

The State of Newborns: Bolivia

Saving Newborn Lives

July 2002

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Abbreviations and Acronyms

ACDI	Agencia de Cooperación Canadiense (Canadian Agency for Cooperation)
AID	Acción Internacional para el Desarrollo (International Action for Development)
AIDS	Acquired Immunodeficiency Syndrome
AIEPI	Atención Integrada a las Enfermedades Prevalentes de la Infancia (Integrated Health Care for Prevaling Infant Diseases)
ARENA	Proyecto de Capacitación para la Atención del Recién Nacido (Project for Training in Newborn Health Care)
ARI	Acute Respiratory Infections
BASICS	Basic Support for Institutionalizing Child Survival
BCG	Vacuna de Tuberculosis (Tuberculosis Vaccine)
BPRS	Bolivian Poverty Reduction Strategy
BRISAS	Brigadas Móviles de Salud (Mobile Health Brigades)
CAI	Comité de Análisis de la Información (Committee for the Analysis of Information)
CAPO	Certificados Agregados de Prestaciones Otorgadas (Certificates of Rendered Services)
CARE	Cooperative for Assistance and Relief Everywhere
CCH	Child and Community Health
CDC	Center for Disease Control Atlanta
CDO	Community Development Objective
CENIS	Centros de Entrenamiento Nacional Integral de Salud (Centers for National Integrated Health Training)
CEPAC	Centro de Promoción Agropecuaria Campesina (Center for the Promotion of Agricultural and Livestock Production of Peasants)
CIAES	Centro de Investigación Asesoría y Educación en Salud (Center for Research, Advice and Education in Health)
CIELO	Componente de Intervenciones Estratégicas Localizadas (Component on Localized Strategic interventions)
CIEPP	Comité de Investigación, Evaluación de Políticas de Población y Desarrollo (Committee for Research and Evaluation of Population and Development Policies)
CIES	Centro de Investigación, Educación Servicios “Salud Sexual y Reproductiva” (Center for Research, Education and Services in Sexual and Reproductive Health)
CLAP	Centro Latino Americano de Perinatología (Latin American Center for Perinatology)
CNS	Caja Nacional de Salud (National Health Care Service)
CORDES	Corporación de Desarrollo (Development Corporation)
COTALMA	Comité Técnico de Apoyo a la Lactancia Materna (Technical Committee on Support of Maternal Breastfeeding)
CSRA	Consejo de Salud Rural Andino (Council for Andean Rural Health)
DESAPER	Proyecto de Desarrollo y Salud Perinatal (Development and Perinatal Health Project)
DFID	Department for International Development
ECLAMP	Centro Latinoamericano de Malformaciones Perinatales (Latin American Center on Perinatal Malformations)
ENDSA	Encuesta Nacional de Demografía y Salud (National Survey on Demography and Health)
ENMR	Early Newborn Mortality Rate
FCI	Family Care International
FDC	Fondo de Desarrollo Campesino (Peasant Development Fund)
GDP	Gross Domestic Product
GTZ	German Technical Cooperation
HIV	Human Immunodeficiency Virus
IBBA	Instituto Boliviano de Biología de Altura (Bolivian Institute on Altitude Biology)
IDB	Interamerican Development Bank
IEC	Information, Education and Communication

IEC/O	Information, Education and Communication and Orientation
IFOF	International Family Planning Federation
ILCA	Instituto de Lengua y Cultura Aymará (Institute on the Aymará Language and Culture)
INASME	Instituto Nacional de Medicamentos (National Institute of Medication)
INE	Instituto Nacional de Estadística (National Statistics Bureau)
IUD	Intra-Uterine Device
IUSG	Intra-Uterine Stunted Growth
JHPIEGO	Johns Hopkins Program for International Education in Gynecology and Obstetrics
JICA	Japanese Cooperation
JSI	John Snow Incorporated
LWB	Low Weight at Birth
MC	MotherCare
MDH/SNS	Ministerio de Desarrollo Humano/Secretaría Nacional de Salud (Ministry of Human Development/National Health Secretary)
MELA	Método de Lactancia y Amenorrea (Method for Breastfeeding and Amenorrhea)
MPSSP	Ministerio de Previsión Social y Salud Pública (Ministry of Social Prevision and Public Health)
MREC	Monthly Report on Epidemiological Control
MSH	Management Science for Health
MSPS	Ministerio de Salud y Prevención Social (Ministry of Health and Social Prevision)
NB	Newborn
NBS	Norma Boliviana de Salud (Bolivian Health Norm)
NB-SNS	Norma Boliviana - Secretaria Nacional de Salud (Bolivian Norm - National Health Secretary)
NGO	Non Governmental Organization
NMR	Newborn Mortality Rate
ORU	Oral Rehydration Units
PAI	Programa Ampliado de Inmunizaciones (Expanded Immunization Program)
PES	Plan Estratégico de Salud (Strategic Health Plan)
PHO	Panamerican Health Organization
PHW	Popular Health Workers
PIASS	Programa Integral de Actividades en Áreas de Salud (Integrated Program for Health Related Activities)
PNSSR	Programa Nacional de Salud Sexual y Reproductiva (National Sexual and Reproductive Health Program)
PROCOSI	Programa de Coordinación de Salud Integral (Integrated Health Coordination Program)
PROISA	Proyecto Integral de Salud (Integrated Health Project)
PRONALCOBO	Proyecto Nacional de Lucha contra el Bocio (National Project against Goiter)
PRONIMA	Programa Niño Madre (Child Mother Program)
PROSIN	Proyecto de Supervivencia Infantil (Child Survival Program)
PSF	Programa de Salud y Fortalecimiento (Program on Health and Strengthening)
REBOHUPAN	Red Boliviana de Humanización del Parto y Nacimiento (Bolivian Network for the Humanization of Childbirth and Birth)
SAFCO	Sistema de Administración Financiera y Control de Operaciones (System for Financial Administration and Control of Operations)
SALGEN	Proyecto Salud Genética (Genetic Health Project)
SBP	Sociedad Boliviana de Pediatría (Bolivian Society of Pediatricians)
SBS	Seguro Básico de Salud (Basic Health Insurance)
SD	Supreme Decree
SECI	Sistema Epidemiológico Comunitario Integral (Integrated Communal Epidemiological System)
SEDES	Servicio Departamental de Salud (Departmental Health Service)
SIG	Sistema de Información General (General Information System)
SIP	Sistema Informativo Perinatal (Perinatal Information System)
SMN/JHPIEGO	Salud Materna y Neonatal (Maternal and Neonatal Health)
SNIS	Sistema Nacional de Información de Salud (National Health Information System)
SNL	Saving Newborn Lives
SNMN	Seguro Nacional de Maternidad y Niñez (National Maternal-Child insurance)
SNS	Secretaría Nacional de Salud (National Health Secretary)
SOBOMETRA	Sociedad Boliviana de Medicina Tradicional (Bolivian Society of Traditional Medicine)
SRH	Sexual and Reproductive Health

SVEMM	Sistema de Vigilancia Epidemiológica de la Muerte Materna (System for Epidemiological Control of Maternal Mortality)
UCIN	Unidad de Cuidados Intensivos Neonatales (Unit for Neonatal Intensive Care)
UDAPSO	Unidad de Desarrollo de Política Social (Unit for the Development of Social Policies)
UMSA	Universidad Mayor de San Andrés (State University San Andrés)
UMSS	Universidad Mayor de San Simón (State University San Simón)
UNAP	Unidad Nacional de Atención a las Personas (National Unit for People Care)
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
URS-MSPS	Unidad de Reforma de Salud Ministerio de Salud y Previsión Social (Health Reform Unit - Ministry of Health and Social Prevision)
USAID	United States Agency for International Development
WARMI	Proyecto de Desarrollo Juvenil Comunitario (Communal Youth Development Project) - Save the Children
WB	World Bank
WHO	World Health Organization

Words of Gratitude

This report contains the experience and is the result of efforts and hard work of many people:

- Guillermo Seoane, Ramiro Eguiluz, Miguel Angel Ugalde and Verónica Kaune of the MotherCare team, in charge of research and elaboration of the first documents.
- The 79 male and female participants of the Workshops on Results of the Situational Analysis, who contributed with their experience so as to identify our future actions.
- Anne Tinker, Ron Parlato and La Rue Seims whose comments enriched the document.
- Elizabeth Bocaletti, Gonzalo Mansilla, Carolina Hilari and Bertha Pooley, who contributed to the analysis and final version of the document.
- Susan Niermeyer, Martha Mejía, Miriam López and Dilberth Cordero who revised the work and contributed valuable suggestions.
- Sandra Aliaga Bruch, in charge of final editing.

Introduction

Newborn mortality in Bolivia decreased from 43 to 34 per thousand live births between 1988 and 1998. However, the impact of the decrease of infant mortality from 91 to 67 out of every 1,000 live births during the same ten-year period was more important.

Most actions focusing on the reduction of neonatal morbidity and mortality in Bolivia formed part of programs that emphasized women and children in general, without specifically dealing with the problems of the neonate population, which would result in a considerable improvement of their standard of living.

The Saving Newborn Lives/SNL Initiative of Save the Children - funded by the Bill & Melinda Gates Foundation - identified Bolivia as one of the 6 focus countries that were selected to support sustainable actions and interventions aimed at generating conditions and means so that mothers and children can survive and enjoy good health.

Within this framework, an analysis was carried out on the situation of neonates in Bolivia, which had the following objectives:

- Determine the magnitude of the problem of neonate morbi-mortality.
- Identify the epidemiological, socio-cultural and structural causes that influence the state of health of newborns.
- Carry out an evaluation of public policies related to this topic: positive and negative aspects, achievements and deficiencies, potential and limitations.
- Identify the programs and projects that have the most considerable impact on care practices of newborns, explaining the reasons for success.
- Prepare a table on the situation of actors, processes and results, as regards institutionalized health care for neonates.
- Define lessons learned for the design, implementation and monitoring of future institutional actions regarding health care for neonates.

This document is based on research carried out by the MotherCare team of consultants - Guillermo Seoane, Ramiro Eguiluz, Miguel Angel Ugalde and Verónica Kaune - and contributions of participants in the Workshop on Results of the Situational Analysis that took place on January 29, 2002 (staff of the Office of the First Lady, the Ministry of Health and Social Prevision, representatives of international donors, scientific societies, hospitals, NGOs, etc.)

Secondary sources were used as well (studies and bibliography produced in the country), and statistical information resulting from Surveys on Demography and Health and the Health Information System (SNIS). On the other hand, representatives from state entities, NGOs, international donors, training centers and health service providers in the cities of La Paz, Cochabamba, Santa Cruz, Tarija, Oruro and Potosí were interviewed.

The six chapters contained in this document cover specific topics of the reality of newborns:

- The *first* chapter analyzes the present state of public health policies for neonates. This chapter contains a revision of the laws, plans, processes and actors, which have facilitated or impeded the implementation of programs and projects for the benefit of this population group. It is based on secondary information and opinions of decision-makers at the governmental, level, and at the level of multilateral and bilateral donors, NGOs and human resources' training entities.
- The *second* chapter focuses on the epidemiological situation of neonates and mothers based on indicators collected in National Surveys on Demography and Health (ENDSA, 1989, 1994 and 1998) and the National Health System (1996-2001). Furthermore, it includes information of baseline studies and investigations undertaken under different programs and projects.
- The *third* chapter gives an overview of some Andean and Lowland practices as regards pregnancy, childbirth, newborn and post-childbirth care in peri-urban and rural contexts, with references to socio-economic and cultural factors that affect care practices for newborns.
- The *fourth* chapter includes a critical revision of health programs and projects, which specifically focus on neonates. It includes an identification of institutions, programs and projects with interventions for the benefit of mothers and newborns.
- The *fifth* chapter describes the supply and demand of services, in particular under the Service Network of the Public Health Care System. It analyzes factors that influence health care for newborns, considering the following parameters: availability, use and training of human resources; infrastructure, equipment and use of normative instruments for neonate care; quantitative information on use of public health care services and qualitative information on perceptions of the population on the quality of those services.
- The *sixth* chapter gives an overview of recommendations contained in previous chapters, as a basis to determine future actions of the project in Bolivia.

Chapter I:

Health policies

This chapter analyzes laws, plans, international and national norms presently in force, as well as the health policies, plans and programs that influence the situation of newborns within the national context. In doing so, changes in public policies related to neonatal issues and dynamics thereof are observed. Moreover, the agenda of institutions and perceptions of actors are elaborated. An analysis is made on the level of consolidation of the neonatal health care programs, from the perspective of a public policy within the framework of overall transformations of the Bolivian State.

Socio-economic context of the problem

Social and economic context

Bolivia is a landlocked country in South America. In its territory of 1,098,591 km², three large ecological zones can be identified: the Highlands (Altiplano: La Paz, Oruro and Potosí), covering 16% of the territory, the Valleys (Cochabamba, Chuquisaca and Tarija), covering 19% of the territory and the Lowlands (Pando, Beni and Santa Cruz), covering 65% of the territory. In political and administrative terms, Bolivia is subdivided into 9 departments and 320 municipalities.

The following table shows the principal macroeconomic and social indicators characterizing the country:

Table 1
Economic and social indicators of Bolivia

[...]

- a) Year 2000
- b) Year 2001
- c) October 2001
- d) Urban: 51.8 %; Rural: 79.8%

Source: Jiménez F. UDAPE, 2001

According to preliminary data of the last Census (2001), in 2001 the total population amounts to 8,280,184 inhabitants, with a population density of 7.6 inhabit./km². 62.2% of the population lives in urban areas, and 37.8% in rural areas¹. This means there is a clear trend towards urbanization and the concentration of health problems in urban areas.

Estimates are that there are over 3.6 million indigenous inhabitants, who belong to 36 ethnical groups, mainly to the Andean native Quechua and Aymará cultures and the lowland Tupi-Guaraní culture.

According to estimates for the year 1999, 16.4% of the population is illiterate, which is lower than the 20% in the census of 1992. The schooling index amounts to 0.79, the average number of years of schooling is 3.7. Almost one third of the country's inhabitants are functional illiterates (20% never attended school). This latter population group is mainly concentrated in rural areas and the female population (PHO/WHO, 2000).

The poverty level in Bolivia is among the highest in Latin America (63%), the incidence of poverty being three times higher as compared to countries with lower levels of poverty. In 1992, 70% of the population lived in poverty and 37% in extreme poverty. The urban-rural gap was expressed in the following data: at the urban level, 53% of the population lived in poverty and 13% in extreme poverty; at the rural level, 95% of the population lived in poverty and 69% in extreme poverty (UDAPE, 2000).

In that same year, unemployment fluctuated between 9% (official number) and 24% (estimates of the Catholic Church and the Bolivian Central Union - COB). For the year 1997, calculations were that 728,902 persons worked in the informal sector, mainly in the cities of Santa Cruz, La Paz and El Alto (UDAPSO, UNDP, 1997). The labor demand of the economy was limited (INE, 1998) and unemployment increased substantially. Likewise, both the quality of employment and economic growth worsened. In the last 5 years, almost 40% of social expenses were destined to Primary Education, 22% to Health, 11% to Services and Urbanism, 6% to Rural Development and the rest to the Pension System.

According to the Human Development Report of 1999, Bolivia is considered a country with medium human development. Based on its Human Development Index, Bolivia occupies the 112th place and based on its Gender related Development Index, the 99th place out of a total number of 146 countries (UDAPSO, UNDP, 1997).

Based on this information, we can conclude that the social problems with the most negative repercussions on the state of health are the following: i) extreme poverty: nearly two thirds of the population are poor; ii) low levels of schooling, especially among girls; iii) high segmentation of Bolivian society; iv) low income levels; and v) weak institutional capacity in general and as regards key basic utilities (water and sanitation) in particular (World Bank, 1999).

Elaboration of the Public Agenda

Elaboration of institutional policies focused on newborns

In general, the concept of public policy-making - in the sense of social intervention processes that crosscut the different programs and projects, and which orient the use of resources and the planning of activities aimed at the achievement of clearly established

goals and objectives - is absent as regards neonate issues. In a parallel way, no specific institutional policies for neonates are developed in health organizations of civil society.

Incorporation in state policies

The state policies and programs on neonate care that guide the institutional actions of both the state and civil society concerning neonates are: the Basic Health Insurance and the National Plan for Mother-Newborn Health Care.

Because of the existence of state entities and international donors that carry out their interventions within the framework of government neonate policies, it is possible to identify the potential to design and widen institutional networks with shared objectives based on shared policies. In this sense, interinstitutional coordination is a basic condition to avoid the duplication of efforts and increase the efficiency and effectiveness of plans at the national level.

Design and application of programs and projects

A second group of institutions is composed of NGOs and international donors that have specific mother-child programs and projects.

In these cases, newborn health care has not yet become a crosscutting policy in the overall orientation of the institution. Rather, they have newborn programs and projects within the framework of mother-child care.

In this second group, neonate issues are considered from different angles:

- **From the perspective of sexual and reproductive health:**

In this approach, the primary focus is on sexual and reproductive rights of women. Neonate survival is considered based on the welfare, autonomy and empowerment of women. The decrease of neonatal morbi-mortality is related to the right of desired reproduction and therefore, to the increase of contraception.

- **From the perspective of the adaptation / extension of institutionalized health services compatible with cultural and socio-economic dynamics of vulnerable sectors with high rates of maternal and perinatal mortality:**

In this approach, the following elements are emphasized:

- Adequate prenatal control to identify possible problems of the mother and fetus.
- Institutional delivery.
- Identification and adequate health care in case of obstetric and neonatal complications
- Positioning of sexual and reproductive rights

- **From the perspective of the nutritional state of mothers and neonates:**

In this approach of institutional intervention, "prevention" is underlined, so as to optimize the development of newborns. Activities focus on ensuring the mother is well nourished before and during pregnancy. Another objective is to improve biological development of the mother and her baby, promoting breastfeeding as from the first hours after birth as a basic priority².

These elements of institutional intervention are simultaneously included in mother-child care programs or projects, although in general, one element is given more emphasis. It is therefore possible to talk about different approaches for institutional intervention in newborn care, which are reflected in these programs and projects.

Implementation of punctual and isolated activities

A third group of institutions contemplated in the present study is not only characterized by the absence of institutional policies but also of specifically designed programs and projects for neonate survival and care. This group mainly consists of entities that train health care suppliers and some municipalities. In these cases, neonate care is less important as compared to other health objectives.

Although it seems contradictory, this institutional emphasis is the one that identifies most with spontaneous attitudes of the most vulnerable social sectors in terms of neonate morbi-mortality. In other words, in various rural communities and some peri-urban zones more importance is given to the physical and emotional well-being of the mother during pregnancy, childbirth and after childbirth than to neonate survival.

Legitimation of policies

The international neonate agenda: declarations and commitments

During the nineties, the United Nations organized a world governmental conference cycle in its search to achieve consensus on international plans aimed at a socially equitable human development in the XXI Century³. Within this framework, the World Summit for Children was held in 1990, in which over 150 states committed to 27 goals to be met by the year 2000. The most remarkable goals were:

- Reduce maternal mortality by 50% as compared to the rate in 1990.
- Reduce the child mortality rate in under fives by one third or to 70 per 1,000 live births, whichever is the highest.

This document was added to the Declaration of the Rights of Children (1924) and the Convention of the Rights of Children (1989), both of which instruments focused on the welfare of boys and girls. Bolivia is a party to both international commitments for the benefit of women and children.

Article 3 of the **Universal Declaration of Human Rights** says: “Everyone has the right to life, liberty and security of person” and more specifically paragraph 2 of Article 25 says: “*Motherhood and childhood are entitled to special care and assistance. All children, whether born in or out of wedlock, shall enjoy the same social protection*”.

