the first and second levels of care	92 interventions corresponding to the first and second levels of care	Universal, with few exceptions. Includes complex and dental care
Financing	2.7% of central tax transfers to municipalities (3.2% of 85% of "co-participation" funds)	5.4% of central tax transfers to municipalities (6.4% of 85% of "co-participation" funds)	10% of central tax transfers + 10% of the National Dialogue Account* for the National Redistribution Fund (*Fondo Solidario Nacional—FSN*)
Distribution of funds	Per capita distribution to municipalities	Per capita distribution to municipalities	Per capita distribution of central tax transfers + demand based access to FSN to cover deficits
Payment Mechanism	Fee-for-service reimbursement; Fees set by MOH	Fee-for-service reimbursement; Fees set by the MOH	Reimbursement by packages of services; Fees set by MOH
Management	Municipality reimburses health facilities	Municipality reimburses health district, which consolidates information from facilities	Municipality reimburses health network after approval by DILOS
Reimbursement fees	Based on variable costs (drugs and other inputs) + incentives for deliveries and other priority services	Based on variable costs (drugs and other inputs) + incentives for deliveries and other priority services	Based on variable costs and estimated frequency of cases; differentiated by level of complexity of facilities
Earmarking of funds for public insurance	Other uses forbidden; specific one-time exceptions were granted	Other uses forbidden; specific one-time exceptions were granted	Regular use of excess funds granted for health investments

Source: Authors.
*The National Dialogue Account is the account that was set up in the framework of the HIPC debt-relief initiative.

FIGURE 4.1: FINANCING OF THE PUBLIC HEALTH INSURANCE



The public health insurance is financed with public funds distributed per capita to municipalities, which use these to reimburse services to providers on a fee-for-service basis (see Figure 4.1). The municipalities finance the variable inputs of the basic health insurance. As of 1994, municipalities automatically receive 20 percent of central tax revenues, distributed on a per capita basis. A portion of these funds (called co-participation funds) is earmarked for the financing of the public health insurance and deposited in a special municipal account. These funds are then used to reimburse facilities and health service networks on the basis of their monthly production, according to the fees set by the MOH. All public and social security facilities have to provide the services included in the insurance, using their infrastructure and human resources for that purpose. In the case of the public sector, human resources are financed centrally, while social security facilities (*Cajas*) often make use of excess capacity to provide services to the population under the public health insurance. Private providers (for-profit and non-profit NGOs) can also provide services under the insurance, conditional upon their signing of a special agreement with the MOH; such agreements have been signed in only a few cases, mostly with Chuch-affiliated providers.

Results to date suggest that the public health insurance has been successful in removing the economic barrier of access to services, as evidenced by the observed increase in coverage of priority services presented in chapter 1. While it is not possible to determine in what proportion the insurance contributed to the observed increase in coverage of antenatal care, skilled birth attendance and care in children under 5, it has undoubtedly played a central role. For example, knowledge that the public health insurance provides free services increases the probability of women receiving skilled birth attendance by 16 percent. Similarly, it increases the probability that children under five years receive care for acute diarreal diseases and for acute respiratory infections by 8 percent and by 4 percent, respectively (see Annex C).

The public health insurance has lead to greater coverage and improvements in health indicators in the country, not only through its direct impact on the demand for services, but also through indirect channels. These include: (i) empowering the population to demand health services, by giving them the right to an explicit package of interventions; (ii) securing additional financing for health, through the earmarking of municipal coparticipation funds and more recently additional funding from the National Dialogue Account; (iii) establishing a new mechanism for the flow of funds that places municipalities at the center of their administration and thus favors increased decisionmaking at the local level; and (iv) improving the efficiency of providers as a result of the incentives to production embedded in the payment mechanism. The strength of these mechanisms and their potential for effecting change varied depending on the specific design of the insurance, as discussed below.

The public health insurance, however, does not address some of the barriers of access to health services that limit the increase in coverage, especially in rural areas. Because the public health insurance operates fundamentally by promoting demand through the reduction of economic access barriers, it has practically no effect on the cultural barriers of access to services (discussed in further

detail in chapter 7), which are important in a country like Bolivia, where the indigenous people are a majority. Similarly, the public insurance has little impact on the supply of health services, which is unequally distributed in the country, thus leading to important access problems due to long distances and low installed capacity in rural areas (see chapter 6 for a discussion of the distribution of human resource for health).

The Package of Services, User Empowerment and Targeting

The SUMI introduced a major shift in the size of the insurance package and the extent of risk-coverage. Initially, the public health insurance package was limited and essentially focused on primary care and childbirth. The SUMI, however, expanded the package to a comprehensive one that covers all services for the target population, including complex tertiary care and dental care. Another change is that the SUMI is targeted exclusively at pregnant women and children under 5, thus recovering the population focus of the SNMN. The SBS, by contrast, had included the general population as beneficiaries for some interventions partially financed by national public health programs.

The definition of the package of interventions is key because it must balance different objectives. The most important one is the balance between the size of the package of interventions and the available financing. If the program is under-financed, no rights will be established at all. The design of the insurance should also strike a balance between: (i) effectively covering the main health risks and thus enabling the target population to feel empowered to demand their rights; and (ii) ensuring resources are directed towards national priorities, according to cost-effectiveness criteria, equity and/or social priorities.

The SBS only partially covered the health risks of mothers and children, thus making it difficult for them to clearly understand and demand their corresponding rights. The SBS included the main health risks of the maternal and child population with an emphasis on the first level of care and on childbirth. The package covered about 80 percent of the health needs of children under 5 years, focusing on the most cost-effective interventions. In spite of this, there were misunderstandings between health facilities and families who did not understand that the SBS did not cover all interventions and thought the public insurance was "deceiving" them when they were refused free services. They felt the health facilities were not giving them their "rights." This undermined the image not only of the insurance but also of the public health services.

By providing a package that covers practically all the health risks of pregnant women and children, the SUMI makes it easier for them to understand and demand their rights. However, to make that right effective will require the availability of the corresponding resources. This entails ensuring the financing, installed capacity (including infrastructure, equipment and human resources) and appropriate management of health services, in such a manner as to respond effectively to the demands of the population.

With respect to financing, the total cost of the SUMI is currently unknown, due to the lack of availability of data on the cost of individual interventions and the expected demand for services. The funding for the insurance has been practically duplicated at the local municipal level (from 5.4 to 10 percent of co-participation funds) and complemented by a National Redistribution Fund (10 percent of resources from the National Dialogue Account). However, there are no available costs studies to evaluate if the funds allocated are sufficient, and preliminary data show that SUMI could face potential financing problems. Funding should thus be monitored closely, in relation to the size of the benefits package, so as to ensure equilibrium between the included services and the available funding.

With respect to installed capacity, there is a risk that the inherent structural limitations of the Bolivian health system will lead to the exclusion from the benefits of the SUMI of groups with low access to health services, such as the rural and indigenous populations.

To balance risk coverage and targeting, the MOH should ensure:

- The financial sustainability of the SUMI, including a close monitoring of its financial flows (together with a thorough cost analysis). The MOH should adjust any imbalances between the funding and the size of the package and ensure fiscal soundness of the proposal.
- There is sufficient capacity to guarantee access to SUMI services in rural areas. This entails using EXTENSA to increase the supply of services in distant areas, addressing bottlenecks in the supply of services, reimbursing referrals from rural primary care facilities to hospitals, and adapting services to the cultural practices of the indigenous populations.
- The provision of SUMI services to non-beneficiaries by social security's health insurance funds, which account for an important share of the resolution capacity for complex care.

The SUMI responds to the national health priorities in that it increases the coverage of the health needs of the maternal and child population. As a result, it has an important potential for reducing maternal and infant mortality, especially that which can be prevented through complex interventions, because these are now included in the package. However, the inclusion of complex interventions of high cost poses serious questions of financial sustainability in a country like Bolivia with serious budget constraints.

- While it is key to ensure the financial sustainability of the SUMI, it is equally important to ensure that securing its financing will not diminish the resources needed to extend the coverage of basic care and national public health programs to those who still lack access to them (see Box 2).

To date, the public health insurance scheme has not significantly encouraged health promotion and prevention activities in priority areas such as nutrition and child care, family planning and contraceptive methods, healthy lifestyles and hygiene. The public health insurance includes the prophylactic provision of iron and vitamin A to children under 5. However, in the past, these interventions met with logistical challenges and were not part of a broader effort to address the

Box 2: THE PUBLIC HEALTH INSURANCE AND THE NATIONAL PROGRAMS

The design and implementation of the SBS included an innovative strategy with respect to national programs. On one hand, the SBS included the interventions covered by national programs as a mechanism to transmit its rights to the population. On the other hand, the SBS became a mechanism of partial financing of these programs: the reimbursement fees of the SBS covered inputs for the diagnosis of TB, and malaria, treatment of cholera in adults, detection and early treatment of cervix cancer and treatment of STDs (until 2001 only, and except AIDS). The SBS also paid for consultations in family planning, TB and malaria consultations, thus providing small incentives for their provision.

Overall, the SBS package included too few risks for the adult population to feel insured and empowered to demand specific rights. However, the SBS did operate as a financing mechanism and used earmarked municipal funds without breaking the central purchasing mechanisms. These are important to maintain the quality and standardized treatment in these programs and generate economies of scale. The marginal incentives recognized by the SBS also promoted the health personnel to engage in a more pro-active search for these cases.

The SUMI eliminates the interventions that fall under national programs from its package, except when they are directed at pregnant women and children under 5 years. In these cases, the SUMI covers the entire costs. This points to the need for the government to review the financing of the different national programs, ensure additional financing if necessary and establish a purchasing and distribution mechanism for the health service networks that preserves quality and economies of scale within the decentralized context.

country's high malnutrition levels. Similarly, the SBS reimbursed regular check-ups in children under 5, giving providers an incentive to increase these consultations. This incentive effectively led to an increase in these services, but this was still primarily limited to in-service activities in response to demand; few facilities used SBS payments for community outreach.

- Health promotion and prevention activities require increased efforts in the future. This could entail: (i) setting attractive fees for these services, (ii) including new mechanisms for reimbursing out-reaching promotional activities, (iii) developing more comprehensive strategies, and (iv) ensuring local flexibility in implementation.

Financing of Public Health Insurance—Relationship between Municipalities and the Central Government and Associated Incentives

The Bolivian government turned to municipal funds as a financing source for public health insurance and to address some of the challenges that emerged in the context of decentralization. As a result of the 1994 decentralization (see Chapter 3), the municipalities were responsible for covering the cost of inputs and maintenance of health services, but most of them prioritized investments in infrastructure. Public insurance presented an opportunity to ensure local financing of inputs for priority health interventions through the earmarking of funds for that purpose (initially 2.7 percent for the SNMN, then 5.4 percent for the SBS and now 10 percent for the SUMI).

Initially, the participation of municipalities in the public insurance scheme was voluntary. They joined the scheme by signing an agreement with the MOH, as a result of which, the corresponding percentage of local funds was earmarked for the insurance and deposited in a Municipal Health Account created for that purpose. But shortly after the initial launch of the public health insurance, the dissemination of its associated benefits generated social pressures that led to practically all municipalities signing the agreement. The SUMI, however, set the earmarking of funds for the public insurance in the Law, thus making it mandatory. Social pressures and political attention to public health insurance seem to explain why it has been possible to double the amount of funds earmarked for the insurance twice in the last five years. This was achieved despite the resistance of many municipalities, especially large urban ones.

Public health insurance has contributed to an increase in public financing for health. Until 2002, municipal expenditures on public health insurance corresponded to about 6 percent of MOH expenditures. This could double with the SUMI, whose budget for 2003 is US$ 11.6 Million. In addition, central MOH expenditures increased substantially since 1998 (in real terms), suggesting that municipal financing for public health insurance did not substitute for central expenditures, but rather contributed to an overall increase of funds for health.

The public health insurance financing mechanism improved equity of financing for health care. Public health insurance funds are distributed equally throughout the country, because they are based on per capita central tax transfers.[19] This represents an improvement in terms of equity in comparison with past distributions of public health expenditures. Historically, financing was generally biased towards the richer urban municipalities that account for higher complexity facilities and highly trained personnel.

On the other hand, because the distribution of public insurance funds is per capita, it does not address different needs resulting from differences in demand and installed capacity between municipalities. As a result, with the SBS, there were imbalances between municipalities that had deficits (which they had to cover with other municipal funds) and those that had excess funds (which they could not use for other purposes due to regulatory restrictions). On average, in 2001, health facilities used up 70 percent of the earmarked municipal funding. This average

19. However, considering the concentration of social health fund beneficiaries in the cities, there are actually more public health insurance funds available per potential user in urban as in rural areas.

TABLE 4.2: MUNICIPAL SBS SURPLUSES VS. SOCIOECONOMIC INDICATORS

Municipalities by size of surplus over disbursements	Ave. surplus (on 31/12/01)/total disbursements (2001)	HIPC Poverty Indicator (1 = richest; 5 = poorest)	Percentage of municipalities w/ predominantly indigenous pop	Percentage of municipalities with basic hospital
10% with smallest surplus	0.02	3.4	0.37	0.74
2	0.05	1.3	0.06	0.98
3	0.09	3	0.16	0.5
4	0.13	2.5	0.02	0.91
5	0.25	2.9	0.16	0.71
6	0.4	3.2	0.28	0.78
7	0.6	3.8	0.46	0.38
8	0.79	1.6	0.04	0.9
9	1.24	3.1	0.31	0.74
10% with largest surplus	1.85	4.2	0.47	0.61

Source: Data from MOH and INE.

includes wide disparities: while 20 percent of municipalities used practically 100 percent of their funds, another 20 percent had accumulated unused surpluses that were superior to that year's disbursements into their accounts. On average, the use of SBS funds was slightly lower in rural areas, and in poorer and predominantly indigenous municipalities, where the supply and access to health services is more limited. However, there are exceptions: some rural municipalities used up all their funds and some urban ones had large surpluses.[20] Table 4.2 illustrates this dispersion and shows that there is no strong relationship between the use of SBS funds and indicators of poverty, supply and presence of indigenous people.

The SUMI gives municipalities more flexibility in their use of public insurance earmarked funds, thus addressing the problem of unused funds. In rural areas, low use results from lower supply and demand (linked to geographic and cultural access barriers). In urban areas, low use results from a greater percentage of the population affiliated to social security and greater demand and supply of private health care. The SUMI allows municipalities to use the excess funds of the Municipal Health Accounts for health investments.[21] However, in rural areas it might be more efficient to use these funds to increase the supply of services through alternative mechanisms, such as, for example, hiring personnel or giving them marginal financial incentives.

20. In 2001, of Bolivia's seven largest cities, two used practically all their funds (Santa Cruz and Cochabamba), three had accumulated surpluses corresponding to between 10 and 30 percent of annual disbursements (El Alto, Sucre, and Potosí) and two had important surpluses: in La Paz the surplus was equivalent to 76 percent of annual disbursements and in Oruro to 124 percent. In the case of La Paz, this can be explained largely because of a lack reimbursement to Social Insurance Funds, because of administrative issues.

21. This measure was resisted in the past, under the argument that if municipalities were given the freedom to use these resources, they would prefer investments rather than financing the variable public insurance costs. As a result, some poor municipalities found themselves with excess funds in their accounts, which they could not use for lack of supply to offer public health insurance services. In practice, at the end of every year, the MOH granted one-time permission for the use of excess funds for health investments.

Another substantial change introduced by the SUMI is the creation of a National Redistribution Fund to provide resources to municipalities who use up their Municipal Health Accounts. The National Redistribution Fund (*Fondo Solidario Nacional—FSN*) is financed with 10 percent of the National Dialogue Account,[22] which was created with the resources made available from debt-relief through the HIPC initiative. The funds from the FSN are not distributed to all municipalities on a per capita basis, but are available for municipalities whose earmarked resources are not sufficient to cover demand.

The modified financing scheme introduced by the SUMI creates a mixed incentive structure for municipalities. On one hand, the existence of a National Redistribution Fund, to which municipalities can turn to for additional resources shifts the financial risk to the central government. This is because when a municipality uses up all of its earmarked resources due to high demand for services, the central government is responsible for providing the additional funds. Municipalities thus have limited incentives for cost-containment. On the other hand, if a municipality expects that it will not use up all of its earmarked resources, it has an incentive to reduce costs in order to be left with the greatest possible surplus at the end of the month. It can then spend this surplus on health investments. The greater flexibility introduced by the SUMI for the use of Municipal Health Account surpluses increased the incentives in this direction. In conclusion: if a municipality expects not to exhaust its earmarked funds and prefers to spend on health investments, it will try to reduce SUMI spending; if on the other hand, a municipality expects to use up its earmarked funds and request additional ones from the FSN, it has low incentives for cost-containment.

