

Newborn Health in the Philippines

A Situation Analysis



 **BASICS II**



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ACRONYMS

ADB	Asian Development Bank
AusAid	Australian Aid
BHS	Barangay Health Station
BHW	Barangay Health Worker
BHV	Barangay Health Volunteer
CBHP	Community Based Health Program
CFEH	Center for Family and Environmental Health
CMR	Child Mortality Rate
DOH	Department of Health
ECCDP	Early Childhood Care and Development Project
EU	European Union
FHSIS	Field Health Service Information System
FNRI	Food and Nutrition Research Institute
FPS	Family Planning Survey
GDP/GNP	Gross Domestic Product/ Gross National Product
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
IUGR	Intrauterine Growth Restriction
IMCI	Integrated Management of Childhood Illnesses
IMR	Infant Mortality Rate
JICA	Japan International Cooperation Agency
KFW	Kreditanstalt für Wiederaufbau
LBW	Low Birth Weight
LGU	Local Government Unit
MBFHI	Mother-Baby Friendly Hospital Initiative
MCHS	Maternal and Child Health Survey
MMR	Maternal Mortality Ratio
MICS	Multiple Indicator Cluster Surveys
NCR	National Capital Region
NDS	National Demographic Survey
NGO	Non-Governmental Organization
NHDS	National Health and Demographic Survey
NMR	Neonatal Mortality Rate
NNS	National Nutrition Survey
PAP	Perinatal Association of the Philippines
PHEX	Philippine Guidelines on Periodic Health Examinations
PHP	Philippine Peso
PHS	Philippine Health Survey
PMR	Perinatal Mortality Rate
POGS	Philippine Obstetric and Gynecologic Society
PPS	Philippine Pediatric Society
PVO	Private Voluntary Organization
RHU	Rural Health Unit
STABLE	Sugar, temperature, artificial breathing, blood pressure, lab work, emotional support
STI	Sexually Transmitted Infection
TBA	Traditional Birth Attendant
U-5MR	Under-Five Mortality Rate
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WB	World Bank
WHO	World Health Organization
WHSMP	Women's Health and Safe Motherhood Program
YAFS	Young Adults Fertility and Sexuality Survey

PREFACE

Our best estimates indicate that almost 8,000 newborns under the age of 28 days die each year in the Philippines. According to the Philippine Health Statistics 1998, newborn problems account for over 30% of all deaths in the first year of life. So far, these deaths have failed to draw sufficient attention from policy makers, donor agencies, and health services, compared to the large portion of child mortality they represent.

We know that the survival and health of the majority of newborns can be greatly improved by relatively simple measures. We can improve the health and nutrition of mothers, which will have a beneficial impact on the baby. We have the technical knowledge to provide antenatal care and a clean, safe delivery. We have well-developed interventions to promote early, effective, and frequent breastfeeding, other components of essential newborn care and early immunization.

Yet too many newborns continue to die. What are the conditions, therefore, that sustain the high mortality rate? What existing efforts can be expanded and effectively focused to save more newborns and improve their health? What gaps need to be filled?

This analysis of the situation for newborns in the Philippines brings together what is known about the health of newborns, and the direct and indirect causes of their deaths and disability, including the contributions of the poor health of their mothers. It identifies the structures in place – government and community – and available interventions. It identifies critical gaps in newborn and maternal health services and suggests a set of priorities for action to extend and strengthen them.

The aim is to provide greater access to this information to help the staff of USAID, with its projects, field missions, and partners, to plan effective programs and mobilize additional resources to improve the lives of newborns in the Philippines.

The Millennium Development Goal is to reduce by two thirds the mortality of children under five years old.

Public health experts predict that, **unless neonatal mortality is at least halved, this goal will not be met.**

1. INTRODUCTION

Four infants out of a thousand live births in the Philippines die before they reach their first month of life. The almost 8,000 newborn deaths account for more than 30% of all infant deaths in the first year.

Deaths during the first week of life are mostly due to conditions originating in pregnancy or during childbirth. They are a result of inadequate or inappropriate care during pregnancy, childbirth, or the first critical hours after birth.

After the first week, deaths are mostly due to infections acquired after birth, either at the health facility or at home. Most neonatal deaths, whether during the period immediately after birth or later, can be avoided with low cost interventions that do not require sophisticated technology.