Articles 6 and 24 to 27 of the **United Nations Convention on the Rights of the Child** affirm the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation, particularly emphasizing primary health care, preventive care and the decrease of child mortality. States shall take all effective and appropriate measures with a view to abolishing traditional practices prejudicial to the health of children

National norms

Laws, codes, supreme decrees, ministerial resolutions and the respective regulations which constitute Bolivian legislation (Loayza and Tejada, 1998) are based on the Constitution, which adopts the protection of the family, maternity and childhood as basic principles. Some important documents in Bolivian legislation:

- Officers of the Civil Registry - which depends on the National Electoral Court - are responsible for the registration of births, matrimonies and deaths of Bolivian citizens.
- The **General Labor Law** and the corresponding Regulation protect pregnant women who work as salaried employees, granting them subsidies and pre and postnatal family allowances, and provide for the impossibility to dismiss women until one year after having given birth.
- The **Social Security Code** (1956) affirms the right of wives of insured workers to receive health care until six weeks after childbirth.
- The **Code on Children and Adolescents**, enacted in 1992, and updated in 2000, is an instrument for the protection of infants and children.
- Based on the **Popular Participation and Decentralization Laws** (1994), departmental and municipal governments assume concrete responsibilities in the implementation of health programs - in their respective levels - for the benefit of mothers and children.
- The **National Maternal-Child Insurance (SNMN)** (1996) is created with the fundamental objective of increasing coverage (with services subsidized by municipalities) of pregnant women, newborns and children under 5, so as to diminish maternal and child mortality rates. In 1998, this insurance is replaced by the Basic Health Insurance (SBS) as a public universally accessible service aimed at rendering essential quality health care services, which are culturally adequate. Some services are later added for children under 5 and women of fertile age, as well as health care for endemic diseases.
- The **Health Insurance for Indigenous and Native Peoples** (2002) provides services of the SBS for Bolivian ethnic groups with culturally adequate services.
- The purpose of the draft **Bill of the Universal Health Insurance**, to be discussed in the following government terms, is to ensure the right to health for the entire

population of the national territory. This law proposes creation of the integrated, decentralized and participatory Bolivian Health Care System.

Government Plans

Prioritization of newborns in public policies

The historic milestones in public health in Bolivia are consistent with the political process in the country during the last 19 years of democracy.

1982 - 1985

“Las bases para la salud del gobierno democrático and popular” (The foundations for health care of the democratic and popular government) (MPSSP, 1983) summarizes the central lines of the health care policy designed when democracy was reestablished in the country. Health is emphasized as a right, as well as the need "to increase the standard of living of the population, diminishing the risk of falling ill and dying... by means of intra and intersectoral coordination, integrated with organized popular actions". Rapid action programs are proposed in the fields of mother-child care, the health of workers and environmental sanitation.

The principal achievements of this period were:

- The Programa Integral de Actividades en Áreas de Salud (PIASS - Integrated Program for Health Related Activities), which developed the provision of health care services at the local level with popular co-management.
- The Programa Ampliado de Inmunizaciones (PAI - Expanded Immunization Program), which implemented mass vaccination campaigns by means of popular health mobilizations).
- The Programa Nacional de Lucha contra el Bocio (PRONALCOBO - National Program Against Goiter), which enhanced the iodizing of salt.
- The Programa de Control de la Diarrea Infantil (Program to Control Child Diarrhea) created popular and institutional oral rehydration units.
- The Programa de Medicamentos Esenciales (Essential Medication Program) supplied popular and institutional pharmacies with essential medication, in coordination with INASME.
- The creation of Popular Health Committees.

In this period, international donors supported vaccination by means of the inter-agency Committee of the PAI; UNFPA and the PHO/WHO promoted the PIAAS strategy; UNICEF the iodized salt program; and the Mother-Child Program (PRONIMA II) financed free childbirth.

1985 - 1989

The objective of the “**Integrated Health Plan**” (MPSSP, 1986) was for all inhabitants of Bolivia to have access to socially acceptable health care services, which are compatible with social and economic development, primary health care strategies, the regionalization of services, intersectoral actions, actions focused on social mobilization and participation.

In 1989, at the end of the government term, the “**National Health Project**” (MPSSP, 1989) was published, containing the proposal to create an integrated health care model aimed at generating a process of institutional reorganization. The idea was to achieve a decentralized and homogenous management of the public system, social security and the private sector in the health care services network, prioritizing basic services and emphasizing preventive activities. The proposed goals were to diminish perinatal mortality from 110 / 1,000 live birth to 70 / 1,000 and maternal mortality from 48 / 10,000 to 33 / 10,000.

The principal achievements in this period were:

- Start of the design of the project to support institutional strengthening and the development of services of PROISS, PSF and CCH with funding from the World Bank, IDB and USAID; respectively; and
- The National Reproductive Health Program of UNFPA/PHO/WHO.

Donors mainly supported the PAI and Reproductive Health Program.

1989- 1993

The “**Plan for Child Survival and Maternal Health**” proposed prevention of and rehabilitation in the case of malnourishment of children as from their intra-uterine life, the promotion of exclusive breastfeeding, decrease of the prevalence of low weight at birth and increase of the demand of integrated health care services (MPSSP, 1990).

The principal achievements in this period were:

- The Proyecto Integral de Infraestructura y Sistemas de Salud (PROISS - Integrated Project for Health Infrastructure and Health Systems).
- The Programa de Salud y Fortalecimiento (PSF - Program on Health and Strengthening).
- Start-up and strengthening of health care de-concentration by means of support for health care units and health districts.
- The Sistema Nacional de Información en Salud (SNIS - National Health Information System).
- The National Reproductive Health Committee.
- Elaboration of first norms on contraception.

In this period, training of empirical birth attendants was emphasized, as well as the distribution of minimum equipment for institutional childbirth and birth at home packages (MPSSP, 1993).

1993 - 1997

The ***Plan Vida*** (Life Plan) for the Accelerated Reduction of Maternal and Neonatal Mortality (MDH-SNS, 1994) was set up with the purpose of reducing maternal mortality by 50% and neonatal mortality by 30%, by means of local health care systems that emphasized integrated maternal-neonatal care.

The principal achievements in this period were:

- Incorporation of the "Communal Action Cycle" based on the experience of the Warmi Project⁴ as a communal strategy of the Plan Vida, benefiting mothers and newborns.
- Start actions for the Health Reform.
- The National Mother-Child Insurance (SNMN, 1997, Supreme Decree 24303).
- The Bolivian Health Norm, with protocols for the care of women and newborns (MDH-SNS, 1997).
- Implementation of the System for Surveillance of Maternal Mortality.
- The Committee for Safe Motherhood.

1997-2001

The ***Strategic Health Plan*** (MSPPS, 1998) proposed three strategic lines of action: the Basic Health Insurance, the Epidemiological Shield and Institutional Strengthening.

The principal achievements in this period were:

- Development of a model called the "Public Investment in Health" as an instrument to regulate cooperation for the achievement of the strategic objectives of the sector within the framework of the Equity pillar, under a new style of State-Cooperation relationship.
- The Basic Health Insurance (SBS, 1999, Supreme Decree No. 25265) as a public universally accessible service, which covers 92 essential quality services that are culturally adequate.

Table 2

Essential health services covered by the SNMN and SBS

Health care for children under 5

- Regular vaccination (PAI) in children under 1
- Acute Respiratory Infections (ARIs)
- Diarrhea
- Jaundice

- Fetal suffering
- Pneumonia of newborns
- Neonatal sepsis
- *Neonatal asphyxiation* *
- *Local bacterial infections in neonates under two months* *
- *Serious bacterial Infections* *
- *Nutrition and development* *

Health care for pregnant and breastfeeding women

- Prenatal medical check-ups
- Attendance in childbirth and newborn care
- Induction and/or conduction labor
- Caesarea and newborn care
- Medical check-up after childbirth
- Obstetric and neonatal emergencies
- *Complications of abortion* *

Health care for the population in general

- *Family planning* *
- *Sexually Transmitted Diseases* *
- *Malaria* *
- *Tuberculosis* *
- *Cholera* *

Source: MSPS Ministerial Resolution 0187/99

* Services incorporated through the SBS.

Factors that enhance viability and impede application of policies, programs and projects for newborn care

The assessment of factors that enhance viability and limit the application of policies, programs and projects for neonate care, shows significant differences between the different interviewed segments: decision-makers of state entities, NGOs and the international donor community; and entities that train human resources in the health sector.

It seems that the dynamics of functions and position of decision-makers in the state structure makes it impossible for them to identify and especially, to value elements that support the application of the programs in which they participate. Anyway, the people interviewed in Oruro and Potosí mentioned viability enhancing factors such as the SBS, participation of the municipality in the purchase of input and punctual funding by international donors.

On the other hand, NGO and international donor representatives who were interviewed say that at present the climate - at the level of state entities - is better for the application of specific policies for women-child care and for coordination among different actors.

This perception is mainly based on the start-up of the Basic Health Insurance, which contemplates care for obstetric and neonatal complications. In the NGOs' opinion, a second viability enhancing factor is international funding, which enables the implementation of specific programs.

The International Donor Community values these initiatives because they show the state's preoccupation with human capital in its most basic dimension: survival. However, they mention some inconsistencies in application of these state policies and programs at the service delivery level.

As regards the principal obstacles, the interviewed representatives of state entities mention deficiencies in the infrastructure and coverage of health care services, e.g. the lack of economic resources and staff, which makes it impossible to extend and improve coverage of neonatal health care services.

They also mention other obstacles, such as the limited valuation of neonates, especially in their first days of life, when most deaths occur; inadequate conditions for births at home and neonate care; and finally, poverty, especially in the rural area, which makes it difficult for the population to have access to health care services.

On the other hand, decision-makers in NGOs and international donors identify two important obstacles or barriers for adequate application of neonatal health care programs: a) Political interference and the permanent rotation in public entities, which further implies the discontinuous application of programs; and b) Inadequate training and cultural awareness of health staff, which limits access to services for native peoples.

It is clear that interviewed staff of state entities tend to justify their performance and the quality of health care services. Hence, they underline effectiveness of the institutionalized health system: neonatal morbi-mortality will decrease when the infrastructure and input of health care services are improved. Within this approach, there is no space to reflect on the importance of articulating the supply and demand of services, the relationship with the traditional health care system, and the need for training and cultural awareness programs for health providers.

As entities focusing on training of human resources do not objectively include specific neonate care programs, people in charge cannot identify viability enhancing or impeding factors for application of these programs.

Effects of the policy

According to different studies⁵, although the SNMN and SBS contribute to the improvement of the accessibility of services as the economic barrier is lowered, cultural, linguistic, geographical barriers persist, especially in the rural area. The Indigenous Insurance that has been enacted only recently, is one of the initiatives undertaken to try and lower this type of barriers.

The actual impact of the SBS on ethnical groups, marginal socio-economic groups is not yet known, neither is its effect on the reduction of gaps. As regards the technical quality of the services, different initiatives are being developed, which will enable measurement of the results of services.

Final comments

Policies must give rise to an adequate environment that enhances development of the interventions required to save newborn lives. The analysis of present state policies and programs clearly shows that there is a need to prioritize neonates as a population group that requires specific actions. In operational terms, this implies a series of changes, such as:

- Incorporate a clear differentiation of the neonatal phases in norms so as to channel specific characteristics for each group;
- Increase services rendered under the SBS, especially concerning health care for premature babies and girls with low weight at birth;
- Incorporate actions focusing on neonatal health care in different strategies, programs and projects that are presently being implemented by the Ministry of Health, e.g. Sexual and Reproductive Health, Breastfeeding, etc.;
- Supply health care providers with the necessary equipment and input so as to implement the interventions.

Finally, an integrated strategy should be designed that contemplates actions to ensure execution of a health policy, which will consider neonates as a target population group and which will therefore develop actions required to care for them and save their lives. In doing so, it will be critical to subscribe strategic alliances for implementation of the said policies between national, regional and municipal authorities and the population in general

Presentation

Without any doubt, in general the health situation of the Bolivian population has improved in the last decades, and in these last years, considerable progress has been made in the reduction of child mortality. Nonetheless, the national average number of 34 deaths out of every 1,000 live births, and 44 in rural areas, shows that we have not yet been able to improve the health of boys and girls under 28 days old, and that there are still problems related to discrimination and exclusion.

One of the basic principles of the rights approach is that rights are universal and that there is a clear need for the state to supply all mechanisms required for people to be able to exercise their rights. Within this framework, statistics show exclusions in health issues. In the case of neonates, it is our responsibility to give them the opportunity to enjoy the basic right to life and to try to deal with the barriers that impede survival of this population and an acceptable quality of life.

The document presented in this edition is extremely important, as it tries to give a clear overview of health problems in this age group, aimed at identifying gaps and possible solutions to intervene and revert this situation. Likewise, it proposes to identify possible areas of complementation with projects and programs in execution and to promote joint actions and alliances so as to develop a strategy for newborns.

Experience has proven that usually no high technology, expensive equipment and considerable economic investments are required to achieve the goal of diminished neonatal mortality. We need to create an enabling environment, a community that is better informed and aware on these issues and that actively participates in the solution of these problems, together with other social actors. We need families in which both men and women are able to take decisions; and in health care services, we need workers with sufficient criteria and skills to attend obstetric and neonatal complications, so that the Services Network and Social Network will interact and ensure optimum levels of problem solving.

The contribution of everyone is critical. This document should not be kept in office libraries, but it should become a tool for actions.

Gaps in neonatal health care in the country clearly show there is a social debt that must be solved. Hence, the promotion of neonatal health care is a task that can no longer be postponed and avoided by the State, international donor community and society.

Executive Summary

Bolivia is a landlocked country in South America with one of the highest levels of poverty in Latin America. According to preliminary data of the Census 2001, the total population amounted to 8,280,184 inhabitants in 2001. 62.2% of the population lives in urban areas, and 37.8% in rural areas. Estimates are that there are over 3.6 million indigenous inhabitants, who belong to 36 ethnical groups, mainly to the Andean native Quechua and Aymará cultures and the Lowland Tupi-Guaraní culture. According to the Census carried out in 1992, 70% of the population – mostly of rural areas – lived in poverty.

Policies

Analyzing present health policies and programs, it becomes clear that there is an urgent need to prioritize newborns, both boys and girls, as a target population group that requires specific actions.

The following public neonate care policies and programs guide the institutional actions taken: the Basic Health Insurance and the National Plan for Mother-Newborn Health Care. In spite of the existence of both programs, so far it has been impossible to ensure incorporation of the neonate component as a crosscutting theme in the different programs implemented by the Ministry of Health.

Epidemiology

Out of every thousand live births in Bolivia, 92 babies die before the age of five, 67 during the first year and 34 even before they are 28 days old. Newborn mortality accounts for over half of infant mortality and over one third of child mortality. Two thirds of all newborn babies who die in the first 28 days die in the first week and half of them die on the first day, 65% of who in the rural area.

The highest rates of newborn mortality are found in the departments of La Paz, Potosí and Cochabamba, particularly in the rural area. In absolute numbers, over half of all newborn deaths are concentrated in the ‘central axis’ departments: La Paz, Cochabamba and Santa Cruz (6,056 out of the estimated total of 8,909).

At hospital level, early newborn mortality represents 80% of overall newborn mortality, whereas at home birth level, this percentage amounts to 57%, according to data collected during household surveys. This gap could be explained by the fact that more women experiencing a complicated pregnancy or childbirth recur to hospitals since the National Maternal-Child Health Insurance, and later the Basic Health Insurance, were created, as well as by considerable levels of sub-registration in household surveys on newborn mortality.

Recent information provided by the PHO/WHO shows that in the year 2001, 40% of all deaths considered under hospital mortality in children under 5 were neonate deaths. 80% of those deaths corresponded to early newborn mortality, the remaining 20% to newborn mortality of babies between 8 and 28 days. These deaths were mainly associated with infectious diseases, perinatal asphyxiation, low weight at birth and premature birth. On the other hand, neonatal morbidity is associated rather with asphyxiation and hypothermia.

Breastfeeding is a common practice in Bolivia, which does however not automatically ensure that percentages of immediate and exclusive breastfeeding are adequate. According to the ENDSA of 1998, of the 97% of neonates who were breastfed sometime, only 38% were breastfed immediately - during the first hour - and 68.5% exclusively during the first month.

Coverage of prenatal control by health staff has improved in the last years. In 1998, coverage amounted to 69%. The information of health centers also shows an increase, 89.57% having been achieved for that same year. Nonetheless, as regards four or more prenatal control, the percentage decreases. In the year 2000, only 33.2% of women had four or more prenatal controls, the average of prenatal check-ups at the national level being 2.2 controls. It is also worth mentioning that fetal welfare is not yet monitored during these controls.

With respect to institutional coverage of childbirth, in 1998, 53.2% of childbirths were attended in institutions, which means childbirth at home has decreased 11 points as compared to 1994. Although institutional childbirth attendance has increased, average postnatal controls have not increased proportionately and fluctuated between 28% and 29% between 1996 and 2000, in spite of this service being contemplated under the SBS.

Although the maternal mortality rate decreased from 416 to 390 per 100,000 live births between 1989 and 1994, this rate is still the highest of the American continent after Haiti (523 / 100,000 live births). This rate is associated with complications during pregnancy (62%), childbirth (23%) or lying-in (15.5%). 81% of these deaths occur outside health institutions.

Socio-cultural aspects

In popular-urban and rural sectors of the country, traditional childbirth and post-childbirth practices focus on mother care as the first priority. This behavior can also be observed in some health centers. Health of neonates is the second priority, especially if the family already has children.

In rural areas, during the first hours of life, neonates are not given any mother's milk as people believe this might be harmful. They are fed with herbal teas, so as to disinfect and clean them from the impurities they received in the mother's belly and they are wrapped up in cloth or woven fabric. They do not stay near their mother, but they are cared for by relatives, mostly women. Only one to three days after childbirth, neonates get in physical

contact with the mother for feeding. If they have survived these first hours, it means they are strong enough to cope with the hard conditions of poverty.

When childbirth and post-childbirth care take place at home with no qualified assistance, possibilities to deal with neonatal complications are limited, which has a negative impact on child mortality in the rural and peri-urban area. Some traditional practices in the countryside consist of e.g. massaging the woman's belly in the case of dystocia or to even "toss her in a blanket" ("manteo") in extreme cases for the baby to assume the correct position. Eyes and nose infections are treated with chamomile or other local herbs and diarrhea is treated with herbal teas. No systematized practices have been identified to treat jaundice or hypothermia.

Some of the most common practices that are not harmful for mothers and children are: massages, sheltering, privacy, the presence of relatives and giving birth in a crouching position. However, it should be investigated whether the tossing, strong massages ("kneading"), incense burning, infusions and other practices during childbirth are harmful.

Furthermore, it is important to investigate western practices used in health services that involve unnecessary procedures for the babies: the use of feeding bottles to give the newborns herbal teas and the separation of mother and baby.

Programs and Projects

At state level

The Strategic Health Plan of the Ministry of Health and Social Prevision (MSPS) does not identify neonates as an exclusive target population for its actions. This population group has been incorporated rather in programs such as the National Sexual and Reproductive Health Program and the Program for Health Care for Children Under Five, Schoolchildren and Adolescents. Those programs are made operational through the National Plan for Maternal and Neonatal Health Care. The neonatal component was also included in the AIEPI strategy, which will be implemented in some districts in 2002.

The Basic Health Insurance covers health care services for children under five and women of fertile age, besides health care for endemic diseases. As regards neonates, neonatal asphyxiation and sepsis, jaundice and vaccinations are contemplated. This insurance is funded with municipal funds. In case of referral, costs for the moving of patients are also covered. Although it has been possible to increase coverage of ill neonates, coverage of the number of days of internment is still insufficient and input for premature babies is still missing.

The Quality Observatory of the MSPS carries out diagnostics to identify needs and develop intervention plans, which include updating of staff in obstetric and neonatal emergencies and supervision of the quality of services.