The new financing scheme of the SUMI may lead to an inefficient use of resources and inequities in their distribution. To avoid this, the MOH should:

- Establish mechanisms that prevent municipalities uninterested in controlling the expenditures of their health facilities from shifting these costs too easily to the Central Government.
- Ensure permanent monitoring of the use of SUMI funds.
- Reduce perverse incentives, for example, by requiring audits of the Municipal Health Accounts of some of the municipalities that request FSN resources. If the results from these audits suggest that the municipalities are not adequately containing costs, the SUMI could condition their access to FSN resources on their implementing efficiency improving measures.
- Take measures to shift demand towards first level facilities. This could be done by establishing a family doctor as a gatekeeper or by establishing gratuity of services only for users who enter the system through these facilities.
- Allow rural municipalities to use Municipal Health Account surpluses not only for health investments, but also for alternative measures that would increase the supply of services in these areas.

Public Health Insurance and Equity

By lowering the economic barriers to access, public health insurance improves the access of the poor to health services. As evidenced by the figures presented in Chapter 1, the increase in coverage of priority health services reached not only the urban rich, but also the rural and poor populations. It is important to bear in mind, however, that there are other barriers of access to services

22. The National Dialogue Account represents about US$60 million per year. According to the Law these funds are to be distributed progressively towards the poorest municipalities and spent in the following proportions: 10 percent for investments in health, 20 percent for education, and 70 percent for infrastructure. With the SUMI, 10 percent of the total amount in the National Dialogue Account is subtracted to create the National Redistribution Fund, after which remaining funds are distributed to the municipalities.

for the poor. At the same time, universal coverage implies that there may be a partial shift in the demand of the middle and higher income quintiles, who previously sought care in private services and moved to the now free public sector. This shift was limited insofar as the package included only basic services and relied on self-targeting by the poor. But with an increase in the size of the package, a greater shift in demand can be expected, thus generating increased pressure on limited fiscal resources.

The expansion of the package introduced by the SUMI theoretically improves access of the poor, especially to complex health services. However, there is a risk that they will not fully benefit from these new opportunities due to the lack of supply in the areas where they live. On one hand, the more comprehensive package lowers the economic barriers for the complex and most costly services. As the extent of gratuity is increased, the effective rights and access of the population to health services also increases. On the other hand, cultural and geographic access barriers are greater in the poorer municipalities who have limited capacity to offer complex services to their populations. However, these services are precisely the new benefits provided by the SUMI. As a result, under the current scheme, it can be expected that the poor will still have a limited access to complex care. Consequently, few poor municipalities are expected to access the additional financing provided by the National Redistribution Fund.

In this context, the MOH should take measures to prevent the implementation of the SUMI from adversely impacting equity. The additional resources provided by the FSN were originally to be distributed progressively to the poorest municipalities (according to the National Dialogue Law). But it is now most likely that they will end up in the richest municipalities, to fund care primarily for their own citizens and very little for the poor coming in from rural areas. Measures to avoid this from happening, could include:

- Ensuring that the costs of transport for referrals from rural health posts and centers to higher complexity hospitals are effectively reimbursed by the SUMI, and that this mechanism is widely known and used. The possibility of promoting demand in rural areas by reimbursing other patients costs (such as food for pregnant women waiting for delivery) should also be considered.
- Strengthening first and second level facilities with personnel and equipment, where needed.
- Allowing for an increase in the reimbursement fees for SUMI services in rural areas—whose costs are higher because of transport.
- Giving rural municipalities more flexibility in the use of their Municipal Health Accounts.
- In rural municipalities, promoting and reimbursing with the SUMI, preventive and promotional services, such as comprehensive extra-mural interventions directed at preventing malnutrition in children under 5.
- Monitoring the use of complex and costly services by middle and high-income families in urban areas.

Administration of the Insurance and Incentives Embedded in the Payment Mechanism

In line with the decentralization process initiated in 1994, the public health insurance has stimulated and strengthened the role of municipalities in health. Municipalities receive funds for the public health insurance and are responsible for reimbursing their facilities for the delivered services. As a result, all municipalities have been forced to pay greater attention to health issues. In addition, despite the fact that their role was mostly confined to an administrative one and not to strategic decisionmaking, the experience with the SNMN and SBS increased municipal capacity for health and thus paved the way for greater participation within the DILOS.

The fee-for-service payment mechanism gives providers an incentive to increase the production of services. While the international experience suggests that this may result in supply-induced

demand and lead to an overproduction of services, this risk is minimal in Bolivia, given the low current coverage levels. Yet, for the incentive to function, a separation between the financing entity (or insurer) and the provider is needed, as well as autonomy in the use of funds on the part of the provider. In Bolivia, there is no formal separation between the financing entity, in this case the municipality (and the SEDES for human resources), and the provider, since the health facilities are owned by the municipality. In practice, however, health facilities (especially hospitals) function with considerable autonomy. The new management model can further strengthen this autonomy by giving health network directors greater management power over the operation of the networks, and thus reinforcing incentives for increased production.

Limiting the autonomy of the providers in their use of reimbursed funds—as was done with the SBS—may generate perverse incentives that go against the provision of public insurance services. The SBS restricted providers' use of funds mainly to the purchase of drugs and inputs with a small margin left to finance other expenses, such as for example, human resources.[23] By contrast, public providers generally have full autonomy over the use of non-BHI income generated through user-fees. As a result, providers' health workers may have an incentive to provide non-BHI services and charge user fees (a part of which they might retain) instead of providing BHI services.

- It is thus important to ensure that the incentives to providing care under the SUMI are not inferior to those resulting from providing other services. This can be done, either by restricting the use of user-fees, or by allowing providers to use part of the SUMI funds to give performance-linked incentives to their staff.

The financial incentives included in the public health insurance fees probably only contributed marginally to increasing service provision, precisely because providers were limited in their use of these incentives. The increase in service provision was thus mainly a result of the increased demand for these interventions. This, in turn, arose through the lowering of economic barriers of access, the dissemination of public insurance benefits and the empowerment of the population. Nevertheless, it is likely that financial incentives had some effect, reflected in health facility improvements and indirect incentives to the personnel (through per diems, payment of transport, etc.). All of these most likely contributed to improved quality of care and working conditions for the personnel. Furthermore, in rural areas, the SBS gave facilities or districts a small quantity of funds to cover operational costs. These were important for these facilities and districts whose budget was otherwise very limited and whose expenditures were inflexible.

- The SUMI should consider including incentives in the payment mechanism and giving providers greater flexibility in the use of these resources. This should be complemented by close monitoring of the impact of these incentives.

The MOH together with the municipalities may want to encourage the participation of other providers in the public health insurance, either to expand access in areas where there are no public sector facilities, or eventually to enhance competition. Yet, to do so would probably require refining the payment mechanisms. Currently, it is not attractive for non-public providers to provide public insurance services because the reimbursement fees are calculated primarily over the cost of inputs (excluding human resources). They have an incentive to participate in the insurance scheme only when all their other costs are fixed, which means they may have unused installed capacity, including infrastructure, equipment and personnel. This could be the case of some Social

23. This was justified because the reimbursement fees were calculated to cover the cost of drugs and inputs, while human resources were financed by the central level and infrastructure and equipment through other non-SBS municipal funds.

Insurance Fund facilities but probably not of NGOs and for-profit private providers. Alternatively, they have an incentive to provide public insurance services if they already receive financing from other sources and the insurance represents an additional income. This is probably the case of many Church-run facilities and some NGOs.

- In the absence of these two conditions, the MOH could increase the reimbursement fees for other providers in order to cover some of the personnel and/or fixed costs. This should be done selectively only in those areas where participation of other providers is necessary to respond to unmet demand (or to enhance competition). This, in turn requires a careful analysis of each health service network, which is possible only in a framework of effective decentralization and participative elaboration of Local Health Plans.

Another advantage of the fee-for-service payment mechanism is that it requires reporting and control systems over the production of services. This entails a minimum level of administrative capacity and leads to the establishment of better information systems for the monitoring of service provision and provider efficiency. Yet, in Bolivia, the collected information has not been used to its full potential. Public health insurance data has not been compared to routine administrative data collected by the National Health Information System (SNIS), nor as an input for analysis and decisionmaking within the facilities and beyond.

- With the SUMI, it is critical to develop an information system for monitoring and evaluation that could be based on the SNIS, or if necessary, a modified version of the SNIS. In any case these should be complementary and not parallel systems.

The SUMI introduces changes in the payment mechanism that modify the incentive structure for providers in two opposite directions. On one hand, with the SUMI the payment mechanism shifts from fee-for-service to a fee for a package of services, thus giving providers the incentive to give priority to simpler procedures. For example, since a hospital receives the same (average) fee for a simple delivery as for a cesarean section, it can save money by doing more simple deliveries. This has strong advantages in avoiding excess use of more complex interventions and gives incentives for greater prevention efforts to avoid these complex (and costly) cases.

On the other hand the SUMI differentiates the reimbursement fees by level of complexity of the facilities.[24] If the fees are sufficiently higher in hospitals to cover their higher costs of providing the services, this may generate incentives that favor the provision of care in hospitals over health centers. Previously, since all facilities received the same fee, and since the package included mainly simple interventions, municipalities and health networks had an incentive to strengthen the first level of care. Now however, the fees reimbursed for packages of services are higher in complex facilities. As a result, health service networks may have an incentive to use higher-complexity facilities for simpler procedures.

- To prevent the under-funding of the first level of care, the differences in the fees reimbursed for each level of complexity should be minimized, and the composition of cases closely monitored in the future. Returning to a single fee for all should be considered.

Finally, the SUMI could be used to improve the functioning of the different levels of the health service network. Users usually prefer to go directly to the hospitals instead of going to their closest health post or health centers, even when their condition does not justify higher complexity care. To prevent this, conditions could be established that ensure that the different levels of care are respected and give incentives to improve the referral system. For example, the SUMI

24. This was justified because of the greater proportion of more complex cases in hospitals.

could establish that interventions are always free in the first level of care, but that they are only so in hospitals if the patients have been referred or in case of emergencies.

Conclusions

Since its implementation, public health insurance has been a key element to increase coverage of priority services. This achievement was made possible by providing free services and thus promoting demand and the empowerment of the population. Public health insurance also increased public expenditures on health and ensured their targeting towards national priorities. In addition, the insurance's financing mechanism, based on a per capita distribution to municipalities, contributed to improving equity in health care financing.

In the past, the insurance's principal challenges were: (i) a limited empowerment of the population, (ii) the low flexibility granted to municipalities in the use of earmarked funds, and (iii) limiting the municipalities' role to the administration of insurance funds. As a result, the potential arising from decentralization and the provision of local incentives for priority health service provision was not fully taken advantage of. The DILOS represents an opportunity to change this. For taking full advantage of this opportunity, the MOH should ensure that while urban municipalities keep up the funding of public health insurance, rural ones—especially those with a history of surpluses in their Municipal Health Accounts—are given more flexibility to use their resources in creative ways to make the services reach poor and dispersed communities.

The SUMI introduced substantial changes that create new opportunities, but also pose new challenges for equity, efficiency and user empowerment for health. First, it is key that the SUMI be implemented successfully to deliver on the new benefits it promised. Monitoring SUMI financing in terms of its sufficiency, distribution and use is critical to ensure equilibrium between fiscally responsible financing and the size of the public insurance package. This also entails: (i) supervising public sector and social security providers to ensure they are effectively providing SUMI services; (ii) solving bottlenecks in the supply of services; and (iii) adapting the services to the cultural practices of the indigenous populations.

In addition, the MOH should ensure that equity in financing public health services is preserved. The main risk to equity is that SUMI funds are absorbed by the large hospitals due to intensive use of higher complexity care by urban middle-class populations, thus leaving the more cost-effective primary care facilities—used more frequently by the poor—underfunded. There are several options to avoid this, including: (i) ensuring effective reimbursement of transport between rural facilities and referral hospitals; (ii) promoting a referral system by charging user fees to those who skip the first level of care and go directly to higher complexity hospitals; (iii) allowing rural municipalities to set higher reimbursement fees for their facilities; (iv) ensuring the reimbursement by the SUMI of promotion and prevention activities, especially related to nutrition, in rural municipalities. Finally, a strong monitoring and evaluation system is key to identify and respond to these potential risks.

CHAPTER 5

THE EPIDEMIOLOGICAL SHIELD

In this chapter, we present the government's response to the main communicable and vector-borne diseases prevalent in Bolivia under the umbrella policy of the Epidemiological Shield (ES). For each ES program, we provide a brief description of achievements over the last few years, followed by key challenges and specific recommendations. We then conclude with a brief summary of cross-cutting issues and recommendations.

Communicable and Vector-Borne Diseases in Bolivia

Chagas, malaria, and tuberculosis account for approximately 40 percent of the disease burden in Bolivia. This has significant adverse economic consequences for the population, especially the poor, who are at greater risk due to worse housing and working conditions. The economic losses associated with mortality and morbidity due to Chagas, malaria, and tuberculosis exceeded 7 percent of GDP in 1998. For Chagas alone, annual economic losses were estimated at US$189 million (2.6 percent of GDP), while losses attributed to malaria reached US$18.8 million (0.3 percent of GDP).[25]

To address the morbidity and mortality arising from these diseases—and following a drop in vaccination coverage in the mid-1990s—the Government launched the Epidemiological Shield (ES) in 1999 as one of the central components of the health sector reform. The ES focuses on preventing the country's communicable and vector-borne diseases through centrally financed programs. Its main components are: (i) the Extended Program of Immunizations; (ii) a series of stand-alone programs to tackle highly prevalent diseases such as Chagas, malaria, tuberculosis, leishmaniasis, and dengue; and (iii) the establishment of an epidemiological surveillance system to monitor the overall status of endemic diseases.

25. Medici and Bravo (1999). To estimate economic losses, the authors applied an indirect methodology based on the number of economically active people that get sick or die and the average income lost per person per year.

Epidemiological Shield Programs

The Expanded Program of Immunizations

As part of the reform efforts to reduce infant mortality, the MOH launched the Second Generation Expanded Immunization Program (EPI) with support from PAHO and other donors. The launch of EPI II responded to the drop in vaccination coverage in 1996, which was attributed to the Program's institutional weakness, as well as the government's insufficient and inconsistent allocation of funds to vaccines and the lack of a sustained social communications strategy to spur demand.

As a first step to revamping the EPI, the MOH incorporated the vaccination schemes into its priority reform policies. While maintaining financing from the central level, the vaccination schemes were included in the public health insurance as part of the framework of integral basic care for children under five years (IMCI). In addition, the coverage of vaccination with DPT3 and the number of municipalities at risk (those with coverage of DPT3 below 80 percent) were included as indicators in the annual performance agreements, both at the national and departmental level (see tables 3.1 and 3.2).

As a complementary action, the MOH made a commitment to the financing of the basic vaccination scheme and negotiated the availability of additional funds for this purpose. This commitment was included as one of the targets of the performance agreements signed with the international cooperation. The additional funds were obtained following negotiations with Social Security, and the decision that the Health Insurance Funds transfer to the MOH 5 percent of their annual income from contributions. In 1999, this agreement was set in the Budget Administration Law (Ley 2042), which specifies that these funds are to be used by the MOH for the prevention of disease through vaccination and other activities.

The EPI II strategy was key in reversing the drop in immunizations coverage observed in the years prior to the reform. While vaccination with DPT3 dropped to a low of 71 percent in 1996, it recovered with the reforms reaching 100 percent by 2002 according to administrative data (see Figure 1.2). The EPI II also led to the introduction of new vaccines (Hemophilus influenza type b and Hepatitis-B for the Pentavalente, as well as mumps and rubella) and achieved control of a 1998–2000 measles outbreak. In addition, the EPI II strengthened its management unit, built up the vaccine cold chain and implemented rapid response brigades.

A remaining challenge is the strengthening of EPI's surveillance and control system. Large data discrepancies exist between administrative figures and those estimated through surveys. For example, the 2000 MICS survey (UNICEF) estimates DPT3 vaccination coverage to be 72 percent compared with that year's SNIS figure of 89 percent. As a positive initial step in gathering more accurate data and resolving these discrepancies, the EPI participated in the development of the 2003 DHS survey. In addition, in the context of the MOH's new policies, further strengthening of EPI II management and surveillance is needed, in coordination with the SUMI and the DILOS.

On the financing side, while MOH financing for vaccines has improved substantially, additional efforts are urgently needed to meet the targets and ensure the sustainability of the program. Between 1998 and 1999, MOH financing for vaccines increased from US$500,000 to US$1.9 million. This rose further in 2000 when MOH financing reached US$ 4 million. However, MOH vaccine financing dropped again in 2001 and 2002 to US$2 million and US$3 million, respectively. In these years, the MOH did not meet the targets set for vaccine financing and incurred in substantial debt with PAHO's vaccine fund. Furthermore, the country had to borrow vaccines from neighboring countries to avoid stock ruptures. By mid-2003, this situation still hadn't been resolved.

Programs Aimed at Controlling Communicable and Vector-Borne Diseases

Malaria

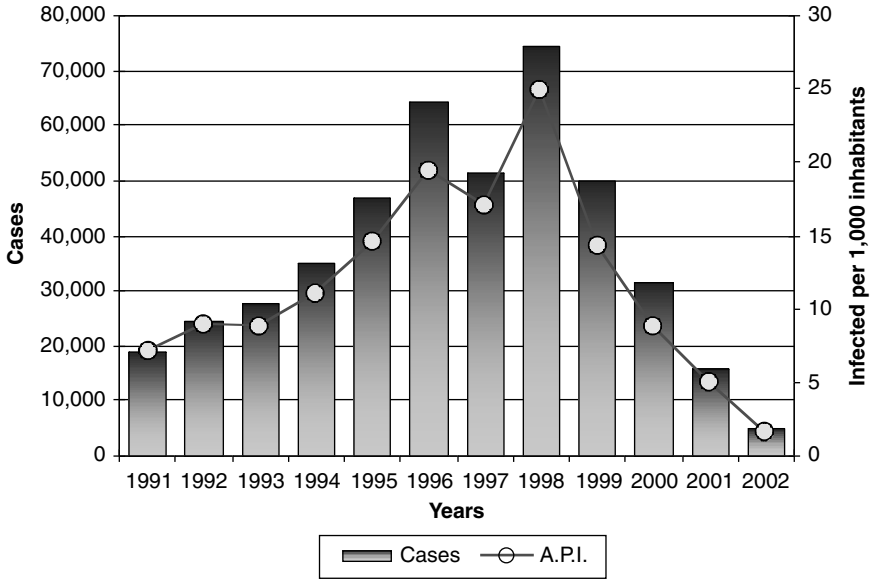
Bolivia was at high risk of malaria transmission in the late 1990s, with 40 percent of the population living in endemic areas. After a decade of registering a modest upward trend, the incidence of malaria increased dramatically in the early and mid-1990s, with the number of cases rising

from 19,000 in 1991 to over 74,000 in 1998. Meanwhile, the MOH's political and financial commitment to the malaria Program dropped (financing for the program fell from US$258,000 in 1996 to just US$57,500 in 1997 despite the increase in incidence) and was mainly directed at vector-control by massive insecticide spraying.

This situation was reversed in the late 1990s, when the government, with support from external donors, revamped the National Program for Malaria Control. The Program involved a comprehensive set of strategies directed not only at vector-control but also at the diagnosis and treatment of those infected, the strengthening of research capacities and community-involvement in the control of the disease through information, communication and education of populations in endemic areas. Other key components of the program were: (i) a clear focus on results with the introduction of malaria-related targets to the MOH's national and international commitments; and (ii) the involvement of community volunteers to carry out preventive activities.

The program was largely successful in achieving malaria control and improving health outcomes. From its 1998 peak, the number of malaria cases fell to 5,000 in 2002, or 25 percent of 1991 levels. The corresponding Annual Parasitic Index (API) dropped substantially, from 24.8 per 1,000 inhabitants living in endemic areas in 1998 to 1.6 in 2002 (Figure 5.1). While climatic conditions influenced the trend observed in the last decade, achievements can be attributed to the program. Specifically, the Program was successful in the struggle against malaria by plasmodium falciparum—the lethal type of the disease. The number of cases caused by plasmodium falciparum dropped from 11,400 in 1998 to 250 in 2002; and the proportion of malaria cases caused by this vector dropped from 15.4 percent to 5.1 percent between 1998 and 2001. This evidences a change in the epidemiological distribution of malaria in Bolivia and a relative risk reduction. At the same time, the incidence of malaria by plasmodium vivax—the other type of malaria that prevails in Bolivia—also decreased. Finally, the number of deaths due to malaria infection dropped from 28 in 1998 to zero in 2001; however, there may be a degree of under-reporting of malaria deaths due to the absence of an effective surveillance system. Further evidence of the impact of

FIGURE 5.1: EVOLUTION OF MALARIA CASES AND PARASITIC INDEX, 1991–2002



Source: National Program of Malaria Control, MOH.

the program comes from a simulation of the epidemic using a systems dynamics model. This model projects that the investments and actions to control malaria undertaken between 1998 and 2001 would reduce the IPA to close to 5, thus confirming the observed trend.

Despite the remarkable recent achievements, the potential risk of malaria transmission still affects 136 out of the country's 314 municipalities. By 2001, it was estimated that 38 percent of the population lived in malaria-endemic areas, covering 75 percent of the national territory. Moreover, despite the overall reduction of the API, high risk endemic areas still exist. For instance, 2.7 percent of inhabitants living in the Amazonian region were infected in 2001, accounting for more than 50 percent of the total number of malaria cases in the country. Eco-epidemiological and geographic conditions make it costly to keep reducing malaria incidence. Yet, unless the disease is controlled in the region, malaria will remain a primary health concern.

Financing of the program increased substantially in recent years, with resources coming primarily from the government and external donors. Between 1999 and 2001, US$3.7 million were allocated to the program with US$2 million coming from the central government and the remainder from UNICEF, the Canadian cooperation and USAID. Some NGOs also supported the control of the disease by providing impregnated mosquito bed nets and carrying out information, communication, and education activities. In addition, while financing was predominantly vertical, the government attempted to involve departmental and municipal governments in endemic areas in the provision of financial counterparts for malaria control. This, however, was not entirely successful. Local authorities got more involved in the program, but some municipal and departmental governments did not manage to meet their the financial commitments.

Available resources, however, are far from enough, placing the sustainability of recent achievements at risk. In 2001 the cost of the program per inhabitant in endemic areas was US$0.32 (a decrease when compared to US$0.50 a year earlier and well below the US$0.57 spent per inhabitant in malaria-endemic areas across the LAC Region). This means that to cover all the population living in endemic areas would cost about US$1 million per year. The parasitic index is highly sensitive to the availability of financial resources. However, external financing came to an end in 2002. Moreover, due to the social crisis in early 2003, the approval of the public sector budget was delayed. This left the program with no resources to overcome what might be a malaria outbreak; the number of cases reached approximately 3,700 in the first four months of 2003, somewhat below the total number of cases registered in the entire previous year. Historic trends suggest program financing is triggered by high IPAs and maintained until the IPA is reduced, after which, financing subsides. This in turn again leads to a rise in the IPA, until high enough levels are reached to induce a political response and renewed financial commitment. These cyclical trends prove much more costly than ensuring the minimal annual financing sufficient to keep the IPA below 2.5, once this level has been reached.

In this context, a first pressing challenge is to ensure the financial sustainability of the malaria program. So far, the program has been vertically financed and implemented through the SEDES. The national government has to ensure minimum continuous financing of the program, but in addition, it could seek complementary municipal financing, for example, from remnants of the Municipal Health Accounts earmarked to finance the SUMI (see Chapter 4). It is expected that rural municipalities will not spend all their resources available for the SUMI, given their lack of installed capacity for higher complexity and more costly care. SUMI regulations allow municipalities to spend the remaining resources from the Municipal Health Accounts in sanitary infrastructure and special public health programs. These could thus be destined to support the malaria program in high incidence municipalities. An additional strategy would be to involve the private sector in the control of the disease. The link between malaria transmission and seasonal migration to the Amazonian region during chestnut harvest time may provide incentives for private sector involvement.

Second, highly cost-effective strategies, such as the involvement of volunteers, should be maintained to assure community participation and sustainability of the program. To some extent,

the control of malaria has been successful because of the increased involvement of volunteer community collaborators—most of them indigenous—in activities such as fumigation and the provision of diagnosis and treatment. Currently, there are more than 3,500 volunteers who have detected almost 20 percent of the total number of malaria cases. These volunteers are a good alternative for poor rural communities with a shortage of health staff. In the context of the EXTENSA program, the ASISTES could take on the tasks of the volunteers of the malaria program.

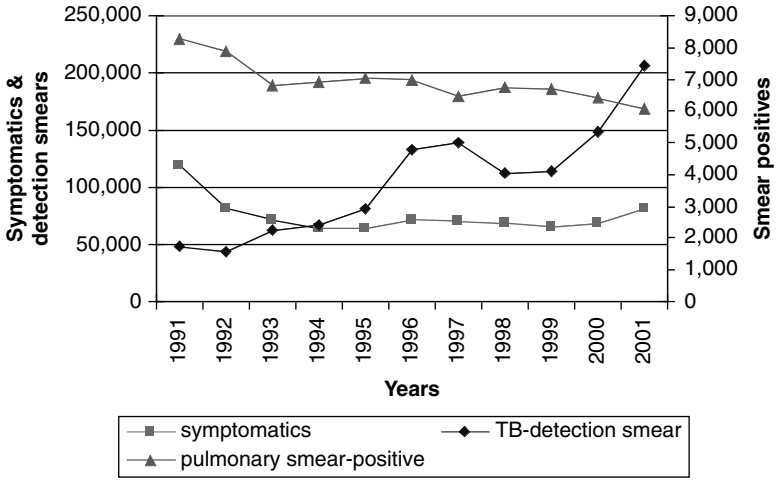
Third, the surveillance system needs to be strengthened. Malaria is far from being controlled and official reports are thought to lack information on asymptomatic malaria infections that could be even higher than the reported cases. Finally, research activities also need to be reinforced in order to address biological factors that perpetuate transmission of the disease such as resistance to malaria drugs.

Tuberculosis

The Tuberculosis control program is a long-standing and well-established program. TB control activities in the country started as early as 1982, and since the mid-1980s, actions aimed at the diagnosis and treatment of the disease, as well as the implementation of preventive measures, have been integrated at the level of primary health care facilities. This, combined with efforts to move services even closer to the infected populations, enabled the program to increase its coverage. In 1994, the program started applying the Directly Observed Treatment Short-course (DOTS) strategy, which has been successful in other developing countries.

The program achieved a reasonable reduction in TB incidence in the last decade; nevertheless, the country's TB incidence is still among the highest in Latin America. The incidence of Tuberculosis dropped from 164 per 100,000 inhabitants in 1991 to 105 in 2001. This corresponds to a drop in the annual number of TB cases from 11,220 to 9,280. The pulmonary type of TB accounts for 70 percent of the total number of cases in the country. Between 1991 and 2000, the number of TB-detection smears increased sharply from 49,100 to 148,920. Yet, the number of pulmonary smear-positive TB cases decreased from 8,270 to 6,400 (Figure 5.2). This suggests that the program was relatively well focused since its inception with few undetected or untreated cases in the past. In addition to an increase in coverage, the quality of the program also improved. The cure rate increased from 60 percent in 1991 to 82 percent among all detected

FIGURE 5.2: TB: SYMPTOMATICS, DETECTION SMEARS AND POSITIVES (1991–2001)



Source: Tuberculosis Control Program, MOH.

cohorts of smear-positive cases. The program is thus close to meeting the cure rate target of 85 percent set by WHO. However, the annual risk of TB infection (that is, the percentage of the population that will be infected or re-infected in one year) is still high, estimated between 2 and 3 percent, thus affecting the incidence of TB in Bolivia.

To improve its effectiveness, the program customized the DOTS strategy to ensure increased community participation in TB control. This included the provision of sanitary education to those infected and their families, regular home visits and a community surveillance system integrated in the program's information and registration system. TB treatment is thus not only provided and monitored by the official health network but also by community agents. The DOTS strategy, including its community component, is currently being implemented in 30 high-risk municipalities, which account for 70 percent of reported TB cases. In addition to the introduction of DOTS, the program modified the information and registration system to provide reliable and timely data on diagnosis and monitoring as an input for decisionmaking. Moreover, under the ES, the laboratory network was strengthened, offering free diagnosis to every patient with respiratory symptoms. As for vaccination, the EPI covers TB preventive measures for newborns; BCG vaccination coverage reached 94 percent in 2001 and since 1992, has never been below 80 percent. Recently, the program also started applying chemioprophylaxis in children under 6 years. Finally, while HIV/AIDS prevalence is low in the country, the program carried out a serologic survey and found co-infection rates below 1 percent.

Financing of the TB program has been relatively predictable and reliable. The program is centrally financed with the bulk of resources coming from the international cooperation. Between 1999 and 2002, US$2.57 million were allocated to the program of which more than 60 percent was financed by DFID. On average, the program counts with US$643,000 per year, with no major ups and downs. Financing for the program has been secured until 2005 and additional funds are expected from the Global Fund for HIV/AIDS, Malaria and Tuberculosis.

To accelerate the pace of reduction in TB incidence, the MOH faces the challenge of further strengthening the surveillance system. It is estimated that the number of people infected with TB is far above that notified by the SEDES. This is of concern given that an undiagnosed and untreated positive TB case can infect 10 to 12 people. Underdetection, compounded with late diagnosis, might explain why progress in the reduction of TB incidence has not been greater.

Another challenge is the alignment of departmental priorities with national health priorities. Despite registering fairly stable financing, the program has seen varying degrees of execution and political commitment at the departmental level. For instance, in 2001, La Paz accounted for 23 percent of the total number of TB cases registered in the country, but no health service in the department was applying the DOTS strategy. This resulted in very low cure rates, a high annual risk of infection, and the failure of the department to reach its TB targets three years in a row. The introduction of incentives for the SEDES to meet their health (and especially ES-related) targets could be explored as a potential palliative to the lack of departmental commitment.

Chagas

Chagas disease, transmitted by the *vinchuca* vector, continues to pose a serious health threat in the country. Chagas disease is endemic in 60 percent of the Bolivian territory. Prevalence of human infection is 22 percent, affecting 1.8 million people, and 4 million people are at risk of contracting the infection. Vector transmission is the main threat due to poor-quality housing, especially in rural areas, followed by infection from blood transfusion and congenital transmission.

Activities directed at controlling Chagas transmission started in the early 1990s, but gained greater importance with the implementation of the Epidemiological Shield. Initially, the program was supported by donors (WFP, UNDP, and USAID) who focused on setting its administrative and operational framework. Specific activities such as vector-control through fumigation and housing improvement were also carried out in the early 1990s, despite low levels of financial support. With the launch of the ES, Chagas disease control became one of the country's primary

health concerns, and the program developed a comprehensive set of strategies aimed at interrupting disease transmission. These include the application of residual insecticides, housing improvements, blood screening to prevent transmission through transfusion, treatment of children under 5 years old, education of people living in endemic areas and, finally, the implementation of a monitoring and evaluation system.

As a result, important progress was achieved in the last few years in the interruption of Chagas disease transmission, mainly through vector control. Residual insecticides were successfully applied and house infestation rates in endemic areas dropped to 4 percent by the end of the second spraying cycle, from 79 percent in 1998. In the short-term, fumigation is the most effective strategy to control the disease. Yet, for medium and long-term control, education activities and housing improvements that make them unsuitable for vector colonization are both key. Consequently, the MOH, in conjunction with the Housing and Basic Services Ministry and some NGOs have been working on replacing mud-walled, thatched-roof houses with plaster-walled, tile roof ones. The number of improved rural houses is expected to reach 700,000 over the next few years.

The program also launched activities to reduce contagion from blood transfusions. Infection rates among blood recipients reached 24 percent, the highest in the region. In response, the program set up a systematic screening of blood donors to control blood bank prevalence rates. In addition, since effective treatment has been proved to be useful only in the case of recent infection, the program established protocols for the treatment of children under 5 years old and, in conjunction with the recently launched SUMI, ongoing detection and treatment of congenital Chagas. Important entomological and epidemiological research efforts have also been made to readapt control strategies.