Presently, the MSPS – with technical assistance provided by the SMN/JHPIEGO – is developing a proposal on Service Networks and Social Networks for the improvement of maternal and neonatal health. Although the neonatal component is explicitly contemplated, the proposal basically focuses on essential obstetric functions, leaving gaps in the handling of neonates.

International cooperation

Some of the agencies that support maternal health and health care for under fives in Bolivia, are: USAID, DFID, ACDI, JICA and GTZ as regard bilateral cooperation; and UNICEF, PHO/WHO, UNFPA and the World Bank as regards multilateral cooperation.

The activities of USAID in neonatal health care have been implemented through the Integrated Health Project PROSIN and BASICS, with development of the AIEPI Neonatal Strategy. The latter contributed with the instrument called Verbal Autopsies; SMN/JHPIEGO with Maternal-Neonatal Mapping and the Service Verification List; and MotherCare, with operational studies, an IEC strategy for services and communities and the Training Curriculum in Maternal-Neonatal Health.

DFID and GTZ work in specific geographical areas on the development of the family and communal health model, and the management model.

The World Bank supports the SBS with its Health Extension project (EXTENSA), the development of Mobile Health Brigades (BRISAS) and the Basic Indigenous Insurance.

The PHO/WHO provides technical assistance for implementation of the Perinatal Development Program (DESAPER), with incorporation of the CLAP Computer System and the Childbirth Chart for use of the service and the Neonatal AIEPI. Together with UNFPA, it promotes Safe Motherhood strategies.

UNICEF supported implementation of the SBS, strengthening of the PAI and SNIS, and punctual activities in nutrition, micronutrients and breastfeeding.

NGOs

NGOs implemented isolated activities in neonatal care, fundamentally within the framework of Sexual and Reproductive Health and Breastfeeding programs. However, they did so with innovating experiences and emphasizing communal mobilization. This means they provided potential contributions for neonate policies and programs and for the development of health care models for newborns in the family and community.

Although the progress made is isolated and little systematized, these activities contribute to the strengthening of capacities in neonatal health at the national level.

PROCOSI is a network of 24 NGOs at the national level, which mainly works with integrated health projects, projects on sexual and reproductive health, nutrition and

breastfeeding; and which has developed a national IEC/O strategy in SRH and breastfeeding. Other NGOs have worked on methodologies for community mobilization and networks, e.g. Save the Children, APROSAR and Plan International; information systems, e.g. BABIES of CARE, Communal Epidemiology for Control of Maternal Deaths of CIES-Sexual and Reproductive Health; and the Communal Census of the Council for Andean Rural Health (CSRA); and the promotion of immediate and exclusive breastfeeding of Cotalma University of Georgetown and Linkages.

Likewise, some institutions have made progress in the analysis of intercultural elements in service provision in an integrated health care model: Bolivian Society of Traditional Medicine (SOBOMETRA), Tahipamu, TARI, Institute in the Aymará Language and Culture (ILCA) and the Willac Kuna Center.

Supply and Demand

The health system in Bolivia consists of the following subsectors: the public sector, social security, and profit-seeking and non-profit private services. The latter includes NGOs, the Catholic Church and traditional medicine. The public system has most health care institutions (75%), followed by Social Security (8%), NGOs (10%), the Church (4%) and the private sector (3%).

Installed capacity

The public services network (installed infrastructure and human resources) is insufficient to attend neonates. However, no precise information is available on this problem, as there is no updated inventory on the installed capacity and the capacity for problem solving of the network for neonatal health.

Information systems

There are two fundamental sources of information on health: the National Survey on Demography and Health (ENDSA), which is carried out at the national level every 4 to 5 years, and the National Health Information System (SNIS), which supplies information coming from entities in the health care network. The information of both sources shows gaps, especially as regards the disaggregating of neonatal mortality and the causes thereof.

Norms

There is a “Pocket Manual for the Use of Medication of the Basic Health Insurance” and a “Manual on Techniques and Procedures for Maternal and Perinatal Health Care”. These norms include partial aspects on neonate health care and, in many cases, they are not known at the national level. Clinical protocols for neonate care are not adapted to existing conditions in health services. Likewise, there are no flow charts and algorithms on perinatal care for the services network.

As regards training of staff, there is no integrated academic and methodological proposal that specifically focuses on neonate health care. Likewise, the curriculum to train staff does not contemplate national norms, which causes staff not to have the required knowledge on the treatment of neonatal complications.

Demand

According to the Population and Housing Census of 1992, access to public and private health care services in urban areas amounted to 78% and in the rural area to 52%. 25% of the population recurs to traditional medicine to treat health problems. 20% of the urban population and 23% of the rural population practice self-medication or recur to relatives to solve their health problems.

Although the SBS has partly overcome the economic barrier for the population to recur to health care services, and has therefore improved coverage; on the demand side there are still geographical and cultural barriers that impede even larger coverage.

Future actions

In policies

The Strategic Health Plan (PES) does not identify neonates as a specific target population. The Maternal-Neonatal Health Plan is not known in different levels of the Health System and the Neonatal AIEPI Strategy still has to be disseminated. Likewise, departmental and municipal authorities have not incorporated neonatal mortality as a priority on their agenda. Finally, the majority of the population is not aware on the importance of neonatal health.

Within this framework, it is urgent to develop strategies at the local and national level to create a political environment that is favorable for the protection of neonatal health care, so as to enhance the willingness to intervene in specific areas that must be defined.

The incorporation of neonatal health on the public agenda is an objective that implies consensus building among different sectors. The purpose is to enhance a strategic alliance in favor of newborns at the national, departmental and municipal level, which works with both the public and private sector and the international donor community. This initiative can be an effective process to integrate actions in neonatal health care that are presently being developed in an isolated manner.

In Programs and Projects

Another challenge in the short and medium term is related to the articulation of neonate health care strategies with other health care strategies that are acknowledged as effective interventions to improve health indices in Bolivia, such as the Safe Motherhood Strategy.

Minimum standards must be defined on equipment, input, and staff required for the care of neonates according to levels of complexity of the institution and according to the attended population.

The neonatal AIEPI must be complemented with the communal component and it will be necessary to coordinate training and implementation of the neonatal AIEPI with the MSPS.

A short term challenge is to ensure that NGOs that work in health participate in neonate health care strategies. Networks such as PROCOSI are useful for the systematization of alternative communal intervention models.

The idea is to support initiatives to improve neonate care practices in the community and family, the recognizing of danger signals, the adequate search for help, the problem solving capacity of health centers especially as regards obstetric and neonatal complications, and the strengthening of social networks for neonatal health care.

These actions must be based on the work experience with local leaders to strengthen social networks and the development of communal plans for the transportation of neonates.

In training

In order to ensure efficient application of these norms, it is necessary to develop a proposal on specific training courses for each level of attendance. This way, norms will in turn help to develop skills and competences of operational health staff.

Training experiences developed by state and private organizations result in a series of lessons that must be used to orient the content and methodological approach of this training proposal. In order to achieve this objective, representatives of the Ministry of Health, professionals and staff of health institutions must be invited to identify – together with representatives of the community – the necessary changes and updates in norms on health care, as well as to design the training program.

In information, education, communication and orientation

There is no national IEC/O strategy based on formative and evaluative investigations, which includes messages, target population, recommended means, mechanisms for dissemination, the objective of which is to promote successfully tested interventions in newborn care. This should be done in strategic alliance with other programs and institutions.

In information

In the National Health Information System (SNIS), which collects routine information, neonatal health is included in the group of children under 1 year old; and in

epidemiological control activities, only early neonatal deaths in hospitals are registered. This information could be easily included in the forms. On the other hand, the National System for Epidemiological Control of Maternal Mortality does not contemplate neonate deaths.

During the year 2003, a new ENDSA survey will be carried out, which is an opportunity to disaggregate the information on neonatal mortality in more specific periods, such as early mortality and first day mortality, as well as to study the possibility to incorporate instruments to obtain information on morbidity of neonates in the community.

In research

In the search to lower neonatal mortality rates, the revision of the state of neonates identified some potential areas for research in the field of Epidemiology: the gaps in the knowledge on actual rates of perinatal mortality and morbidity, the relationship between low weight at birth and neonatal death, the microbiological distribution in neonatal infections, the relationship between neonatal death and endemic infectious diseases in the country such as tuberculosis, malaria, chagas, yellow fever, congenital malformations.

In order to investigate the biological and social causes of deaths at the community level, a verbal autopsy method has been developed. In Bolivia, this instrument has been applied for under fives in the city of El Alto. The instrument should be adapted for specific problems of neonates, as a contribution to control systems and epidemiological studies on neonatal mortality.

The behaviors developed at family and community level as regards care practices for ill newborns still need to be identified. A specific ethnographic investigation is proposed to gain more knowledge on these practices.

On the other hand, operational research is suggested to measure the effect of some specific interventions, such as the cultural adequacy of health care services and a protocol for routine post-childbirth home visits, aimed at contributing to the development of norms and policies that have proven to be cost-effective and sustainable at the national level.

The need to know the reality of the country in this area is beyond discussion. This knowledge will guide our actions in favor of neonatal health with the precision required to make progress with more effectiveness and efficiency. The potential presently available in the mosaic of activities in execution under policies, programs and projects in the public and private sector is a good starting point to contribute to the solving of neonate issues in Bolivia. Most interventions required to generate the change are accessible for the country.

Chapter II: Epidemiology

The chapter on Epidemiology gives an overview of the existing information in Bolivia on mortality and morbidity of newborns, based on population surveys and data obtained at hospital level. Likewise, this chapter contains an analysis of trends between neonatal, infant and child mortality in the last years, emphasizing neonatal morbi-mortality taking account of existing differences between urban and rural areas and between different departments.

Reference is also made to demographic and socio-economic characteristics related to neonatal mortality, based on the composition of the neonatal mortality rates and variables associated therewith. Trends in early neonatal mortality at hospital level are included for the period 1996 – 2000, as well as perinatal morbidity rates at hospital level according to characteristics of women, between the urban and rural area and between large regions. Trends in low weight at birth and stillborn indices are observed, as well as the frequency of breastfeeding and immediate breastfeeding per type of service and differences between the urban and rural area.

Because of the importance of the health of mothers and the relationship with newborns, this chapter also contains relevant information on maternal health.

Neonatal morbi-mortality

Information based on population surveys

Neonatal, infant and child mortality

Out of every thousand live births in Bolivia, 92 children die before they reach the age of 5: 67 in the first year of life. Of this number, 34 die even before they are 28 days old⁶, which represents over half of infant mortality⁷ and over one third of child mortality⁸ (Table 1). Two thirds of the deaths in the first 28 days occur in the first week⁹ and half of them dies on their first day of life (ENDSA, 1998). 65% of the cases are concentrated in the rural area.

Between 1985 and 1995, neonatal mortality diminished by 20%, infant mortality by 26% and child mortality by 29%. If a comparison is made between the urban and rural area, differences are even deeper (ENDSA, 1998). For example, during this period, child mortality decreased by 37% in the urban rural whereas neonatal mortality decreased only by 16%. On the contrary, in the rural area, there are no significant differences in the decrease in these three rates that fluctuate between 24% and 26%. The proportion of neonatal mortality with respect to infant mortality at the urban level increased from

41.7% to 50% in this period, whereas in the rural area, this percentage hardly suffered any variation (Table 3).

Table 3
Neonatal, infant and child mortality

Period	Neonatal	Infant	Child	% Neon/ Child	%Neon/ Infant
Total					
1993-98	34	67	92	37.0	50.7
1988-93	39	80	107	36.4	48.8
1983-88	43	91	130	33.1	47.3
% Decrease	20	26	29		
Urban Area					
1993-98	25	50	66	37.9	50.0
1988-93	24	56	78	30.8	42.9
1983-88	30	72	105	28.6	41.7
% Decrease	16	30	37		
Rural Area					
1993-98	46	90	125	36.8	51.1
1988-93	57	109	144	39.6	52.3
1983-88	62	118	167	37.1	52.5
% Decrease	25.8	23.7	25.1		

Source: Own elaboration based on the ENDSA 1998

Demographic and socio-economic characteristics related to neonatal mortality

The composition of the neonatal mortality rate is slightly higher for males, whereas for infant and child mortality rates are similar for both sexes (Table 4). The lack of prenatal control and attendance by trained staff during childbirth¹⁰, besides low weight at birth are some of the variables most closely associated with a high rate of neonatal mortality. The rate is three times higher in women without prenatal controls and/or women who gave birth without a qualified attendant being present. Other important variables are: spacing in between siblings under 2 years, mother older than 40, or the newborn is the fourth child or more.

As regards socioeconomic characteristics, neonatal mortality is high when schooling of the mother is basic or lower, the highest rates being found in mothers without schooling. The degree of marginality with respect to departmental capital cities is another important factor. In case of increasing marginality, neonatal mortality rates can increase up to three times. This explains higher rates in the rural area, especially in the Altiplano. Neonatal mortality rates are the highest in the highland departments of La Paz and Potosí.

In absolute numbers, over half of all neonatal deaths are concentrated in the departments of the central axis: La Paz, Cochabamba and Santa Cruz (6,056 of the total registered amount of 8,909) (see annex 1). According to preliminary data of the census 2001, these three departments represent 53% of the national population (CENSUS 2001, preliminary data).

Table 4
Neonatal, infant and child mortality, according to demographic and socio-economic characteristics

Period	Neonatal	Infant	Child
Sex of the child			
Male	35	67	92
Female	33	67	92
Age of the mother			
< 20	32	87	109
20 - 29	32	62	83
30 - 39	34	63	94
40 - 49	58	98	117
Birth order			
1	28	56	76
2 - 3	28	58	78
4 - 6	37	71	100
7+	53	100	136
Interval with birth of previous child			
< 2 years	53	113	151
2-3 years	32	62	84
4 years or +	22	38	54
Medical care mother			
No PNC/No childbirth*	62	118	160
Yes PNC/No childbirth	28	62	87
Yes PNC/Yes childbirth	20	38	47
Size at birth			
Small / Very Small	72	122	141
Average or Big	22	48	71
Level of schooling			
No schooling	51	88	132
Basic	43	87	120
Intermediate	25	73	93
Secondary educ. or more	19	29	33
Level of marginality of the municipality¹¹			
Capital Department	19	40	55
Low	27	62	77
Intermediate	51	93	130
High	57	110	146
El Alto	36	86	118
Total	34	67	92

Source: Own elaboration, based on the ENDSA 1998

* PNC = prenatal control, No childbirth = childbirth not attended by physician

Early newborn mortality (ENM) in Bolivia amounts to 19 / 1,000 live births and represents approximately 57% of total neonatal mortality (MSPS, 2000). ENM is most frequently found in the departments of La Paz, Chuquisaca, Cochabamba and Potosí, neonatal and early neonatal mortality rates being the highest in the latter department (graph 1).

Graph 1

Comparative rates of neonatal and early neonatal mortality, per department

[...]

Source: INE. Survey on Demography and Health (ENDSA), 1998

Morbidity in newborns

In the Baseline of MotherCare 1996, of the 26% of women who affirmed their children had health problems after birth, 14% correspond to the rural area and 12% to the urban area (Eguiluz et al, 1998). The principal health problems detected by this group of women were: cold (27%), bleareye (12%), and fever (7%). Colds are the principal cause of morbidity in the urban areas and conjunctivitis in the rural area, diarrhea being less important.

Information coming from health institutions

Early neonatal mortality in hospitals

Early neonatal mortality in hospitals tends to decrease in the last five years (SNIS, 1996 to 2000), especially in the rural area (Graph 2). According to health statistics of the year 1996, ENM amounted to 7.7 / 1,000 live births, and to 6.9 in the year 2000. In this last year, this number amounts to 8 / 1,000 live births in the urban area and 4.7 in the rural area. Among other factors, this gap might be explained by the fact that cases occurring in the rural area attended in urban centers specialized in neonatal care are not differentiated, as well as by the possible sub-registration of cases in the rural area.

The highest rates can be found in the departments of Pando, Oruro and Potosí. Especially in Potosí, rates are 3 to 4 times higher than the average national rate (see annex 3).

Graph 2

Evolution of early newborn mortality in hospitals, per 1,000 live births

[...]

Source: SNIS, Jan/June 1996 - 2000.

Causes of hospital morbi-mortality

A study on the causes of hospital mortality in under fives, which was carried out by the PHO/WHO in 2001 in Bolivia, collected information from 24 Second and Third Level health centers (PHO/WHO, 2001). The study found that 40% of all deaths corresponded to newborns, 80% being early neonatal deaths (before the baby is 7 days old) and the remaining 20% being neonates of 8 to 28 days old. Graph 3 shows the most important causes of neonatal mortality in hospitals.

Graph 3 Causes of newborn mortality in hospitals

[...]

Source: PHO/WHO. Document in pre-edition, 2001

The cause of a small percentage of newborn deaths are congenital malformations. Some of the most frequent malformations are: malformations of the auricular pavilion, cleft palate and lip, Bot foot and poly-malformations represent 67% of all malformations, the frequency of leporine lip with cleft palate being the highest in the country. It is worth mentioning that the index of this malformation in Bolivia is the highest of all American countries that participate in the ECLAMP Program (Rueda et al, 1983).

A study carried out in 1999 by the Unit for Neonatal Intensive Care (UCIN) of the Hospital San Juan de Dios in Tarija (Perales et al, 2000), shows the incidence of congenital Chagas at 0.7% (16 cases, 7 of which were symptomatic) in 2,116 samples taken in newborns. As regards tuberculosis or malaria, no studies are available on the relationship of newborn mortality with these diseases in endemic areas of Bolivia. No investigations area available either on the vertical transmission of HIV/AIDS.

Perinatal mortality¹²

Information based on population surveys

In studies based on population surveys, interviewed women tend to forget early neonatal deaths and even more so stillborns. This has a negative influence on the quality of the information. According to the Baseline of MotherCare 1996 (Eguiluz et al, 1998), the early newborn mortality rate amounted to 24.8 / 1,000 live births, the stillborn rate to 10.1 / 1,000 births and the perinatal mortality rate to 34.7 / 1,000 live births.

The stillborn rate increases, depending on variables such as the age and number of pregnancies of the mother. The impact of the urban-rural context and schooling of the mother is lower (table 5).

In this study, the early neonatal mortality turned out to be approximately 50% higher in the rural area as compared to the urban area, and almost 80% higher in mothers without

schooling as compared to mothers with schooling. The highest rates were registered in the group of mothers of 20 to 24 years old (58.3), childbirths at home (47.4) and women with 4 to 6 children (33.9).

Table 5: Perinatal mortality in the 3 years before the survey, according to characteristics of interviewed mothers

Births in referential period (n=2.384) (a)	Stillborns (n=24) Rate per 1,000 births	Early neonatal mortality (n=58) Rate per 1,000 live births	Perinatal mortality (n=82) Rate per 1,000 births
Place of residence of the mother			
Urban (n=1.512)	9.2	21.5	30.7
Rural (n=872)	11.3	31.4	42.5
Age of mother			
15-19 (n=154)	-	6.5	6.5
20-24 (n=634)	19.9	58.3	77.7
25-29 (n=554)	-	14.6	14.6
30-34 (n=441)	7.2	17.2	24.4
40-44 (n=126)	50.4	-	48
45-49 (n=50)	-	20	20
Ns/Nr (n=17)	-	b	b
Schooling of the mother			
No (n=445)	13.2	36.6	49.7
Some schooling (n=1.922)	9.3	20.6	29.9
Ns/Nr (n=17)	-	b	b
Marital status of the mother			
Married/Lives together (n=2.172)	10.5	24.4	34.8
Single (n=196)	10.2	15.5	25.5
Ns/Nr (n=17)	-	b	b
Place of childbirth (b)			
Health institution (n=934)	13.9	7.6	21.3
At home (n=961)	5.2	47.4	52.7
Ns/Nr (n=104)	-	-	-
Gravidity			
1-3 (n=1.327)	9.7	21.4	31.1
4-6 (n=747)	5.2	33.9	39.1
7 and + (n=288)	24.9	7.2	31.5
Ns/Nr (n=121)	-	-	-
Total Rate	10.1	24.8	34.7

- (a) The number of reported births (n) in every category includes multiple pregnancies, which were excluded when the rates presented in this table were calculated.
- (b) Information on the place of childbirth is available only on the most recent childbirth. Consequently, mortality rates according to the place of childbirth have been calculated using the most recent births. (Ns/Nr: Does not know/Does not respond)

Source: MotherCare, 1998

Information coming from health institutions

Perinatal hospital mortality has decreased from 31 / 1,000 live births in 1996 to 24.7 / 1,000 live births in 2000 (graph 4) (SNIS, 1996 to 2000), the highest decrease having been registered in the department of Oruro. This decrease has been the highest and most regular in the rural area (from 35 to 22) as compared to the urban area (from 30 to 26). In this period, approximately three out of every four perinatal deaths were represented by stillborns (see annex 3).