Program financing is assured mainly by external donors. In 2000, the program started receiving important financing with the greater part of resources coming from the IADB and the central government. On average, US$4 million per year are now allocated to the program. It is expected that the disease will be under control by 2005, which is when the IADB project ends.

Key challenges for the Chagas program are epidemiological surveillance and strategies to build up local capacities. Research capacities need to be strengthened to gather greater epidemiological information about the magnitude of the infection. In addition, surveillance systems need to be strengthened to adequately monitor potential re-infestation of dwellings. On the other hand, once the disease is controlled, the program expects to hand post-control responsibilities over to departmental and municipal levels. However, the program has so far not been prioritized beyond the central level, and there is no capacity for local planning and conduction. In preparation for a future decentralization of activities to departmental and municipal levels, the program will have to develop a strategy to build up local capacities.

Other communicable diseases

In recent years, the ES broadened its scope to include minor endemic diseases such as leishmaniasis, yellow fever, classic dengue, and hemorrhagic dengue. In the case of Leishmaniasis, the percentage of the population at risk reached 14 percent in 2001, while the incidence of the disease rose from 25 per 100,000 inhabitants in 1997 to 30 in 1999. At that time, no program to tackle potential outbreaks of diseases other than malaria and Chagas was in place. However, fumigation activities for vector-control under ongoing programs have, to some extent, mitigated the spread of leishmaniasis. Given the limited funds from the government, the involvement of NGOs in the provision of diagnosis and treatment has been central to controlling leishmaniasis. Thanks to NGO involvement, by 2001, the leishmaniasis incidence dropped to 22.9 per 100,000 inhabitants and the number of positive cases fell to 1,974.

The emergence of endemic diseases has posed a challenge for the government to increase its capacity to respond in the event of endemic outbreaks. For this purpose, further strengthening of the epidemiological surveillance system will be critical. In addition, timely response in the event

of potential outbreaks entails availability of corresponding funds. For this purpose, the government should consider raising a contingent fund aimed at controlling endemic threats as well as natural disasters.

The Epidemiological Surveillance System

The government has taken initial steps to effectively put into place an epidemiological surveillance system, but this still needs substantial strengthening. Since the mid-1990s, the SNIS has been providing basic diagnosis and treatment data, including indicators set in the PRS. These however, do not correspond to the type of information the national programs need for decision-making (neither for planning nor for evaluation). To counteract these weaknesses, each program has developed its own epidemiological surveillance subsystems. Better coordination between the SNIS and the national programs has to be achieved to avoid discrepancies in reported indicators. Recent progress in this direction includes the establishment of an organizational framework to improve technical and managerial capacities for epidemiological surveillance.

The system needs to improve its capacity to prevent, control and monitor endemic diseases. This includes the capacity for early warning and control mechanisms to deal with outbreaks. Actions under the health services unit such as the putting in place of laboratory and blood-bank networks and the community capacity-building program will strongly support surveillance activities in this direction. Also key, particularly to enhance timely responses, is strengthening the resolution capacity at the local level. Yet, epidemiological surveillance functions at each level have to be well defined before decentralization takes place to avoid fragmentation. Finally, control and surveillance activities have to be better integrated, taking into account the particular features of each disease.

Conclusions and Recommendations

The government has made important progress in the control of communicable diseases in the last few years. Under the Epidemiological Shield, the coverage and quality of national programs improved significantly. Furthermore, national political and financial commitment for these programs increased, thus facilitating their effective implementation. However, to ensure sustained progress, the MOH will have to tackle several challenges, including: (i) aligning local health priorities with national programs; (ii) strengthening coordination between the different ES subprograms; (iii) ensuring sustainable financing; and (iv) clarifying the relationship between the ES and other health reform policies.

There is an urgent need to align local health priorities with national ones. The use of regional performance agreements to ensure SEDES meet set health targets has not been as successful in the case of communicable diseases as other health outcomes. In addition, while vertical financing and implementation has avoided the fragmentation of responsibilities, in some instances, low political commitment at the departmental level undermined the execution of the programs. One option to address this challenge is to introduce nonfinancial incentives to assure that local authorities pursue endemic-related outcomes. In this line, the TB program is already considering initiatives such as rewarding the staff working in the SEDES with the best results with international courses or training.

Second, coordination has to be ensured to minimize the development of vertical stand-alone programs. Each ES component is financed and run as a totally independent program, thus ignoring the advantages of combining similar activities. For instance, endemic areas of malaria and Chagas overlap and these programs have very similar vector-control activities. However, the latter are carried out with no coordination; duplication of efforts is evident. This extends to other activities such as communication strategies and home visits and has been replicated in lower levels of the health system with each SEDES having specific coordinators for Chagas, malaria and TB. Some coordination has been achieved at the national level. To enhance coordination within the SEDES, regional Communicable Disease Coordinators should be designated.

Third, predictable and reliable financing has to be assured for national programs. Most of the resources to fund national programs are disbursed during the third and fourth quarters of the year and disbursement delays affect their execution. The government has taken steps to ensure that financing is maintained through the protection of social expenditures under the social safety net program. These efforts should be maintained. On the other hand, the donor community contributed to the challenges posed by stand-alone programs by providing assistance directed at specific programs and not considering the ES as a whole. This situation has lead to a delay in the start of activities under the Chagas program because of a lack of financing—even though the malaria program was simultaneously receiving strong support. Currently, the Chagas program is adequately financed but malaria has run out of funds, threatening the progress made so far. Greater coordination in donor financing, which could be done by pooling external resources for the ES as a whole, would help mitigate these problems.

Finally, the relationship between the national programs and other health reform policies and programs still needs to be clarified. The legislation states that diagnosis and treatment costs of endemic diseases (Chagas, TB, Malaria) for pregnant women and children under 5 years—the SUMI target population—are covered by national programs. The responsibilities relating to the financing and provision of inputs from national programs in cases of overlap with other national policies (such as SUMI and EXTENSA) should be clearly established. This is key to avoid duplication in financing and stock ruptures.

CHAPTER 6

HUMAN RESOURCES FOR HEALTH IN BOLIVIA

Human resources for health (HRH), and particularly staffing levels, staff distribution, and staff productivity have recently become primary concerns of the ongoing health sector reform. The National Dialogue 2000[26] stressed the shortage and imbalanced geographical distribution of human resources for health (HRH) as a key cause of inequalities of access to health care. In addition, Bolivia's Poverty Reduction Strategy recommended the "efficient management of human resources for health" as the country's first priority to reach the objectives of the health sector reform agenda. In response, in 2002, the government incorporated an additional 20 percent of health workers into the public health system financed with resources generated from the HIPC initiative. The purpose of this chapter is to discuss the status quo and recent trends with respect to these key HRH issues.

Following this introduction, we provide background information on HRH in Bolivia. In the third section, we present key findings of an analysis of human resource requirements and their availability, geographical distribution and skill mix. In the fourth section, we review information on staff productivity and analyze the currently prevailing monetary incentive structure. Finally, we discuss findings and provide recommendations.

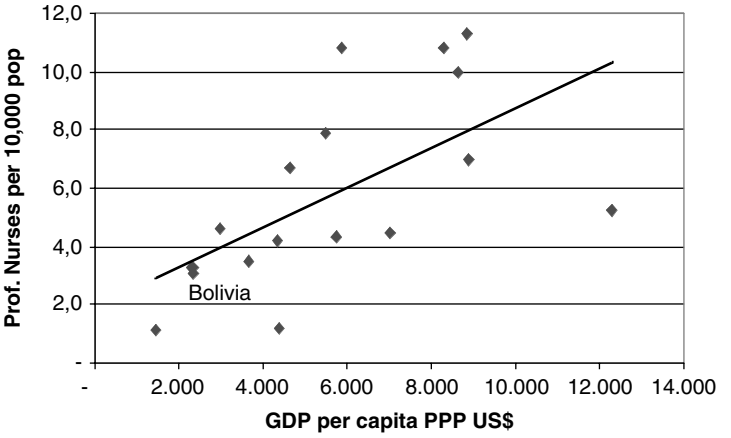
Background Information

The quantitative findings presented in this chapter draw primarily on the MOH human resource database in its 2002 update, based on payroll data.[27] A comparison of the employed data with information available from other sources reveals some inconsistencies, casting doubt on the

26. The "National Dialogue 2000" consolidated demands from local and national governments, civil society and other actors, and culminated in the Bolivian Poverty Reduction Strategy (PRS) and the National Dialogue Law (passed in July 2001), which legislates the use of funds liberated through HIPC II debt-relief.

27. The database reflects the HRH working in 2000 health posts and centers and 51 basic hospitals throughout the country. For part of the analysis, we merged this dataset with information on staff employed under the HIPC initiative. The latter information was collected by the MOH in the second semester of 2002.

FIGURE 6.1: PROFESSIONAL NURSES AND GDP PER CAPITA LATIN AMERICAN COUNTRIES 1999



Source: PAHO Basic Health Indicators 1999.

quality of the data set underlying the analysis. However, a sensitivity analysis indicated that the findings are sufficiently robust to draw conclusions.

In 2001, prior to a wave of recruitments financed under the Highly-Indebted Poor Country debt relief initiative (HIPC), about 5,500 doctors, 2,800 professional nurses, and 6,400 auxiliary nurses were employed in the governmental and social insurance based delivery systems. This corresponds to 6.6 doctors and 3.4 professional nurses per 10,000 inhabitants. These staff per population ratios seem low when compared to the Latin American average of 15.4 doctors and 6.7 nurses, however, they are similar to those prevailing in countries with comparable levels of GDP per capita (see Figure 6.1).

Almost half of all doctors and nurses employed by the government work in the tertiary care level. This bias towards the tertiary care level varies between health worker cadres: while 59 percent of auxiliary nurses work in primary and secondary level facilities, only 32 percent of professional nurses and 39 percent of doctors work in these facilities. The results presented in the following sections reflect analyses that focused on HRH employed at the primary and secondary level of care.

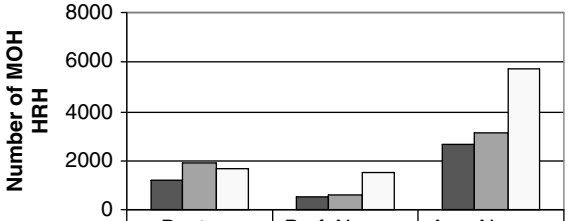
Main Findings

HRH—Requirements versus Availability, Geographical Distribution, and Skill Mix

We estimated the human resource requirements of governmental health services in the first and second level of care, based on the MOH's programmatic staffing regulations.[28] Human resource requirements were calculated as a function of recommended staffing levels and existing infrastructure. The resulting requirements were compared with actual staffing levels to estimate shortages. The analysis yields an overall human resource requirement of 8,895 full time equivalents (FTEs) for the MOH's first and second level facilities. In contrast, the number of actually employed health workers was 5,660 FTEs in 2002, which includes approximately 1200 health workers recruited under the HIPC initiative. Thus, a shortage of approximately 3,230 FTEs prevailed by

28. First level: 1 doctor and 1 professional nurse per 3,000 inhabitants and 1 auxiliary nurse for between 650 and 1,000 inhabitants. Second level: 5 doctors, 3 prof. nurses and 6 auxiliary nurses per provincial (network) hospital.

FIGURE 6.2: STAFFING LEVELS VS. REQUIREMENTS MOH FIRST AND SECOND LEVEL FACILITIES



	Doctors	Prof. Nurses	Aux. Nurses
2001 staffing	1245	507	2665
2002 staffing	1940	602	3118
HR requirements	1652	1525	5716

Source: Authors, based on MOH HR database.

the end of year 2002. This corresponds to a shortage of 2,600 auxiliary nurses, a shortage of 925 professional nurses and a surplus of 290 doctors.

Under the HIPC initiative, the workforce grew substantially. Prior to the initiative, the first and second level MOH workforce constituted 4,420 FTEs, or 50 percent of total requirements. The recruitment financed under the HIPC initiative closed the overall HR gap by approximately 30 percent, but the impact varied between cadres with implications for the skill mix of the total health work force. Of the 1250 additionally recruited health workers, 700 were doctors, 100 professional nurses, and 450 auxiliary nurses. The recruitment resulted in an overall surplus of doctors, while shortages of nurses remained significant. In Figure 6.2, we summarize staffing levels prior to the HIPC initiative (2001), staffing levels after the HIPC funded recruitment (2002), and estimates of human resource requirements broken down by cadre.

Following the HIPC financed staff recruitment, staff per population ratios of the governmental primary and secondary level health networks increased to 23 doctors and 7.3 professional nurses per 100,000 population. The resulting ratio of doctors per population is twice the number recommended for the delivery of a package of core clinical and public health interventions at levels of universal coverage by the *World Development Report 1993.* The nurse/doctor ratio, however, remains low: 0.3 professional nurses per doctor and slightly under 2 nurses (auxiliary + professional) per doctor. In comparison, the ratio recommended by the *World Development Report 1993* is 2 to 4 nurses per doctor (see Table 6.1).

In the above described analysis, we estimated human resource requirements on the basis of existing levels of infrastructure. The number of facilities existing in 2002, however, is insufficient to provide health services to the whole population. In a separate analysis, we estimated the number of additional facilities that would be required to achieve universal access to primary and secondary care using MOH infrastructure standards.[29] Based on the results, we modeled the HRH requirements as described earlier. We estimated that human resource requirements would mount up to 14,500 FTEs at the national level. Ideally, this figure would be compared to future availability of human resources. Due to a lack of data, we were not able to model the latter. Using information on the current size of the workforce as a proxy, differences between requirements and availability would be in the scale of 8,850 FTEs (965 doctors, 1,940 professional nurses, and

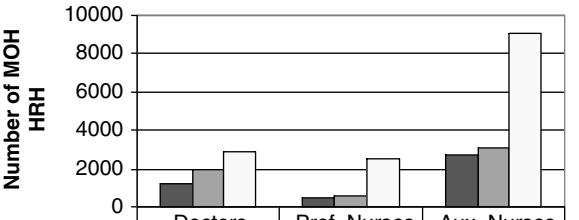
29. 1 health post for 300-2,000 pop; one health center for 2,000–10,000 pop; 1 provincial hosp. for 10,000–50,000 pop..

TABLE 6.1: MOH HRH PER 100,000 INHABITANTS (PRIMARY AND SECONDARY LEVEL OF CARE)

	Doctors	Prof. Nurses	Aux. Nurses
2001	15	6,4	32
After HIPC (2002)	23	7,3	38
Recommended (existing facilities)	20	18	69
Standard Requirement for Min package*	10	20–40	

*Minimal requirement for basic clinical and public health interventions (WDR 1993).
Source: Authors, based on MOH HR database and WDR 93.

FIGURE 6.3: STAFFING LEVELS VS. REQUIREMENTS BASED ON IDEAL NO. OF 1ST/2ND LEVEL FACILITIES



	Doctors	Prof. Nurses	Aux. Nurses
2001 staffing	1245	507	2665
2002 staffing	1940	602	3118
HR requirements	2905	2540	9066

Source: Authors, based on MOH HR database.

5,945 auxiliary nurses; see Figure 6.3). Whereas this information is less relevant for short-term policy decisions, it provides guidance for strategic HRH planning towards universal coverage of the health insurance package.

The availability of human resources varies substantially between health service networks. At the primary and secondary care level, the lowest observed staff per population ratio of a health service network is 3 per 10,000 population compared to a high of 19. On average, urban health service networks[30] dispose of 9.4 FTEs per 10,000 population and rural networks of 10.9. However, in urban areas: (i) a greater proportion of the staff work in second level hospitals (2.2 FTEs per 10,000 compared to 1.6 in rural networks) and (ii) a greater percentage of the staff are professional workers (48 percent compared to 37 percent in rural areas). Thus, rural networks tend to have less staff available at the secondary level of care and lower average skill levels. Similarly, lower staff levels and less skilled health workers are observed in networks serving indigenous populations.

30. The analysis is based on health service networks as the territorial space including first and second level facilities, corresponding to the health district classification used by the MOH in 2001. In addition, we use the urban/rural classification of municipalities established by the National Health Information System (SNIS).

TABLE 6.2: NUMBER OF NETWORKS IN SURPLUS OR SHORTAGE

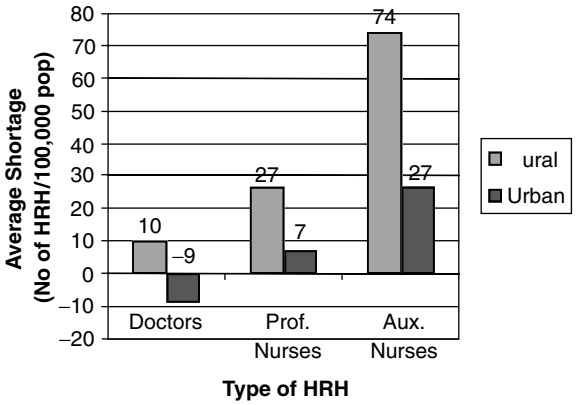
		Shortage* between	
	Surplus	**0%–50%**	**50%–100%**
Doctors	35	33	14
Prof. Nurses	4	17	61
Aux. Nurses	8	34	40

*The shortage is calculated over the recommended staff number. A 100 percent shortage means the network has no staff.

TABLE 6.3: NUMBER OF NETWORKS WITH SURPLUS/SHORTAGES OF DOCTORS

	Urban	**Rural**	**Total**
Surplus	14	21	35
Shortage	3	44	47
Total	17	65	82

FIGURE 6.4: AVERAGE HRH SHORTAGE BY TYPE OF NETWORK



Source: Authors, based on MOH HR database.

Imbalances remain when we relax infrastructure constraints and compare human resource requirements and availability according to population needs. We estimate that some health networks have shortages of up to 160 FTEs, while others have surpluses of the same magnitude. In the case of doctors, most networks have surpluses, in the case of nurses, most networks have shortages (see Table 6.2). Almost all urban networks have surpluses of doctors and most rural networks shortages (see Table 6.3). The shortage of professional nurses in rural areas is four times greater than in urban areas, and the shortage of auxiliary nurses in rural areas three times greater than in urban areas (Figure 6.4).

TABLE 6.4: ALLOCATION OF HIPC STAFF

	Shortage/(Surplus)	
Type of Network	**Urban**	**Rural**
Before HIPC	(218)	625
After HIPC	(486)	198
HIPC doctors allocated	268	427

Source: Authors, based on MOH HR database.

While the recruitment under the HIPC initiative reduced staff shortages in urban and rural areas, the allocation of staff was suboptimal with respect to the objective of addressing geographical imbalances. Prior to the HIPC initiative, urban networks had a total shortage of 360 FTEs at the primary and secondary level of care, whereas rural networks a shortage of 4,120. Under the initiative, 450 staff were assigned to urban networks, turning the shortage into a surplus, and 790 staff were allocated to rural networks, which corresponds to a 20 percent reduction of the shortage. The skewed allocation of staff under the initiative was even more pronounced in the case of physicians. Prior to the initiative, urban networks had a surplus of 218 doctors, while rural networks a shortage of 625 doctors. Under the initiative, 268 doctors were allocated to urban networks and 427 to rural ones (see Table 6.4). The first phase of the initiative thus resulted in surpluses in urban areas. But if all doctors had been assigned to rural networks, the total shortage in these networks could have been resolved.

The MOH had envisaged an allocation process of staff additionally recruited under the HIPC initiative with the following key mechanisms to reduce imbalances in spatial staff distribution: (i) an allocation formula that gives priority to municipalities with higher IMRs and lower population densities (rural municipalities); (ii) the introduction of monetary and non-monetary incentives linked to productivity and rural residence; (iii) the implementation of hiring modalities that increase local participation; and (iv) proposing that the HIPC staff be hired outside of the MOH payroll, thus enabling more flexibility in salary setting. The last point was rejected, but all other measures were introduced in the regulations governing the National Dialogue Law.

However, the envisaged staff allocation process was significantly changed during implementation. The allocation according to the established formula was followed by numerous negotiations and reallocations at the departmental level. In addition, rural municipalities faced difficulties attracting specialized doctors, resulting in vacant posts. The monetary and non-monetary incentives linked to productivity and rural residence were never introduced. Finally, the implementation of the new hiring modality for HIPC staff varied between regions. This new hiring modality was based on the setting up of a local committee that would be responsible for the selection of HIPC staff. This committee consisted of four members: a representative of the municipality, one from organized civil society, one from the SEDES (representing the departmental Professional Society) and the director of the district or hospital recruiting the HRH. In some areas, the committee functioned effectively and led to a shared recruitment between the sector and the local representatives.

Staff Productivity and Monetary Incentive Structures

Evidence suggests that the productivity of health workers in Bolivia could be significantly improved. Absences and strikes are the main causes of impaired staff productivity. Human resource audits in public hospitals and visits to rural districts[31] indicate that there is a lack of monitoring of

31. "Auditorias de RRHH en el Hospital Viedma (Cochabamba), Hospital del Niño (Santa Cruz), Hospital Municipal Boliviano Holandes (El Alto). MOH 2001–2002." and interviews in five districts (2002).

the attendance of staff (especially doctors), attendance cards are incomplete, workers come in late, replacements and absences are arranged informally and working shifts are poorly defined. Absences are institutionalized in cases where rural health workers have to travel to the departmental capitals to collect their salaries. During these absences, which can last from one to three days, the facilities are often left unattended. Strikes are another significant cause of absences. In the last two years, health workers spent on average between 4 and 7 weeks per year on strike. This estimate does not include regional strikes. In the first four months of 2002, health workers were on national strikes for 20 days (or 25 percent of the time). Main reasons for strikes are payment delays, demands for higher salaries and in 2001, the opposition to the proposal (which was later abandoned) to decentralize HRH administration and management functions to municipalities.

District directors report excess training and high turnover rates as additional factors hampering the productivity of health workers. In general, training activities are considered as interventions to improve staff productivity, as they are a source of motivation. In addition, they are considered measures to improve overall efficiency by enhancing service quality. However, the interviews revealed that in Bolivia training activities are poorly coordinated: staff are sent on training frequently, creating conflicts with their planned health service delivery activities and leading to decreased access to services with limited improvements in service quality. Similarly, staff reallocation can be a tool to improve staff productivity and service quality. The excessive staff turnover observed in the country results in additional absences and other productivity losses such as staff lacking facility specific skills. MOH officials report turnover rates between 10 and 30 percent per year. An analysis of a random sample of staff in governmental facilities in three districts (urban, semi-urban and rural) over the period of 1999 to 2002 revealed that turnover rates are significantly higher, ranging between 50 and 100 percent per year. The turnover rate of managerial staff is reported even higher for some regions. For example, the Regional Health Director of Santa Cruz changed five times in 2001.

A final concern with respect to staff productivity and service efficiency is the concentration of working shifts in the morning. Evidence suggests that most working shifts are in the morning. This pattern partly results from the fact that 30 percent of governmentally-employed doctors work part-time, or three hours per day. The high proportion of part-time physicians is linked to strong financial incentives to practice concurrently in the private sector. Whereas high staffing levels in morning shifts potentially match the demand for services, a mismatch with available infrastructure is observed in some hospitals with doctors competing for consultation rooms.

The presented indicators of impaired staff productivity correlate with estimates of consultations per hour for doctors and nurses, which are below MOH standards. MOH regulations stipulate that doctors should see on average 4 patients per hour and nurses 2.4 patients per hour. However, doctors employed at governmental primary and secondary care facilities see on average only 2.9 patients per hour and nurses at the same facilities perform an average of 1.1 consultations per hour.[32]

An analysis of the MOH's budget structure indicates that it does not include incentive schemes for improved service provision or working in underserved areas. In 2001, the MOH spent 80 percent of its budget on its wage bill. Approximately 70 percent of the wage bill was determined by the job classification of employees. Promotion opportunities for clinical staff (nurses, physicians) are limited to administrative positions. Thus, promotion opportunities do not provide incentives or rewards impacting directly on service provision. Approximately 17 percent of the wage bill (US$11 million) was spent within the framework of a reward system linked to staff seniority, union affiliation, professional specialization and location (Table 6.5). The remaining 13 percent of the wage bill was spent on health insurance contributions, pension schemes, housing subsidies and family allowances.

32. These estimates are based on the following assumptions: 30 hours of work per week, and 42 weeks of work per year (4 weeks holidays, 4 weeks strikes and 2 weeks of training). Data sources: MSPS and SNIS.

TABLE 6.5: COMPOSITION OF MOH WAGE BILL 2001

	Thousands of US$	%
Basic Salaries	42,501	70%
Health Insurance	4,844	8%
Pensions	947	2%
Housing Subsidy	969	2%
Family Allowances	541	1%
Seniority	2,629	4%
Worker's Union Bonus*[a]	1,100	2%
Border Bonus	1,313	2%
Prof. Specialization Bonus	5,498	9%
Escalafón	550	1%
Total	**60,892**	**100%**

*Departmental governments paid an additional $300,000 for this bonus.

[a]This bonus has had a variety of names, the current one being *Bono de Vacunación*, or Vaccination Bonus. However, since it is not linked to vaccination activities, but to union affiliation for health workers, we refer to it in this study as the Worker's Union Bonus.

Source: MOH 2001.

The reward system implicit to the remuneration scheme does not provide incentives to work in underserved rural areas and is not linked to staff performance. Seniority bonuses are paid according to the number of years worked in the system. The worker's union bonus is granted to all non-professional health workers affiliated with the workers union (*Confederación Sindical de Trabajadores de Salud de Bolivia*-CSTSB). The border bonus is a geographically tied incentive, but not strictly linked to urban/rural divides since it is given to all staff working within 50 km from a border (and to all HRH in the departments of Beni and Pando),[33] areas that are not necessarily considered rural. The professional specialization bonus rewards years of post-graduate training, according to three categories (one, two and more than three years of training). The "Escalafón" mainly rewards managerial and research activities and seniority of professional health workers. Working in rural areas figures as an additional criterion, but it represents only a fifth of the points needed to qualify for the "Escafalón." Similar amounts of points are gained through participation in union activities.[34] In Table 6.6, we summarize the criteria relevant to the different bonuses and the amount they represent on top of the basic monthly salary of doctors, professional and auxiliary nurses.

According to the data presented in Table 6.6, doctors and professional nurses face an incentive structure that is significantly biased towards professional specialization and managerial and research activities. In addition to basic salaries, greatest financial gains result from additional years

33. In the past, the MOH signed special agreements with the departments of Beni and Pando allowing them to give this bonus to all of their health workers and thus converting the "border bonus" into a "zone bonus". Attempts to regularize this situation and remove this benefit in 2000 in Beni resulted in prolonged strikes and the retraction of the MOH.

34. To qualify for the Escalafón, doctors and professional nurses have to collect a minimum of 51 points according to the following criteria: a maximum of 35 points can be obtained for "years of service and efficiency" (it is unclear how the latter is measured); 35 points for taking part regularly in activities linked to scientific societies, publishing articles or books, and supervising thesis work; 10 points for university teaching posts; 10 points for hierarchical positions of increasing responsibilities; and 10 points for work in rural areas (2.5 per year) or participation in union activities.

TABLE 6.6: SUMMARY OF INCENTIVES FRAMEWORK FOR HRH

Benefits	Doctors	Prof. Nurses	Aux. Nurses	Description of the Incentive
Basic monthly wage	$440	$292	$188	
Seniority	$6–$65	$6–$65	$6–$65	Bs. 43–430 according to the number of years worked in the system
Worker's Union Bonus	N.A.	N.A.	$14	Bs. 1,150 (once a year) provided worker is affiliated to the union (CSTSB)
Border Bonus	$88	$58	$38	20% of the basic salary for working in a border area or Beni/ Pando
Professional Specialization Category	$264–$440	$175–$292	N.A.	60%, 80% or 100% of basic salary for 1, 2 or 3 years of additional training (prof. specialization or Masters degree)
Escalafón	$101	$67	N.A.	23% of basic salary against 51 points gained through: academic and scientific work, higher responsibility positions, union activities and/or work in rural areas (4 years).
Maximum salary (% of basic sal.)	**$1,134** (258%)	**$775** (265%)	**$305** (162%)	

Source: Based on information from MOH; basic salaries and exchange rate correspond to year 2001.

of training. Collecting points for the Escalafón or working in border locations are also lucrative incentives but they are less attractive than investments in professional specialization as the benefits are almost three times smaller than that resulting from a minimal professional specialization (one year of postgraduate training). The number of years of service reflects a relatively weak incentive. One year of postgraduate training would result in a bonus four times greater than the bonus corresponding to over 25 years of service. The maximum income doctors and nurses earn, by meeting the criteria for all additional benefits is around 2.6 times their basic salary. This corresponds to an increase of the monthly wage of a doctor from US$440 to US$1,134 and of a professional nurse from US$292 to US$775. Nurses, however, are less likely to increase their salaries through bonuses to the maximum level. In 2001, only 3 percent of professional nurses qualified for the highest professional specialization category (3 years of additional training) compared to 24 percent of doctors.

In the case of auxiliary nurses, the incentive structure is less diverse and focuses on years in service. Other relevant bonuses are the border area and workers' union bonuses. By means of these bonuses, auxiliary nurses can increase their monthly salary from US$188 to a maximum of US$305.

Discussion

The analysis demonstrates substantial staff shortages in the governmentally provided health service system. The HIPC initiative reduced the overall shortage by approximately 30 percent. Absolute shortages remain for nurses (50 percent), whereas primary and secondary networks now

have an absolute surplus of doctors. At the level of health networks, we identified substantial geographical imbalances. In rural networks, average doctor shortages are 5 percent and nurse shortages 60 percent. By contrast, in urban networks, facilities are overstaffed with doctors and nurse shortages are relatively small. These imbalances are exacerbated by the fact that urban areas also have tertiary care hospitals, which concentrate close to half the public sector's health workers.

The current level of output of training facilities would be sufficient to meet total staffing requirements. For each cadre (doctors, professional nurses and auxiliary nurses), yearly outputs average 11 to 12 percent of the total workforce employed in the Social Security and governmental system. Based on international experience, attrition rates can be assumed in the range of 3 to 4 percent. Thus, increments substantially outweigh attrition in the public sector workforce and seem sufficient, given an appropriate policy framework, to allow for gradual increases in the public workforce. The positive ratio of increments over attrition in the public sector suggests that there is a growing pool of active and inactive supply that could be tapped, given the availability of financial resources and appropriate incentives. On the other hand, it is unclear whether the observed output of health workers corresponds to population health care needs.

With respect to the skill mix of the health workforce, the low nurse/doctor ratio potentially results in inefficiencies. Surpluses of doctors and shortages of nurses at the facility level suggest that doctors generally have to take on tasks that would be normally performed by nurses. In addition to the efficiency implications, this work pattern provides a disincentive for the motivation of doctors.

Similarly, the ratio of professional to auxiliary nurses poses a threat to technical efficiency and staff productivity. Remote rural areas are primarily staffed with auxiliary nurses with 9 to 14 months of training. Some of them lack secondary education. In hospitals, the ratio of auxiliary and professional nurses is 3 to 1 and auxiliary nurses usually take care of the patients while the professional nurses perform primarily administrative tasks. Over the past years, the MOH has been discussing with professional associations a redefinition of the responsibilities and training requirements for professional and auxiliary nurses. A proposal to upgrade the training of auxiliary nurses to middle-level health technicians was brought forward. Until June 2003, however, no clear policy decision had been taken.

In addition to the attempt to recruit additional health workers in rural areas financed under the HIPC initiative, the MOH recently launched EXTENSA, a program to extend coverage to rural areas using mobile health brigades. The program is primarily designed to address limited access to health services in rural areas that lack the necessary infrastructure. The program uses mobile health brigades together with ASISTES, community health agents that provide the link between the formal health system and the community. EXTENSA also provides the opportunity to redress HRH skill mix imbalances in rural areas and to introduce alternative contracting and incentive schemes.

Evidence suggests that HRH spend significant time on non-productive activities. Unexplained absences and strikes are frequent and turnover rates high. In addition, improved organization of training and working could result in significant productivity gains. Efficient staff management, however, remains hampered by the prevailing institutional arrangements. After a decade of decentralization efforts, a mismatch between authority and responsibilities at the various hierarchical levels persists with respect to the management of HRH. Most wage bills are paid by the central government and decisionmaking for recruitment and selection reside at the departmental level. Yet, until recently, the district director was the person ultimately responsible for reaching health targets within the networks. District directors generally had little discretion over decisions regarding HRH and low flexibility to introduce incentives to stimulate staff productivity. A few "pilot" districts report the use of non-monetary incentives to motivate personnel and to improve performance. However, they indicate limited results, primarily due to their lack of authority to manage HRH [35] (see Box 1).