In year 2000, the perinatal hospital mortality rate amounted to 24 / 1,000 live births, the difference between the rural and urban area being minimal. Out of every 4 perinatal deaths, three were stillborns and one early neonatal death (SNIS, 2000). An analysis per geographic region shows that in the Altiplano two out of every three perinatal deaths are stillborns; in the valleys three out of every four and in the Lowlands almost 4 out of every 5.

Graph 4

Comparative rates of hospital perinatal mortality for the first semester of five periods

[...]

Source: SNIS, Jan/June 1996 - 2000.

Low Weight at Birth (LWB)

Information based on population surveys

According to the consulted sources, there are considerable variations in weight at birth, as the percentage of women who do not report or do not know the weight at birth of their children varies in every study. In the ENDSA 98, 62% of the interviewed mothers said they knew the weight at birth of their children, i.e. 10% more than in the ENDSA 94. In the Baseline 1996 carried out by MotherCare (Eguiluz et al, 1998), 59% of the interviewed women supplied information on the weight at birth. In this group, the prevalence of LWB was 9%.

A comparison of results of the ENDSA 94 and 98 shows that the low weight at birth increased from 6% to 7.3%, respectively, in the total group of interviewed women who knew the weight at birth. ENDSA 98 data show that the percentage of low weight at birth is higher in the urban area as compared to the rural area. This information could be influenced by the higher percentage of mothers in the rural area who do not know the weight at birth of the neonate.

In this study, the demographic and socio-cultural factors that influenced the LWB were the age of mothers (younger than 20), schooling of mothers (secondary school or more) and the birth order (first child). LWB is prevailing in Valleys (see annex 4).

Information coming from health institutions

Low weight at birth and stillborns

According to the SNIS report 2000, the percentage of LWB is 75% higher in the urban area (7%) than in the rural area (4.7%). Together, the percentage of LWB in institutions that report to the SNIS is 5.8% (see annex 5). These results are similar to results in the ENDSA 98, which also shows a LWB that is higher in the urban area as compared to the rural area. One possible explanation for this situation is that childbirths with complications or gestation over 37 weeks are referred to hospitals in the urban area. It is important to follow up this information to show consistency of the data.

The highest percentage of LWB in health institutions is found in the urban area of the Altiplano (8%) and the lowest in the rural area of the Valleys (3.4%). Studies carried out by the Bolivian Institute on Altitude Biology (IBBA) show a relationship between residence in highlands (and therefore, areas with low oxygen pressure) and LWB (Niermeyer and Moore, document in pre-edition, 2001).

Graph 5

Percentages of newborns in health services with LWB, according to geographical area

[...]

Source: SNIS, 2000

In a study carried out in selected hospitals in Sucre (Ponce et al, 1995), 55 out of a total number of 880 neonates had low weight at birth (6.25%). 78% of newborns with LWB were premature births and the remaining 22% showed an intra-uterine stunted growth pattern (IUSG). 55.5% of LWB was found in firstborns. 93.3% of these babies were born from mothers with a medium or bad nutritional state, who belong to the medium and low socio-economic level.

The percentage of neonates with low weight at birth who died during childbirth is 14.3%. There is hardly any difference between the urban area (14%) and the rural area (15%). The highest percentage is found in the rural area of La Paz (27.4%), although the high

percentage in the urban area of Beni (24.7%) is also remarkable. An analysis of the evolution of the percentage of stillborns with low weight during the first semesters of the year 1996 to 2001, a decrease can be observed from 18.8% to 14.5% in the first 5 years, with a sudden increase to 23.6% in the course of one year. As this increase is very sudden, this situation should be investigated more thoroughly (see annex 6).

Breastfeeding

Although breastfeeding is common practice in Bolivia, it does not automatically ensure that immediate and exclusive breastfeeding percentages are adequate. According to the ENDSA 98,97% of newborns were breastfed at some moment, only 38% was breastfed immediately during the first hour, 68.5% was breastfed exclusively during the first month and 6% until they were 6 months old.

Immediate breastfeeding is more frequent when childbirth is attended by health staff (43%) as compared to deliveries attended by communal staff, relatives, friends or non-attended childbirths (31%). It is remarkable that 57% of health staff does not guarantee immediate breastfeeding. This practice is more frequently in the urban area (41%) than in the rural area (35%), and increases according to the level of schooling. It is more common in departmental capitals (42%) as compared to municipalities with high levels of marginality (30%). These differences seem to be related to the lower or higher coverage of childbirths in hospitals (see annex 7).

Maternal health

Literature on health mentions the close link between the state of health of the mother and the newborn. The probability of deaths of newborns whose mothers die is higher than that of newborns whose mothers live. On the other hand, many neonatal deaths occur during childbirth or in the post-childbirth period. Hence, it is necessary to analyze aspects related to maternal health that are related to the topic we are here analyzing.

Information based on population surveys

Maternal mortality

Calculations for the year 1997 show that yearly, approximately 1,000 mothers die from complications associated with their pregnancy (52%), childbirth (23%) or lying-in (15.5%) (ENDSA, 1994). 81% of these deaths occur outside health centers. Although the maternal mortality rate decreased from 416 to 390 / 100,000 live births between 1989 and 1994 (ENDSA, 1994), this rate is still the highest in the American continent after Haiti.

Graph 6
Maternal mortality ratio,
according to geographical area

[...]

Source: ENDSA, 1994

Graph 7
Causes of maternal mortality

[...]

Source: MSPS, Epidemiological control of maternal mortality, 1996

Regional differences are significant, the highest rate being found in the Altiplano, especially in the rural area: the department of Oruro shows the highest with 502 / 100,000 live births, followed by Potosí with 496 and finally La Paz with 429. Santa Cruz – in the Lowlands – and Tarija – in the Valleys – show lower rates: 187 and 230 / 100,000 live births, respectively.

According to information supplied by the System for Epidemiological Control of Maternal Mortality (SVEMM, 1996), the five principal causes of maternal mortality are hemorrhage, eclampsia, abortion, obstructed childbirth and infections.

Information from health institutions

Maternal mortality

Out of every one hundred thousand childbirths attended, approximately 62 women die because of maternal causes (SNIS, 2000). This proportion is higher in the Altiplano (77) as compared to the Lowlands (64) and the valleys (45); this number is especially high in the department of La Paz (Altiplano) with 240 / 100,000 childbirths. Graph 8 shows the decreasing trend between 1996 a (117) and 2001 (46), which is more significant in rural areas as compared to urban areas.

Graph 8
Evolution of the hospital maternal mortality rate

[...]

Source: SNIS, Jan/June 1996 - 2000

Maternal complications

Except for the premature breaking of membranes, the principal causes of hospital maternal mortality are similar to the ones that cause mortality; i.e., hypertension, cephalo-pelvic disproportion, infection and hemorrhage (De La Galvez, 1996).

Anemia during pregnancy

In the ENDSA 98, the percentage of severe anemia in women of fertile age amounted to 1% and to 3.1% in pregnant women. The total prevalence (severe, moderate and light anemia) amounted to 27.1% in women of fertile age and 27.9% in pregnant women.

On the other hand, the use of ferrous sulfate in pregnant women is low. Only 1.8% of pregnant women who recur to health care services receive the dose recommended by the Ministry, and 80% of those women actually consume the complete dose (MotherCare, 2000).

Syphilis during pregnancy

A study carried out by MotherCare (Blanco, 1997) shows that seroprevalence for syphilis in pregnant women amounted to 4.3%. Estimates are that in seropositive women, abortions amount to 20%, stillborn rates to 26%, congenital syphilis to 15% and premature births to 12.5%.

Final comments

Neonatal mortality in Bolivia is high, 34 / 1,000 live births, which represents 40% of infant mortality. The highest rates of neonatal mortality can be found in the departments of La Paz, Potosí and Cochabamba, especially in the rural area.

Over half of neonate deaths occur during the first week of life. At hospital level, findings are that early newborn mortality can amount to up to 80% of neonatal mortality, and in communities to 57%. This gap could be explained by the fact that mothers with complicated pregnancies or childbirths recur more to hospitals, through the Basic Health Insurance, and on the other hand this could be related to the considerable sub-registration of neonatal mortality at community level.

Studies on causes, which were mainly carried out at hospital level, show that the principal causes of death are infectious diseases, problems related to perinatal asphyxiation, low weight at birth and premature births. On the contrary, neonatal morbi-mortality is rather associated with asphyxiation and hypothermia.

Mortality rates are higher in newborns whose mothers had not received prenatal care or were not attended by qualified persons in childbirth, especially in the rural area, which implies these interventions should be focused, both at the level of health services and at community level.

In Bolivia, different sources of information are available on infant morbidity and mortality. However, there are differences between the various sources as regards newborns, especially related to morbidity. On the other hand, in many cases the probable sub-registration and quality of the information give rise to incoherent information, which should be analyzed in the future. At the same time, it is necessary to strengthen the System for Epidemiological Control of Maternal Mortality, incorporating the neonatal

component, at the institutional and communal levels. This could help families, the community and service providers to find solutions and improve their decision-making.

Chapter III:

Socio-cultural aspects

This chapter describes traditional practices that are still being applied in urban/popular and mainly rural sectors of the population, especially the Quechua, Aymará population and ethnical groups of the Bolivian Eastern Lowlands. These practices are related to the care of newborns, and of mothers during pregnancy, childbirth and post-childbirth. Socio-economic and cultural factors that enhance viability or impede the application of practices that are favorable for newborn care are also analyzed.

Socio-cultural practices

Care during pregnancy

General perceptions

In the Andean and Lowland perception, pregnancy is a “natural event” (Rance, 1995). In this context, couples (and the community) wish immediate pregnancy once they have started their life together¹³. Human fecundity is related to fecundity of the earth. therefore, women are expected to be fertile after they marry (Arnold, 1996).

Traditional practices in the gestation process in urban-popular and rural areas of the country center on mother care as the first priority, as she is considered the responsible for reproduction of the family unit. The neonate is less important, especially if the family already has children.

Care practices during pregnancy

Care practices during pregnancy focus on the mother, rather than on the fetus, especially in multiparous women. The idea is to avoid risks and problems during this phase, e.g. abortion or hemorrhage.

The mother becomes the center of attention of the family because the community respects her status and role as the “person” responsible for reproduction of the family unit. On the contrary, the status of the fetus as a “person” is not yet recognized¹⁴. Indirectly, the fetus is cared for through care for the mother: if the mother is healthy, the fetus will be healthy.

The most common physical care practices for mothers during pregnancy are related to her not carrying heavy objects or doing many efforts, her not being inactive, her not having sexual intercourse (Arnold and Yapita, 1996), her not walking long distances in the last weeks before childbirth, her not being exposed to the sun and/or hot places (CIAES, MotherCare, 1991), and her not uncovering her belly.

The diet of pregnant women should be based on regional foodstuffs, i.e. broths prepared with quinoa, fruits, vegetables, potatoes, etc. If she feels like eating something in particular, her wishes must be satisfied, otherwise this could be fatal for the baby and give rise to an abortion (Izko et al, 1986).

Recognition, decision-making and complications in pregnancy

Fathers and mothers make sure the baby is in a cephalous position using the “Mateo” practice¹⁵ (Andes) or the “sobada” practice¹⁶ (Lowlands). They have no difficulties to recognize a hemorrhage as something “very dangerous” or an abortion (spontaneous or provoked). In the Andean world, an abortion or “bad childbirth” is considered more dangerous than childbirth itself (Sölle de Hilari, 1994).

Different studies mention that the swelling of hands and face (pre-eclampsia) is considered a “good” sign, which shows the mother is accumulating blood to “have strength in childbirth” (Arnold and Yapita, 1995; Seoane et al, 1996).

In the Andean world, the husband determines when the mother should recur to health care services. First, the husband will consult with the extended family (especially the mother and/or mother in law) and local specialists (midwives, traditional medicine men). Only then, they will recur to institutional health care systems, especially when the complication has worsened. In these cases, in general communities do not have any means of transportation to take the woman to the health center in case of obstetric complications (Seoane et al, 1996).

Care practices in childbirth

General perceptions

Childbirth is considered a moment of risk, especially for the mother, many practices and recommendations related to care practices in pregnancy and childbirth are related to the need for a “good birth of the placenta” so the “mother will be free” (Molina, 1986).

Arnold and Yapita (1995) emphasize that the Aymará childbirth takes place in the hottest room of the house, generally the kitchen or bedroom. The incense is placed on a sheepskin¹⁷, the woman is well covered with skirts and shawls and a shawl on her head¹⁸. The Andean and Lowland women prefer to give birth in a crouching position¹⁹. The persons attending childbirth speak in a low voice not to frighten the mother. The husband or midwife massage the women so as to ease the pain and tension. Bradby et al (1996) say that various studies have shown that the husbands/midwives are the ones that generally attend childbirths. For the Andean and Lowland world, the presence of unknown persons could cause the suspension of contractions and could be harmful for the mother and the newborn (Boender and Torrez, 2001).

The respect for intimacy and shyness is extremely important for the women. The persons who attend childbirth do not touch the intimate parts of the mother as is the case in the institutional health care system.

Care practices during afterbirth of the placenta

The time between the birth and afterbirth is considered very dangerous, because of the fear that the placenta will not leave the belly, giving rise to suffering and death of the mother.

The most usual practices to stimulate exit of the placenta are: pushing, blowing a bottle and/or hitting the mother's back with a big wooden spoon, as the traditional belief is that the placenta could be stuck to the back (CIAES, MotherCare, 1991).

Recognition of and attendance in case of complications during childbirth

In various Andean communities, three categories of difficult childbirths are mentioned: a "stuck", "turned around" or "wicked" baby (Arnold and Yapita, 1995). Murphy-Lawless (1996) mentions other problems in childbirth are related to cold, fear, bleeding, edemas and bad presentation.

Different midwives know how to recognize dystocia during labor, by touching the mother's belly. In these cases, they will apply the already mentioned massages, manteo or sobada techniques.

In the Andean worldview, it is difficult to recognize a hemorrhage as a risk during childbirth, as they believe that the more blood the mother expulses, the better. They believe this will make childbirth and afterbirth easier and "clean" the mother's body (Bradby and Murphy-Lawless, 1996).

Care practices for the mother after childbirth

Immediately after having given birth, the mother is fed for her to be strong and to avoid the accumulation of blood (Arnold and Yapita, 1995). They are very much afraid of a "sobrepardo" (relapse) of the mother or puerperal sepsis²⁰, which is considered a serious complication resulting from the mother "being cold" (Seoane et al, 1996). As is the case for childbirth, there are difficulties to recognize the difference between normal bleeding and a hemorrhage as a sign that there is a complication. Another complication is "weakness" of the mother (anemia), which is treated with rest and food "with meat". During the post-childbirth period, the importance of help from the husband/partner and the rest of the family is emphasized. They should take over the following tasks of the mother: cooking, cleaning, looking after other children, for at least one month (Bradby and Murphy-Lawless, 1996)

Care practices of newborns

General perceptions

In the Andean and Lowland world, during the first days after childbirth, the baby is not brought near the mother as they are not sure whether the baby will live or die. These days are a “trial period” to see whether the baby is strong enough. Given socio-economic circumstances of Andean communities, there is a kind of “survival of the fittest” mentality, which means the baby is tested to make sure he/she will not require a lot of attention afterwards (not too much clothes, not too much food, not too many diapers) (Arnold, 1999). This means death of a newborn is not necessarily considered a negative and sad event (CIAES, MotherCare, 1991).

One of the central preoccupations is related to “cleaning of the body” (initial washing), both on the inside and outside. This process takes one to three days, during which the baby is not fed with mother’s milk.

In the peri-urban area, women are more willing to go near the baby and breastfeed immediately, as they consider it is important to give the baby love and colostrum, as they believe this will help the baby not to fall ill. Other important practices are: bathing the baby, vaccinations, weight and size control in the health center, and especially, care for the nose.

Cutting the umbilical cord

The umbilical cord is tied up with wool or thread, not very near the body of the child “to ensure his intestines won’t fall out”. But this distance should not be too long either as this could give rise to the boy being womanly or the girl being manly; or the baby being sexually very active.

The umbilical cord is cut very carefully when it “stops beating”. A piece of ceramic, a broken piece of glass, a knife, scissors or a penknife are used, previously disinfected with alcohol.

Washing of the newborn baby

In the Andean area, the newborn baby is received on a piece of cloth called “aguayo”²¹, or sometimes on a piece of animal skin, normally sheepskin. It is common practice to wash the baby with rosewater, rosemary water or other herbs depending on the geographic region. As of the second day and afterwards, in some communities (Valleys and Lowlands), the baby is washed with cold water. In other colder regions (Altiplano), the baby is washed with a clean cloth, except for his head. In some communities, newborns are washed with urine or detergent to “disinfect” him or her and clean the impurities with which the baby is born. In other communities, the baby is rubbed with a rough cloth to remove the impurities. Finally, in some communities the baby is rubbed with cooking oil.

After washing, the baby is wrapped up. One habit consists in wrapping the baby in diapers and a thick belt in a nest of textile that covers him or her for the first three months of life, in order for the baby to become strong and resistant (Arnold and Yapita, 2000; Zelaya, 2000).

Initial feeding

Usually, breastfeeding is not immediate in the Andean and Lowland area (Bartos, 1992); women of the peri-urban area tend to start breastfeeding immediately. But in the Andean and lowland areas, women wait one to three days before they start feeding the neonate (in some cases even one week). Between the first 24 to 72 hours after birth, newborns are fed tepid water, or herbal tea (anis, chamomile), sweet wine, water with sugar, cow milk, salt, coffee or sometimes even some drops of urine for internal disinfection “as they still have their mother’s blood inside their bodies”. Some mothers do not breastfeed immediately because they believe that the colostrum or “white blood” has been stagnant, which could be harmful for the baby (Bradby, Murphy-Lawless, 1996; Arnold and Yapita, 1995). Another reason why they restrict immediate breastfeeding is to avoid the child to become a heavy eater in the future.

As from the moment the mother can feed the baby, she does so whenever the baby wants to eat, in other words, every time the baby wants to eat, without any restrictions in terms of time and quantity.

Care practices of newborns during birth

During childbirth, the husband, midwife or mother/mother in law “receives the baby in a cloth prepared for that purpose” and immediately “puts him or her aside, on the floor on a nylon or skin, next to the mother, with his feet pointing to the mother until the placenta is born” (Arnold and Yapita, 1995). No clothes are prepared for the baby, otherwise the baby could die (Defossez, et al, 1992).

The husband, mother/mother in law cleans the mouth and eyes, avoiding blood gets in the baby’s eyes or mouth as this could cause blindness or muteness. The mother waits for someone to “pick up” the baby. Defossez et al, (1992) mention that “the newborn must not be touched to avoid “t’isi” (discharge from nose).