35. Based on interviews in the districts of San Lorenzo-Tarija, Challapata-Oruro, and Distrito I-El Alto. All three were involved in donor-supported health reform projects and considered pilot districts.

Unexplained absences and strikes not only affect the system's overall productivity, but also pose a threat to the quality of care. Absences result in the delegation of responsibilities to trainees and/or nurses. Audits of maternal mortality repeatedly cite the absence of doctors on duty as one key cause of fatal outcomes.[36]

The compensation scheme does not include incentives linked to staff productivity. Most lucrative rewards are linked to professional specialization and research. They discourage commitment to the provision of primary care. Incentives linked to the performance of entire municipalities have been piloted; however, their impact was unclear if not ambiguous. For example, in 1997, the municipality of Santa Cruz introduced a performance-linked bonus for non-professional health workers.[37] This bonus corresponded to a monthly salary increase of 5 to 6 percent for auxiliary nurses. However, interviews with the municipality's health workers do not allow for the conclusion that the bonus worked as an incentive to stimulate individual staff productivity.

The compensation structure lacks significant financial incentives to attract staff into underserved rural areas. Instead it fosters practice in urban locations by focusing on incentives linked to activities primarily required in metropolitan areas such as professional specialization, managerial and research activities. In recent years, this incentive pattern was reinforced. For example, the *Colegio Médico* succeeded in giving more privileges to specialized professionals through a 20 percent increase in the Professional Specialization Bonus. By contrast, when staff were hired under the HIPC initiative, it was proposed that the compensation would include financial incentives linked to the poverty level of the municipality of their assignment.[38] Such a policy, however, was never implemented on the grounds of budget restrictions.

A combination of measures may be necessary to attract staff to underserved rural areas. As opportunities for dual practice mainly prevail in urban areas, small financial incentives are unlikely to attract physicians to rural and poor municipalities by themselves. High levels of remuneration are common in the private sector, for example, in the country's major cities, a medical consultation is charged US$10 to US$15. Thus, a physician can double his basic salary with 30 to 40 consultations per month. Therefore big financial incentives and/or other measures should be considered to attract more professional workers to rural areas. These could include: (i) introduction of promotion ladders with accelerated progress in rural areas; (ii) complementary nonfinancial incentives, such as housing; and (iii) regulatory actions. With respect to regulatory mechanisms, the Obligatory Rural Service provided a flow of doctors to rural areas in the past. This system required that medical graduates spend one year practicing in rural areas prior to receiving their license. In 2001, the MOH abolished the Obligatory Rural Service and transformed it into a compulsory three months "social service" rotation for graduating medical students. Although the impact of this policy change has not been studied, it is likely that it affected the availability of physicians in rural areas, as the posts left by the medical trainees were not all filled by permanent professional staff.

The recruitment and allocation process under the HIPC initiative illustrates the widespread resistance of key stakeholders to reform the HRH management and administration functions. In light of the previous failed attempts to decentralize the HRH administration and management functions to municipalities (in 1994 and during the National Dialogue discussions in 2001), under the HIPC initiative, the MOH attempted to introduce gradual changes restricted to the newly hired personnel. These included financial incentives tied to location and performance and new hiring modalities. However, the implementation of these innovative measures was only partially successful. Greater participation of local actors in the selection of staff was achieved by the introduction of Local Selection Committees. However, the MOH failed to implement measures

36. MSPS. Observatorio de la Calidad. Auditorías de Muertes Maternas 2001–2002.

37. Resolución Municipal 140/97 of 25/08/97. The incentive was financed by 10 percent of earnings on all services provided in the municipality's health facilities (except those included in the Basic Health Insurance and the sale of drugs).

38. Supreme Decree 26371 of 24/10/02 regulating the National Dialogue Law.

that would have resulted in staff management and compensation arrangements different from those of regular MOH employees.

Recommendations

Improvements in the management of HRH are key to increase access to the basic health services. However, the information base remains weak. Annual updates of HRH data based on payroll information are important, as is the evaluation of the information, in particular against a HR requirement benchmark such as the one introduced in this analysis.

A policy environment should be created that is effective in redressing geographical imbalances in HRH allocation and attracting professional health workers to underserved, in particular rural areas. This policy environment would rest on five pillars:

1. The administration and management of HRH should take place in a highly transparent manner at all hierarchical levels. Necessary information channels and information flows should be established or expanded. For example, information about absenteeism should be available at the hierarchical level where remuneration decisions are taken.
2. Financial incentives to attract medical professionals to rural areas must be strengthened and should reflect the responsiveness of the target HRH group. This would entail a complete revision of the remuneration system. Given the strong financial incentives to practice part-time in the private sector and scarce resources in the public sector, bonus payments should be tailored towards professional nurses rather than physicians. Accelerated reward systems for practice in rural areas should be considered. For example, seniority could be given greater weight within the reward structure and an accelerated promotion scheme along the seniority bonus linked to service in rural areas implemented.
3. Complementary to financial incentives, the introduction of non-monetary incentives should be considered. Non-monetary incentives have the clear advantage that they can be linked to the geographical location of facilities. For example, provision of housing or improvements of the work environment are clearly linked to the geographical location.
4. Regulatory measures imposing obligatory service in rural areas should be explored. This should include the reconsideration of the obligatory rural service for medical school graduates.
5. The distribution of authority and responsibility regarding HRH administration and management tasks across various governmental levels should be reviewed and optimized. Authority and responsibility of a given task should generally prevail at the same hierarchical level. Furthermore, the characteristics of a task or group of related tasks determine the optimal governmental level where corresponding authority and responsibilities should reside. The establishment of the DILOS has resolved some of previous inconsistencies. Further reforms are required to optimize allocation of HRH functions within the decentralized health systems. These must take the political feasibility into account. Table 6.7 proposes a distribution of selected HR tasks between the MOH/SEDES and the DILOS that takes into account the limitations imposed by the political context in the short run, while capitalizing on the opportunities presented by the new management model centered on the DILOS. In the long run, we propose a distribution of responsibilities that would imply greater devolution efforts to local governments.

Optimizing the allocation of HRH tasks in the decentralized health system will be an important step towards greater effectiveness in the management of HRH and achieving key objectives such as overcoming spatial imbalances. In the short run, additional authority and responsibility in the management of HR should be allocated to the DILOS.[39] Specifically, in the short run the

39. Current regulations state that managing ("gestionar") human resources is one of the key functions of the DILOS. But the only specification included is that the DILOS—as a Board—is responsible for selecting the health network director.

TABLE 6.7: RECOMMENDED SHORT AND LONG-RUN DISTRIBUTION OF SELECTED HRH MANAGEMENT TASKS BETWEEN DIFFERENT LEVELS OF GOVERNMENT

	Short-run	Long-run
Central Level (MOH/SEDES)	■ Salary setting and definition of compensation structure ■ Monitoring and evaluation ■ Hiring and firing of HR ■ Payment of Salaries	■ Salary setting and definition of compensation structure
Local Level (DILOS)	■ Allocating HR within health network ■ Controlling and enforcing presence of HR at work ■ Participating in selection of new HR ■ Introducing local incentives ■ Monitoring and evaluation	■ Allocating HR within health network ■ Controlling and enforcing presence of HR at work ■ Hiring and firing of HR ■ Payment of salaries ■ Monitoring and evaluation

DILOS should be responsible for: (i) allocating HRH within the health network; (ii) participating in the selection of new staff; (iii) controlling and enforcing the presence of HRH at work—this entails responsiveness to the DILOS on the part of the SEDES who is responsible for paying the salaries; (iv) coordinating training activities for individual health workers; and (v) introducing local incentives. In the short run, the MOH/SEDES would retain the responsibility and authority for HRH allocation between health networks, hiring and laying-off. This function would be gradually transferred to the DILOS. In a transition period, new staff should be hired at the local level. This transition would require the allocation of resources to the DILOS so that staff would be remunerated at the local level. On the short and long run, the MOH/SEDES would retain the responsibility for setting the overall remuneration framework.

The second round of recruitment under the HIPC initiative is ongoing. Efforts should be made that the allocation of staff takes place under conditions that are as close as possible to the envisaged pro-rural policy context. However, establishing such an environment will take time. At minimum, the allocation of staff should be transparent and ensure the participation of the DILOS.

Modes of service provision that are inherently pro-rural should be strengthened and expanded. The currently implemented EXTENSA program has the potential to improve access to core interventions in underserved areas. Appropriate targeting of the EXTENSA services and ensuring the financial sustainability of the program will be key.

CHAPTER 7

INDIGENOUS EMPOWERMENT AND AN INTERCULTURAL APPROACH TO HEALTH

This chapter examines the health situation of indigenous people, their access to health services and their participation in the definition of health policies. It reviews the initiatives that have been launched by the MOH to promote indigenous empowerment and an intercultural approach to health and provides corresponding recommendations.

The Indigenous Population, Poverty and Health

According to official statistics, 59 percent of the Bolivian population is indigenous. Estimates from the Economic Commission for Latin America (ECLAC) suggest this percentage could reach 81.2 percent (Bello and Rangel 2000). There are 37 different indigenous peoples (*poblaciones indigenas y originarias*) living in the country's three ethno-ecocultural zones, namely, the Amazon, the Andes, and the Oriental Chaco. The largest groups are the Quechua and Aymara populations who live primarily in the highlands and midlands but also have a strong presence in the lower regions due to migration.

The indigenous people suffer from social exclusion. About 59 percent of the Bolivian population is poor, but among the indigenous, poverty levels reach 64 percent, as compared with 48 percent for the non-indigenous (Bello and Rangel 2000). Similarly, the average number of years of study is 7.6 for the general population, but among women in rural areas (where most of the population is indigenous), it is only 3.4 years. The adult illiteracy rate is 13 percent overall, 6 in urban areas and 25 in rural ones.

As with poverty, indigenous and rural populations have higher rates of infant mortality and prevalence of diseases, and lower access to health services. For example, while the incidence of acute diarrheal diseases is 27 percent for non-indigenous children, it is 30 percent for indigenous ones (see Table 7.1). Similarly, indigenous children have a higher incidence of acute respiratory infections and lower vaccination coverage. Additionally, indigenous populations have a lower access to health services from the public sector and especially from the social health funds: close

TABLE 7.1: HEALTH INDICATORS—INDIGENOUS AND NON-INDIGENOUS POPULATIONS

	Indigenous	Non indigenous
Incidence of acute diarrheal diseases in children under 5 years	30.4	26.9
Incidence of acute respiratory infections in children under 5 years	45.0	41.1
Vaccination with DPT3	63.9	70.5
Place where care was received in case of illness:		
Public hospital	13.9	18.6
Health center or health post	15.6	15.5
Social Health Fund (*Caja*)	7.5	15.5
Private clinic or physician	9.1	13.1
Non institutional	53.9	37.3
Deliveries not attended in health facilities	49.7	20.8
Deliveries attended by traditional midwives or doctors	46.2	19.4

Source: Household Survey MECOVI 1999–2001, mean of 3 years.

to half of all disease cases and deliveries are not attended to in health facilities. The probability for a woman to receive skilled care at childbirth is 17 percent lower if the head of household is indigenous. Similarly, the probability for a person to receive care when ill is 9 percent lower for indigenous people (see Annex C).

Almost half of the time, the indigenous populations use traditional medicine[40] in response to their health needs. This is the case of rural populations without access to formal health facilities, and to a lesser extent of urban indigenous people who have access, but prefer to use their traditional healing system. In most areas of the country, including some urban areas, the agents of traditional medicine (healers, herbal doctors, *hueseros*, and midwives) perform their activities in parallel to the formal health services of the public sector, social health funds and private sector. In total, 50 percent of deliveries among indigenous women are not attended in health facilities compared with 21 percent for non-indigenous women. Similarly, 54 percent of cases of illness among indigenous people were treated outside the formal sector, as compared with 37 percent for the non-indigenous populations. However, it should be noted that there are greater differences between rural and urban areas (67 versus 17 percent deliveries attended outside the formal system) and between poor and richer households (11 percent deliveries in quintile 1 vs. 77 percent in quintile 5 attended outside the formal system).

Traditional medicine is used by large sectors of the population for three main reasons: (i) these services are within physical reach of the populations (that is, there are no geographical barriers to access, as is the case with the public health facilities); (ii) their "cost" is more accessible, as compared with the cost of using the formal services, especially those not included in the public health insurance; and (iii) because they speak the same language, understand their needs and respect their cultural practices and beliefs; this is in contrast to the cultural divide that exists between the formal health sector and indigenous practices. These cultural divides are particularly important when it comes to something as important as the beginning of life: for indigenous women, traditional childbirth practices include delivery in a squatting position (*en cuclillas*), in the presence of family members and followed by the burial of the placenta. This means that if the

40. In this document, traditional medicine is understood as the medicine of indigenous healers as opposed to the formal institutional system.

coverage of formal health services is to be expanded to the indigenous populations, the supply of these services has to be brought closer to these populations (in rural areas), their costs lowered and the services culturally adapted.

Organization and Political Participation of Indigenous Populations for Health

The rural indigenous populations in Bolivia are relatively well organized. The three most important national organizations are: the *Confederación Sindical Única de Trabajadores Campesinos de Bolivia* (CSUTCB), the *Confederación de Pueblos Indígenas y Originarios de Bolivia* (CIDOB), and the *Confederación Sindical de Colonizadores de Bolivia* (CSCB). The CSUTCB is a national organization representing the Aymara and Quechua populations from the highlands and midlands. It is characterized by strong internal conflicts due to its multiple leaders, each competing to advance their own profile. The CIDOB is strong in the country's lowlands. The CSBC is a more recent organization that emerged in the colonization areas of the Chapare and Yungas.

The indigenous organizations have included the access to health services of the populations they represent in their negotiation agenda with the government. During the mobilizations of 1999 and 2000, *campesinos* requested—still in a rather generic form—that the government address the health needs of rural populations who lack access to formal services.

At the same time, the approach of indigenous organizations to health issues varies and has changed over time. The CSUTCB has traditionally prioritized a strategy of popular mobilizations to press the government to expand formal health services to cover indigenous populations, while articulating this with the social and economic demands of other sectors of the Bolivian society. More recently, the organization added new demands related to the practice of traditional medicine. In this respect, the CSUTCB supports the SUMI and the integration of traditional healers to the formal health system (in effect, having them practice in the public sector facilities and be reimbursed by the public insurance mechanisms). Finally, the CSUTCB has recently emphasized its institutional empowerment, through the setting up of the National Indigenous Health Commission (*Comisión Indígena y Originaria de Salud*) and has aspirations as to the creation of a Vice-Ministry for Indigenous Health.

For the CIDOB, on the other hand, the core issue is the training of indigenous human resources in the formal health system and their hiring within the public health sector. In addition, they are interested in the continued functioning of the CNIS (National Indigenous Council for Health), a bilateral space for dialogue between them and the MOH. The CSCB, on the other hand, has no particular indigenous demands, but rather focuses on the extension of coverage of health services to the colonization areas (Chapare and Yungas).

In addition, in the last few years, and especially during the 2002 general elections, indigenous people and members of these three organizations have gained important electoral support, elected congressmen and won new spaces within the government.

Partial Answers to Indigenous Health Needs

The Bolivian government has taken several steps to progressively incorporate indigenous issues to health policies and strategies. These spring from the recognition that all citizens have the right of access to health services, the right for these services to respect their cultural practices, and the right to chose their own traditional practices.

The National Indigenous Policy ("*Política Nacional Indígena y Originaria*") called "Development with Identity" was launched in 1996 together with the creation of the Consultative Council of Indigenous Peoples of Bolivia as a result of that year's National Dialogue. The Bolivian Poverty Reduction Strategy (PRS) sets among its principal policies "development with identity" and the "reduction of inequities and barriers arising from ethnic discrimination." For health, the PRS emphasizes the need to develop an intercultural approach.

Under this framework, the government developed the following initiatives:

a. Centered on the relationship between indigenous peoples as citizens and policy-makers:
   - The National Indigenous Health Council (CNIS) was officially recognized in September 2000 as the space for coordination between the government and the indigenous peoples. However, the CNIS arose as a result of bilateral negotiations between the MOH and the CIDOB, and so far does not include the CSUTCB or the CSCB.
   - In August 2001, the government, the CSUTCB and the National Federation of Peasant Women of Bolivia (*Federación Nacional de Mujeres Campesinas de Bolivia*—FNMCBS)—in the framework of wider negotiations—signed an agreement in Pucarí that legalizes the practice of spirituality of indigenous peoples and recognizes the *Sabios* of the Aymara, Quechua, Guaraní, and other indigenous peoples throughout the national territory.
   - In November 2001, the MOH and the Ministry of Peasants and Indigenous Peoples issued a bi-ministerial resolution (No. 29/2001) that formalizes the official recognition and respect of the practice of spirituality and the knowledge of indigenous peoples and of peasant communities. The resolution also stipulates that the indigenous organizations should identify and justify the sacred sites chosen for these practices, so that the State can preserve and protect them.

b. Centered on the relationship between indigenous peoples as users and service providers:
   - In September 1999, the MOH implemented the *Health Defenders* initiative (*Defensores de la Salud*). These *Defensores* are representatives of the communities (indigenous and others) whose purpose is to strengthen and enrich the dialogue between the public health sector and the local level. They disseminate information on health issues within the community, and gather suggestions and complaints from their people, which they channel to the corresponding public health sector authorities.
   - In September 2001, under the framework of the country's public health insurance (at the time, the *Seguro Básico de Salud*), the government launched the Indigenous Basic Health Insurance (*Seguro Básico de Salud Indigena y Originario—SBSIO*), which added ten indigenous interventions to the public health insurance. These were to be reimbursed under the same fee-for-service mechanism as the other interventions in the SBS and included: (i) culturally adapted interventions to be performed by the sector's formal HRH (the devolution of the placenta and pregnant women's choice of position for childbirth); and (ii) interventions performed by traditional healers (diarrhea, *gripe, mal de ojo,* and others). But the SBSIO was never implemented and its formal existence was eliminated by the SUMI Law.
   - In July 2002, the MOH officially recognized the Pregnant Woman's Rights Charter (*Carta de Derechos de la Mujer Embarazada*) and the Patient's Rights Charter. These include the right to information and education, to receive care from trained personnel, to antenatal and postnatal care, and to the respect for their cultural practices. In particular, pregnant woman have the right to choose the position they wish to be in for childbirth and to be given the placenta in all health facilities.
   - In July 2002, the government launched the program "Chikjtati Sarajñani/*Caminemos Juntos*" (Walking Together) for the delivery of traditional medical services together with formal ones in the peripheral zones of the city of La Paz. This program is based on the 1987 regulations for the practice of natural traditional medicine in Bolivia.
   - In November 2002, the incoming government launched the SUMI, specifying that SUMI services would be delivered through traditional medicine, according to the uses and customs of the indigenous and peasant communities, whenever those were chosen.[41]

41. Law N° 2426, Presidencia de la República, Bolivia, Nov. 21, 2002: "cuando corresponda, se adecuarán y ejecutaran mediante la medicina tradicional Boliviana donde los usos y costumbres de los pueblos indígenas, originarios y campesinos de Bolivia, sea de elección."

While the MOH has taken important steps in responding to the demands of indigenous organizations, there seems to be a gap between the interpretation and expectations of each. On one hand, the successive governments understand the issue as integrating the health needs of indigenous populations to universal schemes of free formal health services (as with the SUMI). On the other hand, what the indigenous organizations also want is a framework of care specific to their populations. This implies, for example, recognizing traditional healers and reimbursing them (through formal mechanisms) for the services they deliver to their populations. A comprehensive strategy of empowerment of indigenous peoples for health thus needs to look at both these aspects, and incorporate the specifically *indigenous* demands to the *universal* ones.

Recent Progress on Indigenous Health Indicators and Pending Challenges

The indigenous populations have benefited from the overall improvements in health coverage in the country that resulted from the government's health reform policies, especially the public health insurance. These improvements reached not only urban and rich municipalities, but also rural and poor ones. However, the gap in the coverage of key health services between indigenous and non indigenous populations remains, and even increased in some cases. For example, there was an important progress in the coverage of skilled birth attendance among indigenous women, which doubled between 1996 and 2001, from 18 to 36 percent. At the same time, however, the coverage of skilled birth attendance among non-indigenous women rose from 37 to 60 percent. This means that while in 1996, the gap was 19 percentage points, it rose to 24 percentage points in 2001 (see Table 7.2).

These figures show that there is still an important gap in access to services between indigenous and non indigenous populations. This gap remains, despite the increase in coverage for indigenous populations made possible through the public health insurance and its reduction in economic barriers of access. To improve the health indicators of indigenous people and reduce the gaps that separate them from the urban and from the non-indigenous sectors, it is thus necessary to strengthen efforts directed at the extension of coverage. These should address not only the economic barriers of access to health services (which have been reduced further with the SUMI), but also the geographic and cultural ones.

EXTENSA, the recently launched program for the extension of coverage to rural areas, is a key policy to address both geographic and cultural barriers of access. EXTENSA will provide mobile health brigades (BRISAS) working in coordination with local community health agents (ASISTES) in remote rural communities. The BRISAS increase the supply of public health services in dispersed rural areas that lack health facilities. This complements the hiring of human resources in rural areas made possible by HIPC (see chapter 6), which provides staff in areas that have health facilities. The other key element for EXTENSA is to include a strategy to reduce the cultural barrier of access. The link here between the indigenous perspective and needs and the formal health sector is provided by the ASISTES, as they are chosen by and come from the rural communities.

TABLE 7.2: COVERAGE OF SKILLED BIRTH ATTENDANCE, BY POPULATION

	(Percentage)					
	1996	**1997**	**1998**	**1999**	**2000**	**2001**
Indigenous	37	44	48	52	56	60
Non Indigenous	18	22	25	28	33	36
Difference	**18**	**22**	**23**	**24**	**23**	**23**

Source: SNIS.

The cultural adaptation of health services is fundamental to facilitate the full access of indigenous people to health services. In addition to a voice in the designation of ASISTES, this strategy entails strengthening local indigenous capacities in the decentralized context and making sure their voices are heard in local decisionmaking arenas, particularly in the DILOS (through the representative of the *Comité de Vigilancia*). As a result, it is more likely that the provision of health services will respond to the indigenous populations' needs (in type, quantity and quality). Finally, national strategies and policies are needed to reorient and adapt current national policy instruments to the needs of indigenous peoples and promote their empowerment throughout the country.

Recommendations

To improve the access of indigenous people to health services and ensure the respect of their cultural practices, their voice has to be heard in the design and implementation of corresponding health policies. Recognizing and valuing the contributions of indigenous people to the debate will enable the building of participatory spaces for planning, executing and monitoring the respective policies. A strategy of empowerment of indigenous populations that would ensure their voice is heard at the local and national level could include the following elements:

- The setting up of permanent spaces of dialogue and consultation between the government and indigenous organizations at all levels: (i) at the national level, institutionalizing dialogue and consultation with all indigenous organizations, including the CIDOB, CSUTCB and CSCB, on the basis of the successful experience with the CNIS; (ii) at the regional level, implementing regional consultations and dialogue with indigenous organizations, by ensuring their participation in the departmental arenas for sectoral coordination; and (iii) at the local level, promoting the participation of indigenous organizations in the DILOS.
- Disseminating the objectives and actions included under the strategy for the empowerment of indigenous peoples for health, to the indigenous population.

A second step entails the development of mechanisms that promote the adaptation of health service delivery to the country's cultural reality and indigenous knowledge and practices. This would improve the relationship between indigenous people as users of health services and the sector's providers. Options to address this include:

- Ensuring the Pregnant Women's Rights Charter is widely known and used, by: (i) disseminating it, together with indigenous organizations, among women, health personnel at all levels, and among local and community social actors; (ii) developing a special strategy to raise awareness of the health personnel regarding the Charter; and (iii) ensuring that the rights of indigenous women related to childbirth (the right to chose the position they wish to be in for childbirth and the right to be given the placenta) are included in the SUMI, eventually with a fee-for-service reimbursement tied to these specific interventions (as was established by the SBSIO).
- Ensuring the full implementation of EXTENSA, and in particular: (i) the adequate training of the personnel from EXTENSA's mobile brigades with respect to indigenous issues, as well as intercultural respect and appropriate communication skills; (ii) the selection of Community Health Agents (ASISTES) on the basis of the personnel proposed by the communities and local indigenous organizations, and their adequate training on indigenous health issues, communication and intercultural respect; and (iii) the linking of BRISAS and ASISTES to the local health plans which should be designed and managed with the participation of indigenous populations.

Although there is still controversy about the validity of traditional medicine and the feasibility of its institutional incorporation to the formal sector, this is an area that could receive greater attention. For example, this could include initiatives such as (i) the accreditation of traditional doctors, as agreed to with indigenous organizations, and (ii) validating (through a pilot project) the incorporation of traditional medical practices into the SUMI, as identified by the SBSIO. Another policy approach is to promote the relationship between formal and traditional health services. One way of doing this would be to encourage and reimburse traditional midwives for referring women to health facilities within the framework of the public health insurance (SUMI).

Finally, to ensure coherence in the development of these strategies, the MOH should make sure it has the appropriate institutional tools, by designating personnel and organizational bodies responsible specifically for these issues.

CHAPTER 8

CONCLUSIONS AND RECOMMENDATIONS

Bolivia has achieved progress in health over the last few years thanks to the implementation of a package of reforms. Between 1996 and 2002, the coverage of skilled birth attendance and antenatal care for mothers, and the coverage of pneumonias, diarrheas and vaccinations in children increased substantially. Preliminary data suggest maternal and infant mortality dropped significantly as a result. Progress was also achieved in the control of communicable disease.

The health reform policies that made these improvements possible include the introduction of a focus on health outcomes in the context of decentralization, the implementation of a public health insurance, the strengthening of vertically-financed public health programs and to a lesser extent, an increase in the size of the sector's workforce and greater participation of indigenous peoples for health. The current government modified some of these policies (for example, the public health insurance with the SUMI) and introduced new ones (for example, the new management model centered on the DILOS).

Some of these health policies have come under strain in the current context of economic crisis and increasing social conflicts. In addition, while coverage has increased in almost all municipalities, significant equity gaps remain between the rich and the poor, the urban and the rural, and the indigenous and non-indigenous. These tensions require new answers that will ensure that progress in health outcomes is maintained and consolidated, that the poor remain at the center of the government efforts, and that the efficiency of the system is enhanced.

The analysis suggests that the MOH should concentrate on three key issues: first, maintaining the focus on national priorities in the context of the SUMI; second, strengthening efforts to extend care to poor rural areas; and third, improving the effectiveness of the system in the context of the new management model. Specific recommendations in each of these areas are detailed below.

Maintaining the Focus on National Priorities in the Context of the SUMI

A first challenge is to ensure there are sufficient resources for national health priorities, and that these are targeted to the poor and vulnerable groups. This entails that financing should be ensured for:

1. National public health programs, such as immunizations, sexual and reproductive health, and the control of priority communicable diseases, including malaria, tuberculosis, and Chagas. This is particularly important given that some of these programs are no longer under the umbrella of the public health insurance (SUMI). Coordination (both financial and administrative) between different programs should be strengthened and the role of each clarified to increase efficiency and avoid duplication of efforts.
2. Cost-effective interventions that address the key causes of maternal and child mortality. The SUMI presents a risk of diversion of resources from national priorities towards tertiary care hospitals, which are likely to absorb most of the available funding. Second, there is a risk for the inefficient use of SUMI funds in high-cost, low-effectiveness interventions due to limited incentives for cost-containment and prioritization, in a context where the National Redistribution Fund assures reimbursement. To avoid this, the MOH should take preventive measures. These could include: (i) permanent monitoring of SUMI to identify and correct potential risks of under-funding of primary health care services; (ii) reviewing the interventions included in the SUMI package, in light of national priorities, cost-effectiveness and available resources; (iii) setting conditions for municipal access to FSN funds for tertiary care (for example, audits of municipal health accounts and management changes to improve attendance at the first level of care); and (iv) strengthening primary health care facilities and shifting demand towards them.
3. Health promotion and prevention. Within the SUMI, components related to nutrition and community health promotion require strengthening. This could be done through payment mechanisms for these services that reimburse a more comprehensive community service package in rural areas.

Strengthening Efforts to Extend Care to Poor Rural Areas and Indigenous People

Another priority is to strengthen the efforts directed at extending care to rural areas, where most of the population is poor and where the indigenous populations are concentrated. Continued progress in this direction is key to further reduce maternal and infant mortality and close the equity gaps in access to services and in health outcomes. This implies: (i) ensuring access of rural populations to SUMI resources and benefits; (ii) attracting professional health workers to underserved rural areas by creating a pro-rural policy environment; (iii) ensuring appropriate targeting of existing programs to rural areas (EXTENSA, HIPC); (iv) culturally adapting services to indigenous populations; and (v) giving indigenous populations a greater voice in the definition of health policies.

1. Ensuring access of rural populations to SUMI resources and benefits. Under the current SUMI structure, it is likely that rural municipalities will not have access to the additional resources provided by the National Redistribution Fund, and their populations will benefit little from the additional tertiary care services included in the insurance. Measures should be introduced to reverse this situation and ensure that rural municipalities and populations effectively gain access to SUMI resources and benefits. Measures additional to the ones mentioned above in relation to national priorities could include:
   a. Ensuring that the SUMI reimburses transport costs for the referral of patients from rural primary care facilities to hospitals. The possibility of promoting demand in rural areas by reimbursing other patients costs should also be considered.

   b. Giving rural municipalities greater flexibility over the use of SUMI funds to make sure they reach poor and dispersed communities. Most rural municipalities are expected to have surpluses in their Municipal Health Accounts. They could use these to address challenges in health service delivery or to create local incentives linked to permanence of rural health workers.
   c. Addressing bottlenecks in service provision, including those arising within the EXTENSA initiative.
2. Establishing a pro-rural policy environment to redress geographical imbalances in staff allocation. This entails, increasing the transparency of HRH administration and management at all government levels. In addition, regulatory measures and nonfinancial incentives should be considered to attract HRH to rural areas. Furthermore, pro-rural financial incentives should be strengthened. This would entail a complete revision of the remuneration system, currently biased towards specialization and management activities. For example, seniority could be given greater weight within the reward structure and an accelerated promotion scheme along the seniority bonus linked to service in rural areas implemented. Alternatively, additional financial incentives could be created on the margin—under local control-that would make basic care and rural areas more attractive, in line with the national priorities.
3. Targeting EXTENSA and HIPC to rural areas. EXTENSA provides a key opportunity to increase the supply of services in remote areas that lack health infrastructure. To ensure the optimal success of this initiative, EXTENSA's mobile brigades should be well targeted and the human resources that conform them selected with the input of the communities they will serve. The ASISTES, who will provide the link between the health brigades and the communities, should be selected by local indigenous organizations. The itinerant health brigades from EXTENSA should be complemented by an increase in personnel (especially professional nurses and doctors) in rural health facilities. This has been partially achieved under HIPC, but could be improved through the reallocation of HIPC staff.
4. Progressing on the cultural adaptation of services. This is critical to expand coverage in rural areas. The implementation of the Pregnant Woman's Rights Charter could provide an important step in this direction. This entails empowering women to demand the rights included in the Charter, (for example, choosing the position for childbirth and asking to be given the placenta) and training health personnel. The relationship between traditional midwifes and the public health sector should also be improved; reimbursing them when they refer pregnant women to health facilities could be an incentive in this direction. In addition, the incorporation of traditional medicine to the system could be explored, for example through the accreditation of traditional doctors, and/or piloting the reimbursement of traditional healing practices.
5. Giving indigenous populations a greater voice in the definition of health policies. At the regional and national levels, the spaces for consultation and dialogue between indigenous organizations and the MOH should be strengthened. At the local level, indigenous peoples can be represented in the DILOS through their territorial organizations.

Improving the Effectiveness of the Decentralized System in the Context of the New Management Model

The new management model centered on the DILOS has the potential to improve accountability and the effective management of health networks at the local level, but it also presents certain risks. The DILOS arises as a response to the fragmented decentralization of the health sector and is a renewed attempt at instituting an instance of shared management between the health sector, the municipal government and organized civil society. However, for the model to be effective: (i) mismatches between responsibility and authority over HRH administration and management

should be resolved; (ii) the focus on results should be maintained; (iii) new instruments developed to tighten accountability; and (iv) the challenges presented by the territorial division of the country addressed.