There are no references on special care practices for newborns who do not spontaneously start to breathe when they are born. In some Andean communities, the fontanel is rubbed to the sides or alcohol is applied if it juts out, whereas as in the Bolivian Lowlands oil and cataplasms are applied.

Recognition of and care practices in case of complications in the neonate

In the Andean rural area, few women recur to health centers when their children are ill. They consult with the local midwife or medicine man, who tells them what medicinal herbs to use. If that does not work, they go to institutional health centers (Izko et al,

1986). In general, in Andean areas the baby is not exposed to sun during the first weeks of life.

In the peri-urban area, when the newborn is ill, generally the mother will first go to the pharmacy and only then to a doctor. Mothers buy the same medication they used for their older children (IEC-BASICS II, 2000). If the baby does not get better, they consult with the medicine man or midwife. If the child does not get better even then, they will go to the health center.

Socio-cultural factors in care practices for newborns: barriers and viability enhancing factors

Poverty, inequality and inequity are determining factor for survival of newborns, as these factors are related to low levels of schooling and therefore, insufficient information and sometimes inadequate information on health care practices for newborns.

On the other hand, the “machismo” mentality reinforces the idea that women must be mothers to have some kind of value. This behavior exposes women to risks of domestic violence and reduces their power to decide on their own body or fecundity.

Multiple factors beyond merely physical or biological aspects influence the causes of neonatal morbi-mortality. Some of these factors are: size of the family, which sometimes gives rise to abortion; intentional non-recognition of danger signs in the neonate; the conscious or subconscious incapacity to look for help in case of illness, and finally, infanticide. The causes of neonatal death are associated rather with the non-recognition of danger signs, the incapacity of the traditional system to solve some problems, the limited accessibility to health services and the lack of training of human resources.

It is known that some women who were not successful in aborting took other measures to reduce possibilities of survival of the unwished newborn: systematic neglect (for example, not adequately wrapping up the baby), inadequate feeding, medical neglect (for example, not looking for medical help in case the baby is ill) (Schuler et al, 1994). This means that wanted children have more possibilities to survive.

These facts are barriers to achieve satisfactory care for the mother and newborn. Moreover, the following factors have an impact: the high percentage of home childbirths, low levels of recognition of danger signs of maternal complications (hemorrhage, pre-eclampsia, eclampsia), late breastfeeding, and inadequate protection of the newborn.

On the other hand, there is a series of factors that enhance viability of a satisfactory care, such as the fact that many women prefer to give birth in health centers, support of the husband and relatives during childbirth and post-childbirth (especially in the rural area), knowledge of the month in which the baby will be born.

Final comments

The information on traditional practices in maternal health have been studied and documented in the country, especially with regard to aspects such as care practices during pregnancy and childbirth and others. Investigations have centered less on topics related to neonates.

During childbirth and immediate post-childbirth, the mother is the central focus of attention. This reflects the survival logic of rural communities. The logic is that the baby should first prove his strength and ability to survive, which implies higher risks for neonates.

Some of the most common practices that are not harmful for mothers and children are: massages, wrapping up the mother, privacy, presence of relatives and childbirth in crouching position. These practices should be adopted by health staff. However, it is necessary to analyze whether practices such as the manteo, sobada, the use of incense, herbal teas, etc. during childbirth are harmful for the mother and/or baby, or whether they could cause a uterine fracture or fetal suffering.

There are some references also on practices that prohibit mothers to leave their house during at least the first two weeks, which makes it difficult for them to immediately recur to health care centers. An analysis should be carried out to see whether home visits could contribute to the identification of health problems of the mother and newborn, especially in the first week.

As regards practices for newborns, it will be important to carry out future studies to analyze in what way information on general care practices of newborns can be reinforced, both at home and in health centers. Special reference should be made to the use of colostrum, preservation of the body temperature of newborns, and especially the recognition of danger signs. Likewise, it is important to carry out research on the behavior and practices of the family or midwife in cases of asphyxiation or respiratory complications when the baby is born, local infections (umbilicus, eyes) and unnecessary routine procedures with newborns in health care centers.

Qualitative studies on the nature of newborns, their needs and characteristics, care practices and the recognition of risks for their health could provide more information to design IEC/O strategies, to increase the value of satisfactory practices in communities and disseminate information on the communities' reality.

Chapter IV:

Programs and projects

This chapter analyzes the most relevant programs and projects institutions in the public and private sector develop directly or indirectly, for the benefit of newborns in Bolivia. This information gives an overview of what is being done in this area and who are the possible partners for future alliances.

State programs

The Ministry of Health and Social Prevision (MSPS) – through the National Unit for People Care (UNAP) – develops two national programs that involve neonatal health care: the “National Sexual and Reproductive Health Program” (PNSSR) and the “Program for Health Care for Children 5, Schoolchildren and Adolescents”. These two programs are implemented through the National Plan for Maternal-Neonatal Health.

The goal of the National Plan for Maternal-Neonatal Health is to reduce maternal mortality by 35% and neonatal mortality by 15% by the year 2002, by means of implementation of a strategy that combines actions focusing on mothers and children in a basic mother-neonate package. The Plan is executed with contributions from the Treasury, USAID, UNFPA, PHO/WHO, GTZ and the World Bank.

Within this framework, the perinatal information system CLAP was promoted at the national level, with registration input such as the Perinatal Clinical History and the Childbirth Charts; human resources were trained in essential obstetric functions in the 17 districts prioritized by the MSPS²³.

The MSPS – with support from the PHO/WHO, BASICS and the Bolivian Society of Pediatricians – has recently developed a section on neonate care called Neonatal AIEPI within the Program for Health Care for Children under 5, Schoolchildren and Adolescents, within the AIEPI strategy. This instrument – to be applied basically at the first level of health care - contains the methodology to evaluate and identify the neonatal risk in the prenatal and immediate postnatal phase and during the first seven days of life. It contemplates the systematization for the evaluation, classification, treatment, referral, follow-up of both ill and healthy neonates, as well as family counseling for home care and the promotion of immediate and exclusive breastfeeding. This strategy considers criteria and norms for the referral of neonates to higher levels of health care (Mazzi and Mansilla, document in pre-edition, 2001). This strategy will be implemented in initial districts in the year 2002, with subsequent adjustments and dissemination at the national level.

It is necessary to complete the Neonatal Services AIEPI with the Community AIEPI for Newborns and to develop the contents for second and third level health care, aimed at integration of neonate care in different levels of the services network.

Basic Health Insurance

The SBS has improved coverage of the most important health care services for newborns, but is not yet supplying the input required for health care, especially for premature babies. Likewise, it provides health services for neonatal infections although the contribution per number of days of internment is still insufficient. The SBS contemplates payment of gasoline for taking the patient to hospital, which will become effective with the implementation of the Neonatal AIEPI, which contemplates norms for the taking to hospital of neonates.

The Quality Observatory is an operational-technical team set up by the Health Reform Unit to supervise and regulate the quality of health care services provided in public entities, aimed at accreditation and certification based on customer satisfaction. As part of its functions, a national technical team was set up for continuous hospital upgrading, which will organize 4 work teams in the 9 departments of Bolivia as from the year 2002. This unit is carrying out diagnostics to identify needs and develop intervention plans, including the updating of staff in obstetric and neonatal emergencies. Up to now, the team intervened in 11 maternal-child hospitals in the country and in 2002, it will equip second and third level services with basic input and instruments for neonatal care with the so called "Blue Box".

In order to support the geographical focalization of the actions under both programs, the MSPS encouraged realization of the National Mapping of Maternal and Neonatal Health, with support from the SMN/JHPIEGO, GTZ, BASICS and USAID. This instrument is meant to identify geographical areas with bigger problems related to maternal and neonatal mortality, and less installed capacity for obstetric and neonatal problem solving, using indices prepared to that effect. Therefore, checklists have been prepared on needs to be able to comply with the essential obstetric and neonatal care services in prioritized districts, as well as studies to identify potential local entities to provide the social functions related to maternal and neonatal health. In spite of efforts made in the diagnostic and intervention phases to improve the problem-solving capacity in case of maternal and neonatal complications in the prioritized districts, there are still information gaps that need to be updated.

Presently, the MSPS – with technical assistance from the SMN/JHPIEGO – is developing a proposal on Service Networks and Social Networks for the further development of maternal and neonatal health care. The first proposal wishes to articulate resources and capacities of health care units in a certain area, aimed at improving the problem-solving capacity of these instances as regards maternal-neonatal issues; the second proposal is related to a series of resources and capacities of public and private organizations in a certain geographic area, aimed at generating communal mobilization processes in favor of maternal.-neonatal health. Although the neonatal component has been included

explicitly in the proposal, it mainly centers on essential obstetric functions, with gaps as regards neonate care. In order to correct these gaps, the Program for Health Care for Under Fives has developed activities for implementation of the neonatal AIEPI strategy.

Although it has existed since 1996, the Bolivian Health Norm (NBS) MSPS-03-01 – which consists of a system for epidemiological control of maternal mortality – application of the information gathering instruments for the system has been discontinuous in various departments. Only in November 2001, the UNAP – in collaboration with the SMN/JHPIEGO and support of the Making Pregnancy Safer Initiative of the PHO/WHO – has reedited this normative document for application in all health care services. It is important to underline that this system does not contemplate newborns.

Municipalities

At the local level, it is important to stress the contribution of municipalities. Of the 100% of the tax resources the municipal government receives, 85% must be used to cover investment expenses. Of this 85%, the municipal government must use at least 30% for the execution of human development projects (health, education, basic sanitation, etc.) (MSPS, 2000). On the other hand, Compensatory Health Funds were created with municipal resources, equivalent to 6.4% of the 85% of municipal resources so as to cover SBS services.

As part of SBS services, some municipalities are contributing funds for the transportation to hospital of patients with maternal and neonatal complications. In some cases, they have even purchased ambulances or incubators. In order to ensure sustainability of these actions, it is critical to involve municipal agents in specific actions for newborns.

International Donors that provide Technical and Financial Cooperation

The international entities that support programs for health care for under fives and maternal health in Bolivia are: USAID, DFID, GTZ, ACDI and JICA, as regards bilateral agencies; PHO/WHO, UNFPA, IDB and the World Bank, as regards multilateral organizations. It is remarkable that other donors, especially European ones, are not interested in neonate health care.

The agencies develop the following activities in maternal and neonatal health care:

Although it does not have specific projects in this field, the World Bank – through credits for the Health Reform – contributed to the intensification of SBS actions. At present, through the Health Extension project (EXTENSA) it develops actions related to expanded coverage, mainly in type IV and V municipalities (the poorest in Bolivia, according to the poverty map).

The PHO/WHO, which is the agency that has put most emphasis on the neonatal area, has provided technical assistance for implementation of the Perinatal Development

Program (DESAPER), which included the CLAP Information System and the Childbirth Chart for use of the services and which enhances Safe Motherhood strategies and the Neonatal AIEPI.

The Health Program of UNICEF supported the “Hospitals, Friends of Children” initiative and in recent years, it has fundamentally concentrated on development and implementation of the SBS, strengthening of the PAI and SNIS, and punctual activities in nutrition, micronutrients and breastfeeding. Its fundamental area of intervention is the departments of Potosí and Chuquisaca and the Amazon region.

UNFPA has supported strengthening of the Sexual and Reproductive Health Program and the Safe Motherhood Initiative. One of its activities specifically related to neonatal health care is funding for the printing of the Perinatal Clinical History and the Childbirth Chart.

The project Abrir (Opening) funded by the British cooperation (DFID) will support the Health Reform until the year 2004. This project will be implemented in a pilot district in Challapata, Oruro, where the family and community health model is being implemented, and where health policies are validated with interventions such as the Mobile Health Brigades (BRISAS) and the Basic Indigenous Insurance.

GTZ works in 5 departments of the country, supporting the Sexual and Reproductive Health Program of the MSPS in the implementation and strengthening of public and decentralized services, by means of the improvement of the problem-solving capacity in these services and management thereof.

Activities of USAID related to neonatal health have been implemented under the Integrated Health Project (PROSIN), BASICS, SMN/JHPIEGO and MotherCare/JSI. The first entity basically financed activities of the Neonatal AIEPI, developed by the UNAP, PHO/WHO and BASICS. It also supplied input for health services: cephalous headset, positive ventilation bags and incubators, in support of second and third level centers at the national level.

BASICS contributed to the development of methodologies, such as the Verbal Autopsy method in cases of mortality of children under 1, including information on newborns, as well as the “Haceres, Pensares and Sentires” (do, think, feel) methodology for qualitative research aimed at communication and a change of behavior.

MotherCare/JSI Bolivia worked in 18 municipalities of La Paz and Cochabamba with the MSPS and the university faculties of medicine in those cities. It contributed with different studies on health care for obstetric and neonatal complications, costs and protocols for maternal and neonatal health care; it developed an IEC strategy for services and community, which includes an access plan focused on the treatment of maternal and newborn complications for the Andean area and Valleys; and it elaborated the “Training Curriculum for the Treatment of Obstetric and Neonatal Complications” and the “Manual on Obstetric and Neonatal Techniques and Procedures”.

NGOs

Very few non-governmental organizations have specific neonate programs or projects. In general, they have developed isolated activities in this area, fundamentally within the framework of sexual and reproductive health and breastfeeding programs. Their innovating methodologies stressing community mobilization could contribute to newborn policies and programs, as well as to the development of neonate health care models in families and communities, with articulation to services.

The following local, regional or national experiences are available in this area:

PROCOSI is a network of 24 NGOs that work in health with an installed infrastructure in the urban and rural area. At present, among others, they are implementing 22 integrated health projects, 37 sexual and reproductive health projects, and 27 projects on nutrition and breastfeeding. The neonate component is limited to some isolated activities, however there are possibilities to incorporate this component in the projects that are being implemented. This network has a national IEC/O strategy in SRH.

CARE has carried out some staff training activities on neonatal health. Presently, it is developing a neonatal health information system that can be used on different levels of health care and that enables focusing on the key intervention areas. This methodology, called “Babies”, is used to make an analysis on newborn mortality, the rapid identification of causes and decision-making.

Save the Children developed three innovating methodologies in IEC/O and communal mobilization in health:

- **WARMI**: a systematic application of a self-diagnostic and joint planning process with groups on reproductive health.
- The **Integrated Communal Epidemiological System (SECI)**, which collects communal data on maternal and child health, and systematizes this information in drawings for analyses at community level.
- **Home workshops** and the **positive deviance** approach based on behavioral changes based on the identification of positive deviant nutritional practices in the community.

These methodologies can be applied in neonate health topics, with positive results.

Plan International is developing the “Community Development Objective”. It also implements activities related to epidemiological control of child mortality, taking account of newborns. In home visits for the identification, follow-up and referral of cases, orientation is supplied on the following aspects: control, communal organization for vaccination, size and weight control.

The Consejo de Salud Rural Andino (CSRA – Council for Andean Rural Health) developed a system for primary health care based on the communal census, in which

every family is registered and numbered, registering births, deaths and migrations. It also contributes to the municipal management model in the field of health and the cultural adaptation of services.

APSAR promotes integrated health care actions. Its work dynamics center on construction of a services network under the concept of Local Health Systems in the regions of Sipe Sipe and Vinto in Cochabamba.

CEPAC articulates the municipality, community and integrated health services in the department of Santa Cruz, in its search to ensure quality services, especially in the field of maternal health and clinical AIEPI. It trains and organizes communal agents (Popular Health Workers) for application of the Communal AIEPI and educational material.

APROSAR is an association of 133 promoters and 97 communal leaders of Oruro that trains communal maternal and neonatal health care workers. Interventions are implemented through a communal network with punctual activities, such as the development of behavioral changes with respect to the preservation of the body temperature of newborns, the promotion of breastfeeding and the improvement of practices for umbilical cord cutting.

COTALMA, the University of Georgetown and Linkages have been working on the promotion of immediate and exclusive breastfeeding and the Method for Breastfeeding and Amenorrhea (MELA). Linkages/PROCOSI developed an IEC/O strategy for breastfeeding.

The Centro Willac Kuna contributes with an innovating approach for cultural adaptation and improvement of the quality of services by means of its diploma course in interculturality. Within this framework, it supports the elaboration of papers on neonatal health.

CIES, Sexual and Reproductive Health has implemented an instrument for communal epidemiological surveillance to control maternal deaths, linking community participation to its health care service. During that analysis, it tries to identify the most pertinent solutions for the identified causes of mortality.

PROSALUD, has published the “La Cadena de Calor” (The Heat Chain), a guide for the prevention of hypothermia in newborns and the preservation of their body temperature..

Intercultural elements in service delivery for the development of an integrated health care model are important topics for neonatal health. The Bolivian Society of Traditional Medicine (SOBOMETRA) is one of the pioneers in this sense. Thanks to its efforts, traditional medicine and health care services have come closer. The following institutions are enhancing the integration of western and traditional medicine: Tahipamu with its contributions for improvement of the health care quality from the perspective of users; the TARI team with development of a methodological proposal through manuals and training workshops with an intercultural approach in health care; ILCA with

anthropological and linguistic studies related to maternal and neonatal health; the Centro Willac Kuna, and others. Although progress made is isolated and little systematized, these efforts contribute to strengthen capacities in newborn health care.

Interinstitutional coordination

In the country, there are different experiences of interinstitutional coordination, but few in neonatal health. Nevertheless, these are potential spaces for intervention in this area.

In 1996, the National Committee for Safe Motherhood was set up, with the purpose of contributing to the accelerated decrease of maternal and perinatal morbi-mortality in Bolivia, and reinforcing quality control of services from a multicultural, pluri-ethnic and gender perspective. This committee – with representatives of the State, NGOs, women's and grassroots organizations and the international donor community – acts within the framework of the Regional Strategy of Latin America and the Caribbean for the Reduction of Maternal Mortality in the Next Decennium 2001-2010. Although at present, the committee emphasizes maternal mortality, specific actions are being enhanced related to neonates.

The Sexual and Reproductive Health Forum – a space for coordination of private and state organizations – promotes sexual and reproductive health of the Bolivian population, thereto offering substantive opportunities to promote interventions related to newborns.

Recently, from the Office of the First Lady, the Action Strategy for the Creation and Strengthening of Work Teams is being enhanced, aimed at the articulation of intersectoral and interinstitutional efforts to develop programs and projects with considerable social impact for the benefit of the country. In this sense, the work teams on Safe Motherhood and Integrated Development of Children under 6 are important spaces for discussion of the topic concerned.

Within the framework of the Network of Latin America and the Caribbean for the Humanization of Childbirth and Birth, REBOHUPAN is created in Bolivia, aimed at ensuring respect for the human rights of women as regards their right to decide on their body and maternity. Its central focus is for women to be the protagonists of the process of pregnancy and childbirth and consequently, for women to have access to respectful care that is sensitive to their physical, affective and cultural needs. The Network organized workshops for the exchange of experiences in humanized childbirths between the public and NGO sector.

Scientific institutions

The Bolivian Society of Pediatricians executed a project on Neonatal Reanimation (ARENA), in coordination with the MSPS and UNICEF. Two training courses were organized for facilitators. Based on this project, which lacked economic sustainability, neonatal health aspects, especially related to reanimation and sepsis, were incorporated in

the official agenda of congresses, national events and international courses of the last 4 years.

The Bolivian Institute for Altitude Biology (IBBA) carries out studies on primary pulmonary hypertension (Niermeyer and Moore, document in pre-edition, 2001). Other related studies are: “Hematimetric values in the altitude in healthy newborns”, “Glycemias in normal newborns in the altitude”, “Sanguineous gases in healthy newborns”, “Late and premature newborns”, “The Bronco-aspiration syndrome”, “Lactose intolerance”, “Hyaline Membrane” and “Pulmonary compliance”(Díaz, 2001).

Final comments

Based on the revision of programs and projects that are being executed at present, we can draw some short conclusions.