1. Optimizing the allocation of HRH management and administration tasks between different government levels. Taking into account the limitations imposed by the political context, in the short run, the DILOS should be responsible for: (i) allocating HRH within the health network; (ii) participating in the selection of new staff; (iii) controlling and enforcing the presence of HRH at work; (iv) coordinating training activities for individual health workers; and (v) introducing local incentives. This would represent an important first step towards greater effectiveness in the management of HRH and in overcoming spatial imbalances. The MOH/SEDES would retain the responsibility and authority for the allocation, hiring and laying-off of staff on the short run. This function would be gradually transferred to the DILOS. In a transition period, new staff should be hired at the local level. This transition would require the allocation of resources to the DILOS so that staff would be remunerated at the local level. On the short and long run, the MOH would retain the responsibility for setting the overall remuneration framework. In the long run, a system can be envisioned with greater devolution towards the DILOS and stronger accountability.
2. Maintaining the focus on results within the system. The performance agreements signed between the MOH and the SEDES have played an important role at the national level. They should be maintained and improved through a simplification of the included indicators, the development of a transparent methodology for setting targets and the strengthening and institutionalization of a permanent monitoring and evaluation system. Mechanisms should be explored to provide incentives for compliance with the agreements at departmental level.
3. Developing new instruments to strengthen local accountability. Local Health Plans can provide local continuity to the departmental commitments contracted by the SEDES and take the focus on national priorities to the level of service delivery. The representative of the SEDES in the DILOS is the key link in bringing the departmental targets to the local level. The Local Health Plan would thus function, not only as the terms of reference of the health network director, but also as a performance agreement between the regional level (SEDES) and the DILOS. Mechanisms that provide incentives for compliance with local commitments should also be considered. For example, the health commitments set in the Local Health Plans could be linked to the municipalities' access to resources from the FPS.
4. Addressing the challenges presented by the territorial division of the country. The DILOS and health networks should take into account the jurisdictional division of the country and the requirements of the health sector (a minimal population coverage for basic hospitals). In rural areas, this implies the constitution of DILOS and health networks that cover more than one municipality. This has been a challenge in the past. Ways of effectively creating multi-municipal DILOS should be explored; they could consider the creation of transitory municipal unions as set in the respective legislation.

The above analysis focused on the key reforms launched by the government in recent years and those areas where most progress has been achieved by the government. However, there are other additional areas that merit further investigation, which would deepen and complement the above findings and recommendations. These include, among others: malnutrition; the contribution of other sectors to improving health outcomes and the intersectoral relationships in health; issues surrounding human resources for health that were not addressed, such as training and quality; and a more detailed analysis of certain national public health programs, such as sexual and reproductive health.

ANNEX A

NATIONAL HEALTH ACCOUNTS 2000

BOLIVIA. NATIONAL HEALTH ACCOUNTS, 2000 [BY FINANCING SOURCE, AND AGENT (IN THOUSANDS OF CURRENT US$)]

	Agent				
Source	**Government**	**Companies/ Institutions**	**Households (p)**	**External**	**Total**
PÚBLIC SECTOR	**76,356**	**14,554**		**22,068**	**112,979**
	(17.88%)	(3.41%)		(5.17%)	(26.45%)
Ministry of Health	12,439	6,713		19,134	**38,287**
	(2.91%)	(1.57%)		(4.48%)	(8.97%)
Prefectures	48,535	2,392		1,062	**51,989**
	(11.36%)	(0.56%)		(0.25%)	(12.17%)
Municipalities	14,705	5,362		667	**20,734**
	(3.44%)	(1.26%)		(0.16%)	(4.85%)
Social Investment Fund	602			1,003	**1,605**
	(0.14%)			(0.23%)	(0.38%)
Others—Public Sector	75	88		202	**365**
	(0.02%)	(0.02%)		(0.05%)	(0.09%)
SOCIAL INSURANCE FUNDS		**156,497**			**156,497**
		(36.64%)			(36.64%)
Public		116,863			**116,863**
		(27.36%)			(27.36%)
Private		12,610			**12,610**
		(2.95%)			(2.95%)
Military					
University		27,024			**27,024**
		(6.33%)			(6.33%)
PRIVATE INSURANCE		**16,524**			**16,524**
		(3.87%)			(3.87%)
Insurance Companies		14,817			14,817
		(3.47%)			(3.47%)
"Prepagadas"		1,707			1,707
		(0.40%)			(0.40%)
NGOs			6,248	7,450	**13,698**
			(1.46%)	(1.74%)	(3.21%)
HOUSEHOLDS (p)			127,368		**127,368**
			(29.82%)		(29.82%)
TOTAL (p)	**76,356**	**187,575**	**133,616**	**29,518**	**427,066**
	(17.88%)	(43.92%)	(31.29%)	(6.91%)	(100.00%)

(p) Preliminary

Source: Cardenas, Esquivel, and Avila 2001. Estudio CNFGS Bolivia 1999–2000.

Annex B

Equity and Coverage of Priority Health Services

An analysis of individual data from the Demographic and Health Surveys shows that between 1994 and 1998, inequity in access to health rose in the country. While health status generally improved for both the rich and the poor, the gap between them widened between 1994 and 1998 for the following five maternal and child health indicators: (1) percentage of women receiving skilled birth attendance; (2) percentage of women receiving antenatal care by trained personnel; (3) total fertility rate; (4) percentage of children stunted; and (5) infant mortality rate (see Table B.1). Moreover, among the poor, some indicators worsened, including the total fertility rate, which increased from 6.8 births per woman in 1994 to 7.4 in 1998 among women in the poorest income quintile.

An analysis of municipal data for coverage of skilled birth attendance between 1996 and 2001 shows similar findings (see Table B.2). We group the municipalities in quintiles, on the basis of average municipal poverty levels (according to the 2001 national population census). The result shows that the gap in coverage of skilled birth attendance between rich and poor municipalities increases between 1996 and 1998 (thus corroborating the DHS analysis) and continues to increase until 2001. This analysis, however, relies on administrative data and may overestimate the gap between municipalities because it does not reflect the fact that some women receive skilled birth attendance in municipalities other than those of their residence. This is especially the case for women from poor rural municipalities that lack second level health facilities.

In any case, the analysis suggests that while coverage increased in all municipalities and for all income groups, there is still an important equity gap. This implies that poverty targeted policies such as the extension of coverage to underserved areas are key to further reduce health inequalities.

TABLE B.1: SELECTED MATERNAL AND CHILD HEALTH INDICATORS, 1994–1998

	Quintile				
	20% poorest	**2**	**3**	**4**	**20% richest**
Percentage Coverage of Skilled Birth Attendance					
1994	13.3	34.7	50.4	69.4	81.6
1998	19.8	44.8	67.7	87.9	97.9
Change	6.5	10.1	17.3	18.5	16.3
	Difference between Quintile 1 and Quintile 5 in 1994 = 68.3				
	Difference between Quintile 1 and Quintile 5 in 1998 = 78.1				
Antenatal Care Visits by trained personnel					
1994	26.2	43.2	55.0	69.3	79.9
1998	38.8	57.8	70.4	88.6	95.3
Change	12.6	14.6	15.4	19.3	15.4
	Difference between Quintile 1 and Quintile 5 in 1994 = 53.7				
	Difference between Quintile 1 and Quintile 5 in 1998 = 56.5				
Total Fertility Rate					
1994	6.8	5.9	5	3.9	3
1998	7.4	5.8	4.4	3	2.1
Change	0.6	–0.1	–0.6	–0.9	–0.9
	Difference between Quintile 1 and Quintile 5 in 1994 = 3.8				
	Difference between Quintile 1 and Quintile 5 in 1998 = 5.3				
% Children Stunted					
1994	41.0	30.8	25.3	18.9	14.0
1998	39.2	29	22.3	11.1	6.0
Change	–1.8	–1.8	–3	–7.8	–8
	Difference between Quintile 1 and Quintile 5 in 1994 = 27.0				
	Difference between Quintile 1 and Quintile 5 in 1998 = 33.2				
Infant Mortality Rate					
1994	111.1	70.6	67	66	52.4
1998	106.5	85	75.5	38.6	25.5
Change	–4.6	14.4	8.5	–27.4	–26.9
	Difference between Quintile 1 and Quintile 5 in 1994 = 58.7				
	Difference between Quintile 1 and Quintile 5 in 1998 = 81.0				

Source: DHS 1994, 1998.

TABLE B.2: MUNICIPAL HEALTH INDICATORS BY MUNICIPAL POVERTY LEVEL, 1996–2001

	Quintiles by Municipal Poverty level				
	20% poorest municipalities	**2**	**3**	**4**	**20% richest municipalities**
Average % of population living in poverty in each group of municipalities	99%	97%	91%	81%	54%
Percentage Coverage of Skilled Birth Attendance					
1996	11.7	16.0	20.1	23.7	34.8
1998	18.3	21.2	25.6	33.7	44.2
2001	24.8	29.2	36.2	43.8	55.4
	Difference between quintile 1 and quintile 5 in 1996 = 23.1				
	Difference between quintile 1 and quintile 5 in 1998 = 25.9				
	Difference between quintile 1 and quintile 5 in 2000 = 30.6				

Source: SNIS and INE 2001.

Annex C

Determinants of Use of Health Services in Bolivia

An analysis of the determinants of use of health services suggests that while important differences in access between rural and urban areas and between indigenous and non indigenous households remain, the implementation of the public health insurance improved access to services.

The main determinant that influences whether or not an individual will be attended in a health facility in case of disease or accident is whether or not s/he is covered by a Health Insurance Fund (*Caja*) or by private insurance. This increases the probability of receiving care by 23 percent. Second, a person has a 9.3 percent increased change of being attended if the head of household is non-indigenous, than if he/she is indigenous. Third, if the individual lives in an urban area, his probability of receiving care is 8.8 percent greater than if he lives in a rural area. And finally, knowledge that the Basic Health Insurance offers free care increases the probability of being attended by 5.5 percent. A 10 percent increase in income (at mean income) would increase the probability of being attended by only 0.6 percent. Education of the head of household, on the other hand, is not statistically significant.

By contrast, in the case of childbirth, social health fund or private insurance coverage is no longer the most important factor determining whether a woman will receive skilled birth attendance. In this case, the most important factors are: (i) the area of residence (living in an urban area increases the probability of skilled birth attendance by 27 percent); (ii) whether the head of household is non-indigenous (increases the probability by 20 percent); and (iii) the knowledge that the Basic Health Insurance offers free services (increases probability by 16 percent). Insurance coverage (other than public health insurance) comes fourth and increases the probability of receiving skilled birth attendance by 15 percent. A 10 percent increase in income (at mean income) only has a small impact and would increase this probability by 3 percent.

In the case of acute diarrheal diseases (ADDs) and acute respiratory infections (ARIs), the most important determinant of use of health services is again coverage by health insurance

(through social security or private insurance). This increases the probability of seeking care by around 11 percent for both cases. The second most important factor is whether the head of household is non-indigenous, which increases the probability of seeking care by 9 percent. Third, the knowledge of free services provided under the SBS, increases the probability of seeking care and is more important for ADDs than for ARIs. Finally, in these cases the area of residence is not a statistically significant determinant of use of health services, presumably because these cases can be resolved in primary care facilities, which are available in rural areas. Gender is not statistically significant in either case. Table C.1 summarizes these findings and Tables C.2 and C.3 present background data.

TABLE C.1: DETERMINANTS OF USE OF HEALTH SERVICES

	Impact on the probability of receiving institutional care (percentage increase or decrease)			
Variable	**in case of illness or accident**	**for childbirth**	**for ADDs**	**for ARIs**
Insurance coverage (Health Insurance Fund/Private)	22.9*	15.3*	10.8*	11.7*
Indigenous head of household/mother	–9.3*	–19.7*	–9.3*	–9.2*
Urban residence	8.8*	26.9*	–2.2	4.3
Knowledge of free services provided under SBS	5.5*	16.1*	8.1*	4.3*
Years of education of mother/head of household	0.06	2.4*	1.3	1.3*
Gender	0.5		–1.4	–2.3
Age	0.1*	–0.1	–0.4	–1.6
Per capita expenditures	0.018*	0.095*	0.01	0.004

*Variables significant at the 95 percent confidence level (using Probit model).
Source: World Bank 2002, based on INE, MECOVI 2000.

TABLE C.2: HEALTH INDICATORS 2001

Year 2001	Total	Area of Residence		Income Quintile					Population	
		Urban	Rural	Poorest	2	3	4	Richest	Non Indigenous	Indigenous
Prevalence										
Acute diarrheal diseases (ADD)	28	28	29	28	33	34	29	17	26	29
Acute respiratory infections (ARI)	45	44	45	44	45	43	44	48	45	44
Anti-polio vaccine	71	74	68	70	70	74	64	76	74	69
DPT Vaccines	60	65	55	55	57	66	59	65	64	59
Morbidity	15	15	15	16	14	16	15	15	14	16
Use of Services										
ADD										
Public Hospital	13	14	11	7	16	16	10	15	15	12
Health post or health center	25	20	30	25	30	25	23	15	21	26
Health Insurance Fund (*Caja*)	4	8	1	0	0	3	9	13	7	3
Clinic, pharmacy, etc.	9	12	6	7	6	9	13	11	6	10
Home	49	46	52	61	48	46	45	46	51	48
Total	100	100	100	100	100	100	100	100	100	100
ARI										
Public Hospital	11	13	9	4	13	15	9	13	13	10
Health post or health center	24	23	25	24	27	21	25	23	23	24
Health Insurance Fund (*Caja*)	5	9	1	0	1	4	7	14	7	4
Clinic, pharmacy, etc.	13	20	5	4	5	16	19	20	16	11
Home	46	36	59	68	54	44	40	30	40	50
Total	100	100	100	100	100	100	100	100	100	100
Childbirth										
Public Hospital	34	44	21	14	38	46	41	31	39	31
Health post or health center	11	12	9	9	7	15	8	14	10	11
Health Insurance Fund (*Caja*)	9	15	1	0	3	3	14	25	13	6
Clinic, private hospital, etc.	7	11	2	1	6	6	4	19	10	6
Home/Other	39	17	67	77	47	29	33	11	28	46
Total	100	100	100	100	100	100	100	100	100	100
Morbidity										
Public Hospital	16	14	17	12	17	19	14	15	17	15
Health post or health center	16	12	23	22	16	19	14	11	16	16
Health Insurance Fund (*Caja*)	15	21	4	2	7	10	22	29	21	11
Clinic, private hospital, etc.	10	13	4	3	8	9	14	16	10	10
Other (home/pharmacy)	44	39	53	62	53	43	36	29	37	48
Total	100	100	100	100	100	100	100	100	100	100

Source: INE, MECOVI 2001.

TABLE C.3: HEALTH INDICATORS 2000

Type of insurance coverage (Year 2000)	Total	Area of Residence		Income Quintile				
		Urban	Rural	Poorest	2	3	4	Richest
Public (social security)	17.1	21.8	8.8	5.8	9.9	15.0	23.6	31.0
Private	3.7	4.7	1.8	0.5	1.9	2.5	3.5	10.0
None	79.1	73.3	89.4	93.5	88.2	82.5	72.6	58.9
Other	0.1	0.2	0.0	0.2	0.1	0.1	0.3	0.1
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: INE, MECOVI 2000.

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Bolivia made progress in health status and equity in the last decade, thanks to the implementation of a series of health policies directed primarily at reducing maternal and infant mortality and controlling communicable diseases. These policies include the introduction of a focus on health outcomes in the context of decentralization, the implementation of a public health insurance, the strengthening of vertically-financed public health programs, and, to a lesser extent, an increase in the size of the sector's workforce and greater participation of indigenous peoples for health.

This report analyzes these policies, draws lessons from their implementation, discusses remaining challenges, and provides recommendations in the context of the country's latest policy developments. Findings show that while coverage has increased in almost all municipalities, significant equity gaps remain between the rich and poor, the urban and rural, the indigenous and non-indigenous. The analysis suggests that the Ministry of Health should concentrate on three key issues: first, maintaining the focus on national priorities in the context of the new expanded maternal and child insurance; second strengthening efforts to extend care to poor rural areas; and third, improving the effectiveness of the system in the context of the new management model.

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