Although important progress has been made in state programs for neonate health care, adequate levels of effectiveness have not yet been attained. In order to achieve this objective, the following aspects must be underlined: updating of norms, improvement of the quality and infrastructure, provision of input, staff training, etc. Likewise, it is necessary to improve coordination between programs of the Ministry of Health and other sub-sectors so as to improve the orientation of actions in neonatal health care and achieve better results.

On the other hand, NGOs have developed isolated activities in this area, fundamentally within the framework of sexual and reproductive health and breastfeeding programs. The innovating experiences and the emphasis in communal mobilization that characterize their contributions could support the strengthening of neonate policies and programs and the development of neonate health care models in the family and community, with articulation to the services.

As regards research, there are some innovating initiatives, such as the cultural adaptation of services, routine home visits, communal information systems and communal mobilization. However, there are no operational investigations that systematize the impact thereof, and that therefore support the incorporation of these strategies at the national level.

The few studies and instruments available on this topic have not been disseminated, hence, they are not used in programmatic decision-making so as to improve interventions in neonatal health. This is the case of hospital registers, independent studies of professional members of the SBP, and others.

Isolated training efforts have been made by state instances and private or non-governmental institutions. Those actions should be integrated at the regional and national level, within the framework of a norm that defines functions according to levels of complexity, with participation of different actors.

Finally, although IEC/O material is available for sexual and reproductive health, which contains some elements on general care practices for neonates and breastfeeding, there is no IEC/O strategy at the national level, which specifically focuses on the problems of this age group.

Chapter V:

Supply and demand of health services

This chapter consists of two parts: On the one hand, an analysis is made of management levels and the supply of service of the Health System in Bolivia in the public, social security and private subsectors. In doing so, the installed capacity (human resources, infrastructure and equipment) are taken into account, as well as norms, information systems and training processes for human resources in health centers.

On the other hand, an analysis is made on the relative coverage of prenatal control, institutional childbirth, health care for under fives, contraception and anti-tetanus vaccination in pregnant women. The chapter concludes with a section on perceptions of the population on the quality of received health services.

Analysis of the management structure of the health system

The Popular Participation and Administrative Decentralization Laws introduced political, social and economic changes at the national, departmental and municipal level, which affected the Health System.

Law 1551, the Popular Participation Law, transfers the property right on real estate of health services to municipal governments without any cost. The new competences and responsibilities of municipal governments refer to maintenance of the health service structure, and the purchase of input, supplies and equipment of health centers, feeding for interned patients and complementary feeding programs, including school breakfast. These expenses must be covered with revenues of health services or tax resources.

Law 1654, the Administrative Decentralization Law, delegates the responsibility for administration, supervision and control of human resources and budgets for operation of health services according to policies and norms of the Ministry of Health to the prefectures (departmental governments).

The MSPS maintains its role as a supervisory and normative entity, and must coordinate activities of prefectures and municipalities. In this new context, the lack of a clear separation of management functions has caused ambiguity in the assignation of responsibilities, which must be redefined urgently.

At present, the Health System identifies four management levels. The first level contains the family health centers and posts that represent health areas. The second level

represents groups of areas, which form health districts; the health districts together form a departmental health service, which represents the third management level. This territorial administrative structure technically and normatively depends on the MSPS and administratively on the prefectures.

Finally, the fourth level is the Ministry of Health and Social Prevision, at the central level.

Analysis of the structure of health services

The Health System in Bolivia consists of the following subsectors: the public sector, the social security sector, and the profit seeking and non-profit private sectors. This last sector includes NGOs, the Catholic Church and traditional medicine. Most health institutions are concentrated in the public subsector (75%), followed by NGOs (10%), Social Security (8%), the Church (4%) and other private entities²⁴ (3%) (SNIS, 1998).

Installed capacity: human resources, infrastructure and equipment

Public subsector

The public subsector groups 14,368 persons: professionals, technicians, assistants and administrative personnel. Of the total economically active population in the health sector in 1999, 19% is medical staff, 8% nurses, 27% assistant nurses and 31% administrative and service staff. These data show that the distribution is not balanced: there is an imbalance between the high number of administrative staff and the number of staff directly responsible for attending users. The same happens in the number of doctors as compared to the number of nurses and assistant nurses (SNIS, 1999).

In absolute numbers, there are 33 doctors, 14 nurses and 48 assistant nurses for every hundred thousand inhabitants (SNIS, 1999), which is non-compliant with the international recommendation of having one doctor for every thousand inhabitants. Likewise, the analysis of the number of doctors per geographical area shows an important concentration of doctors in the principal cities, especially in the central axis.

The ***first level*** concentrates 91% of health institutions. This level is the entrance gate to the service network of the Health System. Staff responsible for service delivery in this level is: assistant nurses, doctors that are being trained during their rotating internship and/or general and/or family doctors.

On the ***second level***, there are 2,917 beds for basic hospital internment in 149 district hospitals. At this level, specialized services are also supplied, e.g. surgery, pediatric services, gynecology and obstetrics, etc. No national data are available on the availability of beds for childbirth, cradles and incubators for newborns at risk. In general, district hospitals of the rural area have general doctors and nurses, whereas in urban hospitals there are gynecologists-obstetricians, pediatricians and in some institutions even neonatologists.

On the *third level* there are 40 general hospitals and 30 specialized hospitals or institutes in capital cities (SNIS, 1999). At this level, most specialties and sub-specialties are concentrated (graph 9).

Graph 9
Number of health care institutions according to level of specialization

[...]

Source: Own elaboration based on Información Urgente and SNIS 1999

No specific information is available on the total number of obstetricians, neonatologists or health staff directly involved in newborn care in health institutions of the public subsector. No data are available either on the distribution of hospitals specialized in maternal-child care and pediatrics in every department. Nonetheless, every departmental capital city has at least one hospital that attends obstetric and newborn complications.

Table 6
Matrix on public sector hospitals that attend neonatal complications, per department

Capital City	Maternal-child Hospital	Pediatric Hospital	General Hospital with Obstetric and/or Pediatric Services
La Paz	Hospital de la Mujer	Hospital del Niño Ovidio Aliaga	
Santa Cruz	Hospital Maternológico Percy Boland	Hospital del Niño Mario Ortiz	
Chuquisaca	Hospital Gineco-obstétrico	Hospital Santa Bárbara	
Oruro			Hospital San Juan de Dios
Potosí			Hospital Daniel
Cochabamba	Hospital Materno Infantil Germán Urquidi	Bracamonte	
Tarija		San Juan de Dios	Hospital Regional
Beni	Hospital Materno Infantil Boliviano Japonés		
Pando		Galindo	Hospital Roberto

Source: Own Elaboration based on information of the Quality Observatory, General Direction of Health Services - URS, 2002

MotherCare/JSI in 1996 and the MSPS with SMN/JHPIEGO/BASICS in 2000 evaluated equipment of health institutions using checklists. The evaluation carried out in 1996 indicated that the hospitals of 7 districts of La Paz and Cochabamba did not have the equipment required for neonatal care, and even less so to meet the requirements of protocols for maternal-newborn care. The second evaluation, which covered 14 prioritized districts, also showed the insufficiency of input and equipment for neonatal health care at the first and second level. Both studies concluded that staff do not have the skills required for neonate care in general, and even less so to attend neonates at risk.

Social Security Subsector

Social security in Bolivia is attended by eight health care institutions: COSSMIL (Military Insurance), Caja Petrolera de Salud (Oil Sector), Caja de Salud de Servicios de Caminos (Road Sector), Caja Bancaria de Salud (Banking Sector), Caja Nacional de Salud (General), Caja de la Banca Privada (Private Banking Sector), Caja de Salud de CORDES, Seguro Social Universitario (University Sector), and an integrated insurance with a special regime Seguro Integral de Empleados CORDECRUZ. This subsector works with 197 institutions in the country (SNIS, 1999) and a total number of 11,821 human resources, the composition of which is similar to the public sector.

Private Subsector (Private consults, NGOs, Church and traditional medicine)

The information available in the private sector is incomplete, especially as regards the profit sector, as the health information system is a public sector system. It has been possible only to partially incorporate activities implemented in the private and traditional sectors.

More information is available on NGOs and Churches. A total number of 355 health institutions of the country are owned by NGOs and churches: 97% at the first level, 2% at the second level, and 1% at the third level. Estimates are that 10% of the population regularly uses these services, with an important growth of this subsector in the principal cities (SNIS, 1999). Health staff that work in this subsector have the same profile as in the public subsector.

The private subsector also includes health care services supplied by many traditional medicine providers (midwives, medicine men). In 1994, approximately 1,800 empirical midwives were registered in the country. In 1997, this number decreased to 800, 450 of whom articulated to the Health System. The official number fluctuates between 250 and 300 empirical midwives. Another type of communal human resources that has existed since creation of the Popular Health Committees in the eighties are the Popular Health Workers (PHW) or promoters. However, no census has been carried out to define the number of PHWs in the country. The only information available is that the PROCOSI network works with approximately 2,800 PHWs or promoters.

Presently, a draft Regulation on Traditional Medicine is being discussed at parliament level, which will be complementary to the Basic Health Insurance (Supreme Decree 26330).

Information systems in institutions and the community

There are two fundamental sources of information on health: the ENDSA, which is a probabilistic survey at the national level that collects information on households every 4 to 5 years; and the SNIS, which is the regular information system of the MSPS, which gathers data from health institutions.

In a parallel way, there are primary registration systems that have been unified at the central level, with the following instruments: Unique Clinical History, Basic Perinatal Clinical History, Perinatal Card, Childbirth Chart, Health Card of the SBS, Child Health Card, Referral and Counter-referral vouchers, and administrative control vouchers on delivered services (SBS, 2001). These instruments have not been disseminated at the national level, and therefore, they are used only partially. Likewise, as they are not integrated in the National Information System, they do not supply the epidemiological information required for decision-making.

Although the SNIS has existed for over 10 years and has partly achieved to become the unique information system, the lack of use of the instruments makes it impossible to prepare complete reports. The SNIS does not gather information on all communal services. Moreover, it does not have a unified model for register books, in support of monitoring and supervision.

With the objective of improving information of the SNIS, in 1990 the Committees for the Analysis of Information (CAI) were set up. These instances should operate regularly at the level of institutions, districts, departmental health secretaries (SEDES) and the central national level, with participation of health institutions and communal staff. Its objective is to detect problems, propose solutions for the detected problems and control the correct filling out of forms. Unfortunately, few CAIs have operated systematically. The best results have been obtained in districts and institutions.

According to service providers of health institutions, the filling out of these instruments is a bureaucratic task that can sometimes be a barrier for the attendance of patients. Furthermore, it is not a useful process for decision-making.

In 1995, results of the ENDSA showed high maternal mortality with clear regional differences. In a previous model for Maternal Mortality Control, the information on every documented maternal death was analyzed for corrective decision-making. This initiative was not accepted by staff of health institutions as they considered the idea behind this initiative was to determine medical negligence in case of maternal death and take punitive measures against the responsible. On the other hand, community participation was postponed. The present government has re-launched the third edition of the System for Epidemiological Control of Maternal Mortality (SVEMM), with an updating of the

norm for implementation in Bolivian health institutions, and of the organization and operation of the committees at different levels. However, the epidemiological control component of neonatal deaths is still absent in this last update.

Training of human resources

During the last ten years, various efforts have been made to carry through training activities for staff of health institutions, especially of the first level. The following activities are the most remarkable ones:

- “Essential Obstetric Functions” (SMN/JHIEGO, 2000), “Newborn Care” (UNAP/PROSIN/BASICS, 2000), and “Training Curriculums on the Treatment of Obstetric and Perinatal Complications” (UMSA, UMSS, MC, 1998): these are some of the training programs in obstetric and perinatal care. Besides, there are training initiatives in neonatal reanimation, such as the CNS course with support from the American Pediatrics Academy, courses under the ABRIR project and courses of the Centro Willac Kuna in Potosí, with support from the Italian cooperation.
- The MSPS enacted the norms for operation of Integrated Training Centers in Maternal-Child Hospitals, within the policy-framework of incorporation of Centers for National Integrated Health Training (CENIS) in the development of training packages that emphasize reproductive health (UNAP, 2001).
- As from 1998, the faculties of medicine of the state universities of La Paz and Cochabamba, and the Faculty of Nursing of La Paz incorporated a new curriculum for maternal and perinatal care, with support from the MSPS. On the other hand, the Genetic Health Project (SALGEN) of the Faculty of Medicine of La Paz is preparing a training strategy for the detection of perinatal risk as regards congenital malformations.
- Public health schools of La Paz and Cochabamba modified their programmatic content, basing their curricular design on the series “Improvement of the Educational Quality of Assistant Nurses” (MDH/SNS/MC/JSI, 1996).
- The Bolivian-Japanese Public Technical Health School developed a curriculum for semi-presence courses, including a module on neonate care. Thus, assistant nurses can be trained as technicians in nursing.

Norms for mother and newborn care

During the last five-year-period, the MSPS published norms and procedures that contemplate some aspects on the health of neonates: the Bolivian Health Norm for Health Care of Women and Newborns, Technical Guides for Health Care under the SBS and the Norm for Health Care of Women and Newborns in Maternity Institutes and Departmental Hospitals (NB-SNS-01-96).

It also published a series of other documents in support of the Norm, such as the Pocket Manual for the Use of Medication of the SBS and the Manual on Techniques and Procedures for Maternal and Perinatal Health Care.

In spite of the existence of these documents, these documents are not known and used by staff who attend childbirth and newborns in different institutions as there is no strategy for the dissemination of these documents. There are not flow charts and algorithms either on perinatal health care for the service network.

Demand of health services

The demand for health services varies depending on accessibility of the institution. Accessibility is considered in its three dimensions: geographical, economic and cultural. The cultural dimension implies the incorporation of cultural values in the provision of services.

Use of health care services

Coverage of prenatal control

Health staff consider that prenatal care is an important intervention for the health of women rather than well being of the fetus. The idea is to detect and prevent possible complications during pregnancy. Nonetheless, monitoring of the fetus during these controls is still very limited.

Coverage of prenatal controls carried out by health staff has improved in the last years. According to the ENDSA 98, in 1998 coverage amounted to 69%, as compared to 52% in 1994. The following factors can explain this improvement: urbanization, increased levels of schooling of women and the improved quality of the institutional service provision by means of the SNMN and later the SBS. It is important to underline that 30% of all women - basically women who live in the Altiplano and women who did not go to school – do not yet recur to prenatal controls (see annex 8).

Information of the SNIS also shows an increase in the coverage of prenatal controls with 89.57% for 1998. The information shows that in 2000, 33.25% of Bolivian women had four or more prenatal controls (SNIS, 2000). Anyhow, the average number of prenatal controls at the national level is still lower than the recommended average of 2.2 controls per woman (see annex 9).

Anti-tetanus vaccination in pregnant women

Coverage of the anti-tetanus vaccination has also improved in recent years. The percentage of pregnant women who received two or more doses of the tetanus vaccine increased from 22% in 1994 to 27% in 1998; and the percentage of pregnant women who had not received any dose of the vaccine decreased from 59% to 50% (ENDSA, 1998).

Coverage of institutional childbirth

Childbirth attended by health staff is recognized in Bolivia as one of the best strategies to decrease maternal and neonatal morbi-mortality, as people consider that duly trained staff, with adequate infrastructure and sufficient input can recognize and treat danger signs. Essential health care packages such as the SNMN and the SBS have made efforts to ensure the access of women to institutional childbirth, which had an impact on the increase of coverage of institutional childbirths in the last years. In 1998, a coverage of 53.2% (ENDSA, 1998) was achieved, with a decrease of deliveries at home in 11 points as compared to 1994. This increase was especially present in women of the urban area with higher levels of schooling (see annex 10).

In a parallel way, health institutions reported on an increase of their institutional birth services. In 1998, this coverage amounted to 48%, as compared to only 37% in 1996 (SNIS, 1998). In the year 2000, coverage of institutional confinement amounted to 55% (SNIS, 2000) (see annexes 11 and 12).

Although the coverage of institutional births increased, the average number of postnatal controls has not increased proportionately, and fluctuated between 28 and 29% between 1996 and 2000, although this service is contemplated under the SBS (SNIS, 2000).

Coverage of health care for under fives

The coverage of health care for under fives included newborns in its services (diarrhea and respiratory infections), nutritional control, vaccination, routine check-ups of under fives, etc. During the last years, these services have been consolidated in an integrated package of preventive and curative services. The impact on newborns as an individual group has not been identified. Hence, it is considered necessary to prepare indicators so as to propose specific and explicit actions for this group.

Contraception

Knowledge and use of contraception methods have improved in the last years in Bolivia. In 1998, this percentage increased to 89% as compared to 73% in 1998. The improved knowledge on modern methods has also improved, from 67% to 87% (ENDSA 1998) (see annex 13).

Likewise, the percentage of women who use a family planning method has increased from 20% to 31% between 1989 and 1998. This increase is higher in the groups of women with stable partners, women who live in the urban area and women with higher levels of schooling. The most frequently modern method used is the IUD, with an increase of 8% between 1989 (3.1%) and 1998 (11%) (ENDSA; 1998) (see annex 14).

It is worth mentioning that although the overall fecundity rate has decreased in this period from 5.1 to 4.2 / 1,000 women of fertile age, the unsatisfied need for family planning

increased from 24 to 26% in the group of interviewed women between 15 and 49 years old (ENDSA, 1998).

Perception of the population on the quality of health services

According to the Population and Housing Census of 1992, the access to public and private health services in urban areas amounted to 78% and in the rural area to 52%, taking account of the fact that 25% of persons resorted to traditional medicine to treat their health problems. 20% of the urban population and 23% of the rural population practiced self-medication or resorted to relatives to solve their health problems. There is no updated information, but estimates are that the percentages of access to health services have increased with the SBS and information on coverage, especially in the urban area. In this context, use of the institutional health system²⁵ for childbirth and post-childbirth services increased in the urban area, and to a lower extent in a large part of the rural area, where people prefer to recur to relatives or empirical midwives. This preference is associated with the focus on the family unit and respect for traditional habits.

Traditional medicine is still the first option for normal pregnancies and deliveries. When there is some kind of complication, the first alternative of the community is to recur to local specialists (medicine man, midwife) within the traditional system. When they cannot solve the problem, then people will go to the institutional health services (Seoane et al, 1996). In other words, the traditional health system is normally the last alternative to solve a health problem.

Not only the cultural and social shock associated with a certain degree of emotional and psychological suffering of the mother impede use of institutional health system. There are also other factors that are barriers for accessing health services:

- The distance to health centers
- Restricted working hours
- A deficient system for referral and counter-referral
- The deficient capacity to solve health problems, which is expressed in the non-existence or insufficient availability of input, medicine, infrastructure and/or adequately prepared staff
- The permanent rotation of health care providers
- The lack of knowledge of health suppliers of the habits and language of the community
- Ill-treatment of users by health staff

On the other hand, Rance (1992) sustains that the type of professional training of health providers does not focus on the adequate provision of a humanized and intercultural services. They are not trained to work in a pluri-cultural country and therefore, to enhance a dialogue with alternative health care systems and understand the world from different viewpoints. Training is based on “survival of the fittest”, it is competitive, challenging and militarized. Ill-treatment of students by teachers is extrapolated to patients. Moreover, during training, it is said that health care suppliers must “demonstrate

certainties and not mention doubts”. This notion of the “only truth” makes it even more difficult for them to see the reality of users.

The expectations users have as regards the improvement of the quality and humanity of health services are the following: humanized treatment; more sensibility for their habits within the framework of the socio-cultural reality of the region; improved access and relation with the community; adequate, accessible and sufficient information, trained staff and adequate equipment and infrastructure; etc. (De la Quintana and Jove, 1999).

Anyway, it is important to take into account that this scheme has been influenced by a more intense contact of new generations with the health system, and application of the Basic Health Insurance, which has eliminated the costs for prenatal, childbirth, post-childbirth and vaccination services.

Final comments

No detailed information is available on the situation of neonatal health care. Although there is information on maternal care, there is no updated inventory on the installed capacity and problem-solving capacity of the Public Services Network for newborn care. Therefore, this network with human resources and installed infrastructure is insufficient to attend the problems of neonates, as its services are not articulated with the requirements of neonatal health care.

Furthermore, at the national level, no sufficient efforts have been made to standardize the health care norms for hospital staff as regards neonate care. The norms only partially include aspects on neonate care and in many cases, these norms have not been disseminated at the national level. Clinical protocols on this topic are inexistent or do not supply staff with alternatives that enable them to adapt to the local reality.

With regard to the updating of staff in neonatal health care, this training did not form part of an integrated training proposal. In the same way, no system has been incorporated to analyze and improve effectiveness and efficiency of the health care system in health centers, and articulation thereof with the community.

On the demand side, there is still a series of cultural and geographic barriers that make it impossible to achieve higher levels of coverage, beyond the achievements obtained on ensuring economic accessibility of the services. This is a clear indicator that economic aspects are not the only problem but, as the users themselves affirm, that services should be provided with quality and warmth.

Chapter VI:

Gaps and future actions

This chapter gives a general overview of the gaps detected during the investigations, as regards epidemiological aspects of neonatal morbi-mortality, cultural aspects that influence neonate care, public policies and the implementation of programs and projects and finally, the quality of the provision of services in the health system considering the service demand.

Participants in the Workshop on Strategic Planning of the Situation of Newborns in the month of January 2002, worked on the detected gaps as a starting point for proposing future actions for the improvement of the state of health of newborns. A series of proposals were developed, which are presented below and which are ordered according to possible areas of strategic intervention:

- Policymaking
- Programs, Projects
- Training
- IEC/O
- Information systems
- Research

Gaps and future actions concerning policymaking

Saving the life of newborns in Bolivia is still a challenge. Although there is political will to reduce newborn mortality, this is not explicitly reflected as a priority in policies and programs of the Ministry of Health. The corresponding policies and programs are not disseminated in the different levels of the Health System, and therefore, application, follow-up and evaluation thereof are not analyzed internally.

Departmental and municipal authorities do not incorporate the topics of neonatal mortality either as a priority on their agenda. Therefore, neonatal mortality is not identified as a problem that should be dealt with by means of local actions aimed at reducing the high mortality rates. In this context, it is necessary to promote a commitment of the SEDES and municipalities as local actors to ensure economic and social sustainability of interventions for the benefit of newborns, by means of the enhancement of specific activities in this area.

It is also important to involve the population in general – by means of communal mobilizations - in actions for the benefit of neonatal health, which should be aimed also at the achievement of a commitment from organized social sectors such as agrarian unions, neighborhood councils and others. One of the key activities in this field is the

strengthening of the maternal and neonatal control system, in which promoters and traditional midwives could play a protagonist role.

On the other hand, the need to expand the Basic Health Insurance to attend neonatal problems is more and more evident for service providers committed to reducing newborn mortality. Services of the SBS do not cover all neonate service needs, especially as regards sepsis, low weight at births and premature births.

Another short or medium term challenge is the articulation of newborn care with other health programs and strategies that are recognized as effective interventions to improve health indices in Bolivia, for example the Safe Motherhood Strategy, Breastfeeding, etc. The purpose is to enhance the integrated handling of health problems, with a lower cost-effectiveness ratio. This favors a bigger and better resource mobilization for the sector.

At community level, the fact that births are not immediately registered, causes omissions in the information on newborn deaths. In order to avoid this situation, at present an initiative is being promoted in Parliament and the Office of the First Lady, the objective of which is to facilitate immediate and free registration. A further objective is to contribute to the creation of the necessary conditions for the neonate population to be able to adequately exercise its right to citizenship.

Within this framework, it is urgent to develop strategies at the local and national level so as to create a political environment that favors the protection of neonatal health, with willingness to intervene in the specific areas of change to be defined.

Including newborn health on the public agenda is an objective that implies consensus building among different sectors. The idea is to enhance a strategic alliance focused on neonates at the national, departmental, and municipal levels, with participation of the public and private sectors and the international donor community. This initiative could become an effective process to integrate actions in the field of neonate health that are presently developed in an isolated manner

Gaps and future actions concerning programs and policies

The present study shows that most programs and projects in sexual and reproductive health center on health care for pregnant women or mothers, without taking account of opportunities to give advice, provide health care, detection and referral in case of neonatal complications.

Public sector

The problem-solving capacity of public services in neonatology is low, among other factors, due to the fact that services under the SBS, the infrastructure and equipment of services, and staff training do not satisfy the corresponding requirements. Hence, minimum standards should be defined as regards equipment, input and staff for neonate

care, according to the levels of complexity of each institution and characteristics of the target population group.

The AIEPI strategy has achieved improvement of the levels of health in under fives. The neonatal component was developed, but it has not yet been implemented at the level of services and the communal module has not yet been developed. It will be necessary to work in coordination with the MSPS on training and implementation of the neonatal AIEPI in services as well as on the development and validation of the communal module.

NGOs

A short-term challenge is to ensure that NGOs that work in health topics participate in neonate health care strategies. Networks, such as PROCOSI are useful for the systematization of alternative models for community intervention.

The purpose is to support initiatives that enable the improvement of neonate care practices in the community and family, the recognition of danger signs, the adequate search for help, the problem-solving capacity of health centers in case of obstetric and neonatal complications and the strengthening of social networks for neonatal health.

Neonatal mortality interventions are complex and require joint actions so as to deal with the challenge. Thus, integrated strategies and the commitment of different actors could contribute to the reduction of newborn mortality in Bolivia.

Gaps and future actions in training

In Bolivia, present norms²⁶ for maternal and neonatal health care that have been elaborated at the central level emphasize maternal health care with a weak neonatal component and have not been incorporated in daily activities of health staff.

Both services providers and human resource trainers mention the need to revise and update these norms, adapting them to different health care levels, so as to facilitate compliance. In doing so, the responsibilities of health staff according to different health care levels could be identified, as well as required input and equipment in health centers for compliance with the norms. From this perspective, the incorporation of protocols for the transportation of newborns and the definition of communication systems for referrals and solutions in case of neonatal complications at all levels of health care are essential elements for the strengthening of the service network.

In order to ensure the efficient application of these norms, it is necessary to develop specific training courses for every level. Thus, the norms will support the development of skills and competencies of operational staff in the health sector. This proposal implies the need for a national training program in clinic management of obstetric and neonatal complications, which also includes preventive and promotional aspects on maternal and neonatal health, for health staff to be able to implement activities focused on orientation for families and communities.

Training experiences that have been developed by state and private organizations have given rise to a series of important lessons learned, which should be used to orient the content and methodological approach of this training proposal, especially focusing on the comprehensiveness of contents, with participatory methodologies that contemplate case studies and practices in services. It is important to stress the need to incorporate concepts of traditional medicine, which will enable the enhanced understanding of positive practices in neonate care and which will enhance the intercultural integration, which will favor the elimination of one of the barriers for accessibility to health services.

This training program must be completed with a component on monitoring and follow-up to evaluate the implementation of changes in the provision of services and to identify the areas that require periodic updating.

In human resources training institutions, modified curriculums have not contributed to improvement of the problem-solving capacity of health staff in the neonatal area. Having a national training program will make it easier for these institutions to identify the contents required to improve their curriculums in neonatal health. The training module in norms could be used as an important input for these institutions to implement an adequate curricular change.

In order to achieve these objectives, professionals who represent the Ministry of Health, academic sectors such as universities and scientific societies and health centers must be invited, who, together with representatives of the community, will identify the needed changes and updating of the health care norms. Moreover, they will propose the design of the training program.

Gaps and future actions concerning IEC/O

The different cultures that cohabit in Bolivia strongly maintain their traditional health care practices, e.g. care practices for pregnant women and newborns. As regards this aspect, one of the central problems in the community and services is the lack of communication channels to reach a large part of the population and the lack of information of the population on essential care practices for newborns.

There is no national IEC/O strategy that promotes this type of care practices. The messages disseminated at present do not lessen the difficulty of families to recognize danger signs and preventive actions in neonatal health care.

The findings from research on health practices in the community and of health services staff are important input to adapt and/or develop effective messages on hygiene in childbirth and newborn care, the prevention of hypothermia, care practices for the baby's eyes and umbilical cord, immediate and exclusive breastfeeding, and other essential care practices; as part of a national communication strategy that takes account of the nature and characteristics of every eco-region.

With respect to efforts made to promote the SBS, they have not resulted in the increased demand for neonatal care services. The development of activities for the promotion of and communication on these essential care practices must forge strategic alliances with programs and institutions involved in this topic. For example, incorporation of the neonatal component in the educational communication strategy of programs such as the Sexual and Reproductive Health and Breastfeeding programs is urgent.

Information system

Neonatal mortality has been identified as a serious problem of public health in Bolivia, because of its impact on and contribution to infant mortality and mortality of under fives. Nonetheless, the actual magnitude of the problem is unknown, as this topic is being included only recently in the national health policies.

Information systems do not visualize newborns as a specific target population. A revision of different existing sources of information in the country shows that the information on newborn mortality and morbidity is incomplete and inconsistent, as was already mentioned in the chapter on epidemiology.

Information in the SNIS on the production of services contemplates neonatal health under the age group of infants under 1 year old. Activities on epidemiological control only register early neonatal death in hospital. Moreover, the information coming from CAPOs of the SBS should be taken advantage of for incorporation in intervention for infants under 2 months old. These information gaps hamper the decision-making process specifically related to this population group in different periods, as well as follow-up of the implemented activities.

As regards the National Survey on Demography and Health (ENDSA) in Bolivia, it is a reliable source of information. In the last two versions of the years 1994 and 1998, information was obtained on neonatal mortality, which is used in the chapters on Epidemiology and Supply and Demand of the present document. A new survey will be held in 2003, which will be an opportunity to gather more specific information on neonatal mortality in more specific periods (early mortality, first-day mortality), as well as to study the possibility to incorporate instruments to obtain information on morbidity of newborns in the community.

One of the most considerable challenges in the search for the improvement of conditions of newborns is promotion of decision-making based on the analysis and use of the information, both at the national and local level. CAIs – on different levels – represent an opportunity to use a systematized analysis model to follow up verifiable indicators on neonatal health, aimed at measuring the impact of actions in this area. This model must incorporate the communal Epidemiology approach to identify the causes and possible solutions in services and the community. At the same time, actions must be defined that ensure periodic communal participation, of service providers and other actors in the analysis of the situation of maternal and neonatal health.

On the other hand, the MSPS is developing an active campaign during 2002 for implementation of the SNVEMM at the national level. This system does not contemplate neonatal death, although it is important to do so.

The verification of consistency of the information, the inclusion of specific variables and coordination between different sources of information are some of the measures recommended for institutions responsible for the gathering of information to improve the information available on neonatal health.

Gaps and future actions concerning research

Epidemiological research

In the search for the reduction of neonatal mortality rates, the revision of the neonatal situation has identified some potential research areas in the field of Epidemiology: knowledge gaps on actual perinatal mortality and morbidity rates, the relation between low weight at birth and neonatal death, the microbiological distribution in neonatal infections, the relation between neonatal death and endemic infectious diseases in the country (tuberculosis, malaria, chagas, yellow fever and congenital malformations).

In order to investigate the biological and social causes of deaths at community level, a verbal autopsy method has been developed. In Bolivia, this instrument has been applied in under fives in the city of El Alto. The instrument still needs to be adapted to specific problems of newborns, so as improve the performance of control systems and epidemiological studies on newborn mortality.

Formative research

The chapter on cultural aspects mentions some practices at communal level related to care practices of normal neonates. Family and community care practices for ill neonates still need to be identified, including the recognition of danger signs and the search for adequate care. A specific ethnographic investigations is proposed to increase knowledge on these practices in their cultural context.

Moreover, there is no information on the relationship of some practices with survival and morbidity of neonates. A research on cases and controls could help to understand the effects of these practices and to identify possible interventions.

Operational research

The demand for health services, especially in the rural area, is low as compared to the need to receive health care, especially for neonates. On the other hand, the contact of health staff with the community outside the health center is limited. There is a considerable gap in this sense. It is indispensable to design strategies for health services to get closer to neonates and families.

A strategy for the cultural adaptation of services, for example, could enhance use of these services in the community. Among other things, this implies the needs for awareness raising on service suppliers on the use and habits of the different cultures that exist in the country, especially the culture in which they work; and their getting to know the traditional health system and/or the incorporation of actors of the traditional system on the health care services system. Operational investigations will have to be carried out to measure the impact and effect of cultural adaptation in use of the services.

Another strategy that must be taken into account are the routine home visits by assistants and/or promoters during pregnancies and after childbirth. In Bolivia, home visits do not form part of the routine health care practices. As international studies show these visits have a positive impact on the reduction of neonatal mortality, it is recommendable to study the feasibility, cost-effectiveness and sustainability of this intervention in the country.

The need to know the reality of the country in the topic we are studying is beyond discussion. To this effect, studies must be carried out on the potential of application of these interventions at the national level. Only with this knowledge it will be possible to guide our actions in neonatal health care in Bolivia with the precision we require to make progress with efficiency and effectiveness.

Annex 1

Newborn and early newborn mortality rates

	Neonatal mortality		No. of neonatal deaths		% Early /Total
	Total	Early	Total	Early	
Chuquisaca	35	22	686	430	62,7
La Paz	47	26	2453	1348	55,0
Cochabamba	38	22	1669	961	57,6
Oruro	25	19	396	307	77,5
Potosí	44	35	858	689	80,3
Tarija	15	7	426	194	45,5
Santa Cruz	20	9	1934	843	43,6
Beni/Pando	20	13	487	310	63,7
Total	34	19	8909	5082	57,0

Source: Based on Información Urgente, 2000. INE/CELADE, 1996. ENDSA, 1998

Annex 2

Evolution of early neonatal mortality in hospitals per 1,000 live births

	1996	1997	1998	1999	2000	2001
Beni	5,4	4,3	5,3	6,5	10,7	4,1
Chuquisaca	8,2	12,3	13,2	8,1	7,7	14,1
Cochabamba	6,1	9,7	7,0	3,9	5,2	1,5
La Paz	7,9	8,8	5,7	7,6	7,4	5,6
Oruro	20,5	13,1	11,3	12,5	14,1	10,7
Pando	0,0	16,1	0,0	2,7	19,6	19,7
Potosí	24,4	26,4	20,6	21,1	18,4	20,9
Santa Cruz	6,1	3,7	4,4	4,4	3,4	1,7
Tarija	8,0	9,2	20,7	8,1	11,9	4,0
Total	7,7	7,8	7,4	6,3	6,9	4,6
Urban	7,2	8,3	7,9	6,4	8,0	0,0
Rural	9,1	6,7	6,2	6,0	4,7	0,0

Source: SNIS. Jan/June, 1996 - 2001

Annex 3

Evolution of the hospital perinatal mortality rate per 1,000 live births

	1996	1997	1998	1999	2000	2001
Beni	37.9	26.1	21.1	26.5	28.1	21.5
Chuquisaca	35.0	36.9	35.6	27.1	29.3	38.5
Cochabamba	28.0	26.8	23.0	23.7	20.7	17.2
La Paz	35.7	34.1	33.6	28.3	30.3	26.7
Oruro	49.9	56.0	33.0	31.2	30.7	30.2
Pando	42.7	39.4	19.0	50.5	30.5	43.3
Potosí	30.6	38.6	32.0	31.4	31.5	31.2
Santa Cruz	19.8	19.7	20.6	18.0	18.0	17.2
Tarija	35.3	30.6	40.2	24.6	32.3	27.2
Total	31.3	29.4	27.2	24.1	24.7	23.0
Urban	30.2	30.3	26.7	22.9	26.1	19.1
Rural	34.6	27.4	28.5	26.6	21.8	17.4

Source: SNIS. Jan/June, 1996 - 2001

Annex 4

Weight at birth of under three year olds

	< 2.5 Kg	2.5 Kg and +	Ns/S Inf.
Age at birth			
< 20	6,4	61,5	32,1
20-34	4,1	58,8	37,1
35+	4,7	46,4	48,9
Birth order			
1	5,5	71,1	23,4
2-3	4,9	62,5	32,6
4-5	3,9	49	47
6+	3,3	38,5	58,1
Residence			
Urban	5,6	72,6	21,8
Rural	3,1	36,5	60,4
Region			
Altiplano	4,1	46,4	49,4
Valley	5	54	41
Lowlands	4,5	75,4	20
Department			
Chuquisaca	4,8	48	47,1
La Paz	4,6	46,4	48,9
Cochabamba	4,9	49,7	45,4
Oruro	3,4	57	39,7
Potosí	3	42,1	54,9
Tarija	5,6	78,6	15,8
Santa Cruz	4	76,9	19,1
Beni/Pando	6,7	69,5	23,7
Level of schooling			
No schooling	2,5	21,9	75,6
Basic	4	40	55,9
Intermediate	4,8	67,8	27,4
Secondary Ed. or more	5,7	86,3	8
Level of marginality of the municipality			
Dep. Capital	6,1	78,3	15,6
Low	5,2	64,9	29,9
Medium	2,8	34,1	63,1
High	1,2	16,8	82
El Alto	3,7	50,3	46,1
Total	4,5	57,1	38,4

Source: ENDSA, 1998

Annex 5

Evolution of the percentage of newborns with low weight in Bolivian hospitals

	1996	1997	1998	1999	2000	2001
Beni	6,1	4,5	5,4	4,4	4,4	5,2
Chuquisaca	6,5	6,0	6,4	6,5	7,3	10,3
Cochabamba	5,2	5,1	6,6	4,7	4,7	6,7
La Paz	9,2	7,1	9,8	8,2	7,6	7,7
Oruro	7,9	6,8	6,7	6,7	6,3	5,6
Pando	8,5	6,3	3,8	8,6	6,6	4,8
Potosí	6,6	7,7	7,0	6,0	6,1	7,6
Santa Cruz	4,0	2,1	4,3	4,6	5,2	4,7
Tarija	4,2	6,7	4,8	5,8	4,5	6,1
Total	6,3	5,0	6,3	5,8	5,8	6,4
Urban	6,6	5,5	7,0	6,4	6,3	7,0
Rural	5,4	4,0	4,6	4,3	4,7	5,3

Source: SNIS. Jan/June, 1996 - 2001

Annex 6

Evolution of the percentage of newborns with low weight who died in Bolivian hospitals

	1996	1997	1998	1999	2000	2001
Beni	18,4	16,5	10,8	17,8	19,9	24,2
Chuquisaca	21,6	12,4	15,9	11,2	11,7	16,8
Cochabamba	32,7	22,2	10,8	16,0	18,1	33,2
La Paz	14,4	19,6	12,8	13,1	14,3	14,9
Oruro	22,7	20,4	20,4	15,9	17,2	34,6
Pando	28,6	25,0	0,0	44,1	12,5	0,0
Potosí	18,7	10,2	10,6	11,4	12,4	31,4
Santa Cruz	16,6	15,8	18,4	16,3	13,7	24,5
Tarija	22,6	16,2	15,4	9,9	10,5	27,1
Total	18,8	17,5	14,3	14,5	14,5	23,6
Urban	18,3	17,6	13,3	13,1	14,7	18,3
Rural	20,8	17,1	18,1	19,5	13,8	36,2

Source: SNIS. Jan/June, 1996 - 2001

Annex 7

Initial breastfeeding for children under three

	Was breastfed sometime	First hour	Started to be breastfed		Number of children
			First day		
Sex					
Male	96	36.9	72.2		2083
Female	97.3	40.2	75.4		2023
Birth attendance					
Medical staff	96.4	43.1	80.2		2437
Midwife	97.7	35.6	66.3		293
Others or no one	96.8	31.3	64.7		1367
No information	*	*	*		10
Place of childbirth					
Health institution	96.4	43.8	80.9		2297
At home	97	32.2	65.2		1781
No information	95.7	18.1	43.2		28
Residence					
Urban	96.2	41.3	79		2339
Rural	97.2	34.9	67.1		1767
Region					
Altiplano	96.6	37.7	72.3		1684
Valley	97.8	32.8	70.5		1234
Lowlands	95.5	45.7	79.4		1188
Department					
Chuquisaca	98	40.6	65.2		312
La Paz	96.1	39.7	74.8		1104
Cochabamba	97.7	30.3	71.9		722
Oruro	99	36.9	81.9		172
Potosí	96.9	32.8	61.6		408
Tarija	97.8	29.8	73.9		200
Santa Cruz	94.9	46.6	80.6		952
Beni/Pando	97.6	42.2	74.8		236
Level of schooling					
No schooling	97.7	32.8	60.9		456
Basic	96.8	36.7	71.1		1698
Intermediate	97	43	77.4		647
Sec. ed or more	95.9	40.8	80.2		1304
Level of marginality of the municipality					
Dep. Capital	95.6	42.3	79.7		1486
Low	97.3	39.8	75.1		886
Medium	96.9	35.4	68.6		1246
High	96.7	29.8	56		192
El Alto	98.4	35.1	74.5		296
Total	96.6	38.5	73.8		4106

* Percentages are not calculated for under 25 cases
Source: ENDSA, 1998

Annex 8

Coverage of first prenatal control according to socio-economic and demographic characteristics

	<i>Received prenatal care</i>			Did not receive PNC	Did not know/No Info	No. of births
	Doctor	Nurse/Ass.	Midw./Rel.			
Age at birth						
< 20	68.5	6	0.1	25.3	0	587
20-34	64.8	5.9	0.4	28.5	0.4	281635+
	48.7	8.5	0.6	41.6	0.6	702
Birth order						
1	78.4	3.8	0.1	17.5	0.2	1001
2-3	68.7	5.7	0.2	25	0.4	1458
4-5	52.2	6.8	1	39.5	0.5	814
6+	42.9	10.3	0.4	45.9	0.5	833
Residence						
Urban	79.6	1.6	0.3	18.1	0.4	2339
Rural	40.1	12.7	0.4	46.5	0.3	1767
Region	0	0	0	0	0	0
Altiplano	54.3	6.4	0.2	38.6	0.5	1684
Valley	60.2	10.3	0.2	28.9	0.3	1234
Lowlands	76.7	2.2	0.8	20	0.3	1188
Department						
Chuquisaca	46.4	23.5	0	29.4	0.6	312
La Paz	56.2	2.7	0.1	40.3	0.5	1104
Cochabamba	64.9	3.3	0.2	31.3	0.2	772
Oruro	63.5	3	0.5	32.5	0.5	172
Potosí	45.2	17.9	0.2	36.4	0.3	408
Tarija	64.7	15	0.7	19.5	0	200
Santa Cruz	79.4	2.2	0.7	17.5	0.2	952
Beni/Pando	66	2.2	1	30.2	0.6	236
Level of schooling						
No schooling	28.5	10.9	0.3	59.2	1.1	456
Basic	47	9.7	0.7	42.5	0.2	1698
Intermediate	71.5	4.3	0.2	23.4	0.6	647
Sec. ed. or more	90.3	1.6	0	7.8	0.3	1304
Level of marginality of the municipality						
Dep. Capital	82.9	0.9	0.2	15.4	0.6	1486
Low	69.2	6.8	0.6	23.3	0.1	886
Medium	40.2	12.5	0.5	46.5	0.3	1246
High	18.9	14.1	0.4	65.7	0.9	192
El Alto	63.4	1.6	0	35.1	0	296
Total	62.6	6.4	0.4	30.3	0.4	4106

Source: ENDSA, 1998

Annex 9

Evolution of coverage of the fourth prenatal control, per department

	1996	1997	1998	1999	2000	2001
Beni	21,85	28,70	23,57	35,75	34,33	32,17
Chuquisaca	39,93	36,74	35,70	37,89	46,30	42,78
Cochabamba	8,90	16,45	15,39	22,54	26,85	32,67
La Paz	21,50	25,91	30,66	30,87	30,19	29,30
Oruro	16,16	21,27	27,22	30,76	42,61	28,03
Pando	14,17	34,98	19,04	29,91	26,56	26,58
Potosí	19,39	17,20	18,58	25,61	27,51	29,67
Santa Cruz	11,14	20,28	24,01	33,48	35,73	36,68
Tarija	22,32	31,75	33,11	38,80	41,73	37,77
Total	17,76	23,10	25,11	30,60	33,10	33,16

Source: SNIS. Jan/June, 1996 - 2001

Annex 10

Coverage of institutional childbirth, according to socio-economic and demographic characteristics

	Place of childbirth			No. Births.	% Caesarean
	Health service	At home	Not known/No info		
Age at birth					
< 20	63.4	36.2	0.4	587	10.7
20-34	56.7	42.7	0.6	2816	15.3
35+	46.8	52.1	1.1	702	15.9
Birth order					
1	74.2	25.6	0.2	1001	21.2
2-3	61	38.2	0.9	1458	17.1
4-5	47.8	51.8	0.4	814	11.8
6+	33.2	65.7	1.1	833	5.6
Residence					
Urban	75.5	23.9	0.6	2339	21.4
Rural	30.1	69.2	0.7	1767	6
Region					
Altiplano	43.2	56.6	0.3	1684	9.6
Valley	57.2	41.6	1.3	1234	15.2
Lowlands	72.8	26.6	0.6	1188	21.5
Department					
Chuquisaca	45.6	53.1	1.3	312	7.7
La Paz	43.3	56.6	0.2	1104	11.4
Cochabamba	60	38.7	1.3	722	18.9
Oruro	58.4	41.5	0.2	172	6.1
Potosí	36.4	62.9	0.7	408	6.2
Tarija	65.1	33.7	1.2	200	13.6
Santa Cruz	77.7	22.1	0.2	952	23.8
Beni/Pando	52.9	44.8	2.3	236	12.4
Level of schooling					
No schooling	21.3	77.8	0.9	456	3.8
Basic	35.4	63.9	0.7	1698	6.4
Intermediate	66.2	33	0.8	647	14.3
Sec. ed. or more	89.7	9.8	0.5	1304	29.7
Level of marginality of the municipality					
Dep. Capital	82.9	16.4	0.7	1486	25.8
Low	61.6	37.6	0.8	886	12.2
Medium	27.6	71.6	0.8	1246	5.1
High	13.6	86	0.4	192	4.2
El Alto	50.3	49.7	0	296	14.1
Prenatal visits					
None	16.1	82.7	1.2	1254	
1-3 visits	52.3	47.4	0.4	853	
4+ visits	82.7	16.9	0.4	1981	
Does not know/No info	66.8	28	5.2	18	
Total	55.9	43.4	0.7	4106	14.7

Source: ENDSA, 1998

Annex 11

Evolution of coverage of hospital childbirths in every department

	1996	1997	1998	1999	2000	2001
Beni	34,70	46,45	43,64	50,72	53,77	50,52
Chuquisaca	34,96	35,81	39,77	42,50	48,07	47,43
Cochabamba	15,69	26,95	28,35	38,29	43,50	46,41
La Paz	25,42	30,00	31,61	36,02	38,77	35,66
Oruro	34,57	35,91	37,27	39,33	47,68	37,89
Pando	21,47	32,32	39,44	48,21	42,67	47,28
Potosí	20,77	25,76	25,97	32,55	32,68	27,19
Santa Cruz	30,89	48,07	60,89	67,39	65,38	59,15
Tarija	53,55	53,41	54,46	57,25	58,04	53,51
Total	27,27	35,82	39,92	46,00	48,25	45,18

Source: SNIS. Jan/June, 1996 - 2001

Annex 12

Coverage of childbirth attended by trained staff in every department

	Urban	Rural	Total
Beni	63,21	53,33	59,93
Chuquisaca	66,14	71,36	69,27
Cochabamba	43,13	73,08	55,71
La Paz	53,60	32,11	46,20
Oruro	61,13	58,74	60,20
Pando	109,28	49,17	72,38
Potosí	67,94	46,70	53,82
Santa Cruz	49,52	117,19	66,12
Tarija	84,13	31,44	64,36
Total	54,40	62,11	57,37
Altiplano	56,34	39,99	49,46
Valley	54,57	67,12	60,28
Lowlands	52,21	100,99	65,23

Source: SNIS, 2000

Annex 13

Evolution in the percentage of women who use contraceptives

	<i>ENPM 83</i>	<i>ENDSA 89</i>	<i>ENDSA 94</i>
Modern methods	9.9	12.2	17.7
Pill	2.7	1.9	2.8
IUD	3.4	4.8	8.1
Sterilization	2.4	4.4	4.6
Other modern methods	1.4	1.1	2.2
Traditional methods	13.7	18	27.6
Rhythm	12.7	16.1	22
Other trad. methods	1	1.9	4.9
Folkloric	*	*	0.7
Total use	23.6	30.3	45.3

* Folkloric methods are included under "other traditional methods" in 1973 and 1979
Source: ENDSA, 1998

Annex 14

Present use of contraceptives in women, based on selected characteristics

	Any method	Total Modern methods	Pill	IUD	Injection	Vaginal	Condom	Female sterilization
Residence								
Urban	57.6	32.3	4.8	14.2	1.4	0.1	3.4	8.3
Rural	30.1	11.3	1.7	5	0.6	0	1	2.9
Region								
Altiplano	44.2	16.7	1	10.6	0.5	0	2.5	2
Valley	45.1	25.2	1.6	12.6	1.2	0.2	2.6	7
Lowlands	57.9	38.2	10.3	10.3	1.9	0	2.9	12.9
Department								
Chuquisaca	34.6	17.8	1.3	10.1	0.3	0.1	1.5	4.5
La Paz	48.6	18.1	1.1	11.6	0.5	0	2.8	1.8
Cochabamba	44.1	23.4	1.1	11.5	1.1	0.2	2.4	7.1
Oruro	40	15.6	0.8	11.5	0.5	0.1	1.6	1.1
Potosi	31.6	12.4	0.8	6.8	0.5	0	1.5	2.8
Tarija	62.1	40.6	3.6	20	2.7	0	4.8	9.7
Santa Cruz	58.3	38.6	10.6	10.7	2.1	0	3.2	12.1
Beni/Pando	56.2	36.4	8.8	8.6	0.9	0	1.3	16.7
Level of schooling								
No schooling	19.4	7.6	0.5	2.8	0.2	0	0.4	3.7
Basic	38.1	16.4	2.5	6.6	0.8	0	1.4	5.1
Intermediate	53.3	27.5	6.8	10	1.1	0	2.2	7.4
Sec. ed. or more	65.2	38.3	4.9	18.5	1.7	0.1	4.7	8.3
Level of marginality of the municipality								
Dep. Capital	58.7	35.8	5.2	15.9	1.6	0	4.1	9
Low	49	25.3	5.3	9.2	0.7	0.2	1.8	8
Medium	32.1	11.4	1.1	5.1	0.9	0	0.9	3.2
High	17.8	4.8	1.5	1.7	0	0	0.6	1
El Alto	52.4	17.6	1.2	12.1	0.3	0	2.7	1.2
Number of children who live								
None	21.2	7	3	1.2	0.8	0	2	0
1	49.7	23.6	6.1	10.2	1.9	0.1	4.7	0.6
2	54.5	28.1	4.4	16.2	1.5	0	3.8	2.1
3	56.5	32.2	3.7	15.5	0.7	0.1	2.9	9
4+	43.6	23.1	2.6	7.6	0.8	0	1	11.1
Women 15-49, 1998								
Women 15-49, 1998	48.3	25.2	3.8	11.1	1.1	0	2.6	6.5
Women 15-49, 1994								
Women 15-49, 1994	45.3	17.7	2.8	8.1	0.8	0.1	1.3	4.6
Total men 15-64								
Total men 15-64	52	23.6	2.9	10.3	0.9	0.1	3.3	6.1

Source: ENDSA, 1998

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Visited institutions (per Department)

La Paz

APROSAR
APSAR
WORLD BANK
BASIC'S
CARE
CATHOLIC RELIEF SERVICES
CEMSE
CEPAC
CIDA
CIDEM
CIES
EUROPEAN COMMISSION
CONSEJO RURAL ANDINO
BELGIAN COOPERATION
CRECER
DFID
GENERAL DIRECTOR PLANNING
GENERAL DIRECTOR SERVICES
DIRECTOR CIELO/AIEPI
ENGENDER HEALTH
ESPERANZA
FAMILY CARE INTERNATIONAL
FOOD FOR THE HUNGRY (FFH)
HOSPITAL DE LA MUJER
HOSPITAL DEL NIÑO
HOSPITAL HOLANDES
HOSPITAL MATERNO INFANTIL
IBBA
INTERNATIONAL PLAN PARENTHOOD FOUNDATION (IPPF)
JEFE SALUD REPRODUCTIVA
JEFE UNAP
MEDICOS SIN FRONTERAS
MINISTRY OF HEALTH
MNH
MOTHERCARE
MSH
PHO/WHO
PLAN INTERNATIONAL
PROMUJER
PROSALUD
PROSIN
QAP
RESPONSIBLE FOR MATERNAL AND PERINATAL HEALTH
SACOA
SAVE THE CHILDREN
SERVIR

SOBOMETRA
TAHIPAMU
THE POPULATION COUNCIL
UMSA
UMSA DEAN FACULTY OF MEDICINE
UNFPA
UNICEF
UNIVERSITY NUR
USAID
VICE-MINISTER OF SOCIAL PREVISION
VICE-MINISTER OF PUBLIC HEALTH

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Cochabamba

1. APSAR
2. SAVE THE CHILDREN/CANADA
3. SEDES
4. UMSS FACULTY OF MEDICINE.

Santa Cruz

1. CARE
2. CEPAC/QAP/SACOA
3. MUNICIPALITY
4. PLAN INTERNATIONAL
5. PROSALUD
6. RESPONSIBLE UDAP
7. UNIVERSITY NUR
8. UNIVERSITY NUR

Chuquisaca

1. MUNICIPALITY
2. PLAN INTERNATIONAL
3. PROYECTO CARDENAL MAURER
4. SEDES
5. UNIVERSITY SAN FRANCISCO XAVIER FAC. OF MED.

Tarija

1. ESPERANZA
2. HOSPITAL REGIONAL SAN JUAN DE DIOS

3. PLAN INTERNATIONAL
4. PROMUJER
5. SEDES
6. UJMS FAC. OF NURSING

Oruro

1. APROSAR
2. HOSPITAL GENERAL S. JUAN DE DIOS
3. HEALTH RESPONSIBLE MUNICIPALITY
4. SEDES

Potosí

1. CARE
2. HOSPITAL GENERAL DE POTOSI
3. HEALTH RESPONSIBLE MUNICIPALITY
4. SEDES
5. WILLAC KUNA

Footnotes

- 1 Census 2001, preliminary data
- 2 Which – as we have seen – does not respond to socio-cultural practices of a large part of rural communities, where breastfeeding is started one to seven days after childbirth.
- 3 This refers to the World Conference on Human Rights (Vienna, 1993), the International Conference on Population and Development (El Cairo, 1994), the IV World Conference on Women (Beijing, 1995), the World Summit on Social Development (Copenhagen, 1995), and the Conference on Safe Motherhood (Sri Lanka, 1997). We should also mention the 5th, 6th, 7th and 8th Conferences of the Wives of Heads of State and Government of the Americas and the commitments of Kingston, Jamaica, which define the goals of 2000.
- 4 WARMI project: this project was developed by Save the Children in the province of Inquisivi, and was later disseminated at the national level through Plan Vida. The methodology enables the participation of women in the identification of their health problems and the search for solutions.
- 5 “Cuidado de Salud de las Madres and los Recién Nacidos dentro del Componente de Reforma en Salud en Bolivia” (Health Care for Mother and Newborns under the Health Reform Component in Bolivia) (John Snow Incorporated/ MotherCare, 2000), “La Evaluación del Seguro Básico de Salud” (Evaluation of the Basic Health Insurance) (URS-MSPS/World Bank, 2000) and the “Evaluación de los Compromisos de Gestión 2000” (Evaluation of Commitments of the Year 2000) (PHO/WHO, 2000)
- 6 Neonatal mortality (NM): Covers children who die before they are 28 days old.
- 7 Infant mortality (IM): Covers children who die before they are 1 year old.
- 8 Child mortality (CM5): Covers children who die before they are 5 years old.
- 9 Early neonatal mortality (ENM): Covers children who die before they are 7 days old.
- 10 Trained staff. Health Staff (doctor, nurse, assistant nurse, communal health worker, traditional midwife) who was trained in: attendance of normal non-risk deliveries, recognition of complications during childbirth, the start of treatment and/or referral to health centers or hospitals in case more specialized health care is required.
- 11 Level of marginality: classification obtained according to the Poverty Map
- 12 Perinatal mortality: Covers children who die between 28 weeks of gestation and the first seven days of life, including stillborns.
- 13 This wish to show fertility of the women to the community by means of pregnancy diminishes and even disappears as the size of the family increases, especially in the woman.
- 14 The configuration of the individual as a person in the Andean community is a slow process that starts when the person is born until he/she forms a new family (Carter and Mamani, 1982).
- 15 “Manteo”: Andean obstetric technique, with the objective of putting the fetus in the correct cephalous position before he/she is born. Two to four people are needed, they put the pregnant woman on a blanket, preferable leaning on her shoulder. Then they move (toss) the blanket in soft lateral, circular upward and downward movements. they move both the woman and her

- fetus.
- 16 “Sobada”: Lowland obstetric technique, in which the pregnant woman’s belly is massaged to move the fetus to the cephalous position. The massage is done using oils during various consecutive days. the “Sobada” technique has two additional benefits: physical relaxation and affective support for the pregnant woman (Hutter-Coelho, U and Waldmann, A, 1998).
- 17 “Sahumerio”: in this Andean practice, the person is exposed to the incense of selected herbs with supposedly medicinal effects.
- 18 This is another element that is contrary to the traditional system where women “are made to undress” so “she gets cold”.
- 19 This is one the differences with the institutional health system where normally deliveries are horizontal.
- 20 “Sobreparto” (Confinement after childbirth) has two meanings: the first refers to the “relapse” of the woman, who “falls ill again”. It is important to mention that for women in both the Andean and lowland area, pregnancy is considered “a disease”, and that they can “relapse” as they are exposed to cold or cold water after giving birth. The second meaning refers to an “infection” and according to descriptions supplied by women themselves, this seems to be very similar to “puerperal sepsis” (temperature, indisposed, abdominal pain, chill, bad smell of genitals).
- 21 “Aguayo”: woven cloth made on a traditional Andean loom, generally with a compact woven structure and of different colors.
- 22 “Mate”: infusion made of medicinal herbs.
- 23 El Alto: I, II-III, IV, V-VI.
Cochabamba: Metropolitano Norte, Metropolitano Sur, Quillacollo, Carrasco Tropical
Chuquisaca: District I Rural (Chuqui Chuqui, Potolo, Poroma), Districts of Norte and Sur Cinti (Camargo and San Lucas).
Potosí: Urban Rural I, District VII (Uyuni),
Beni: Riberalta, Guayaramerin
Oruro: Urban, Toledo and Eucaliptus
- 24 This number corresponds to private services that supply the SNIS with information, which implies a serious under-registration.
- 25 The institutional health system is composed of all health institutions in the following subsectors: public (hospitals, centers and posts that depend on the Ministry of Health), the private subsector (private doctor’s offices and private clinics, NGOs and Church) and social security (health funds).
- 26 In Bolivia, the concept of a norm encompasses general health care guidelines, as well as specific clinical protocols.