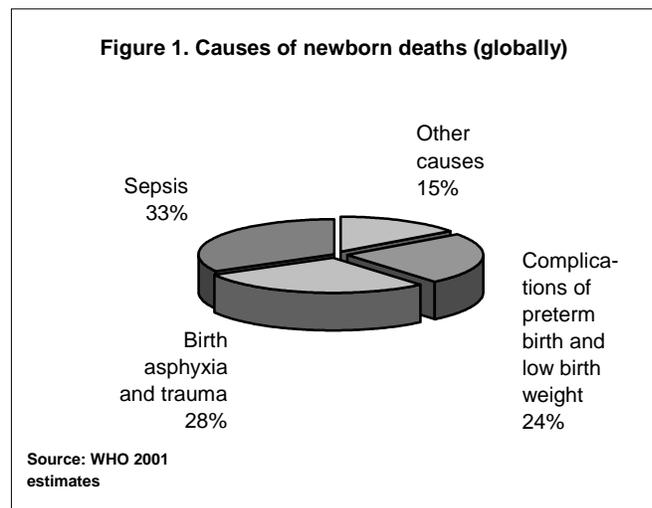
Why newborns die

According to the World Health Organization (WHO), the major *direct cause* of newborn deaths globally is neonatal infection or sepsis, which is responsible for about 33% of newborn deaths. Sepsis includes conditions such as septicemia, meningitis, pneumonia, tetanus, and congenital syphilis. Birth asphyxia and trauma account for another 28% of neonatal deaths, and congenital malformations for another 10%.

Although low birth weight and prematurity are not direct causes of death, complications resulting from them account for 24% of neonatal deaths. As the birth weight increases, mortality declines. Some of the conditions noted may also contribute to a life-long disability of those infants who survive.

Other influences on newborn health

Several *indirect factors* affect the newborn's chance for survival and health. The most important of these are maternal conditions that present risks to a newborn: the mother's age at first pregnancy (greater risk before 20 years or after 35 years of age), child spacing (less than 3 years since last birth), the mother's poor nutritional status, her own illness and – important, but less directly – her level of literacy.



Inadequate health care is another factor. The capacity of the health system to respond to the needs of mothers and newborns is substandard and unevenly distributed throughout the Philippines. Access to care can be a major constraint, particularly for poor and marginalized groups of the population – the ones whose burden of ill health is the highest. Only 64% of women received antenatal care in three or more visits in the Philippines (Field Health Service Information System [FHSIS] 2000). About 72% of deliveries occur outside of health facilities, frequently without the assistance of a skilled birth attendant, and many deliveries do not meet the minimal conditions for

early essential newborn care (WHO, 2001). In many areas of the Philippines, women do not have access to an adequately equipped health facility with a trained care provider to handle emergency complications during pregnancy, delivery and the post partum period.

The underlying conditions of poverty contribute to higher mortality in both rural and dense urban areas of the country. Government expenditures for health care are quite low (only 3.5% of GNP) and are inadequately distributed to those whose needs are greatest, especially in rural areas.

2. THE NATIONAL CONTEXT

The conditions of the Philippines – its growing population and its struggling economy – provide a context to the challenges facing families in bringing healthy newborns into their lives and to their government, which has the mandate to serve them.

The people

Population. The Philippines, an archipelago of over 7000 islands, is one of the most populous countries in the world for its size. The population will reach more than 82.6 million in 2004, with about 2 million births. The annual population growth in the period 1995-2000 was 2.36%, higher than that of its neighbors, Indonesia and Thailand.

The population is predominantly young, with 38% of its individuals under 15 years of age. Females in the reproductive age comprise about 23% of the total population. The male to female ratio is roughly 1:1.

The overall population density is 252 people per square km. Much of the population is dispersed, with 52.4% of the people living in rural areas. Urban migration and overpopulation, however, have resulted in severe urban overcrowding. As a result, for example, Metropolitan Manila's population density is 16,051 people per square km. (Philippine Health Care Factbook, 2002).

Instead of modernization spreading from the center, 'rurban' areas at the transition between rural and urban centers have sprung up. These areas draw more and more people to the fringes of already overtaxed urban centers (National Objectives for Health Philippines, 1999).

Culture and religion. The Philippines contain at least 110 ethno-linguistic groups. Most Filipinos are bilingual, speaking both Filipino and English or any of the other local dialects. Indigenous people account for about 18% (13 million) of the population. Socio-cultural barriers to health are prevalent and more apparent in indigenous communities. The functional literacy rate is 88.4% in urban areas, while it is 79.1% in rural areas (National Objectives for Health Philippines, 1999). The Philippines is the only predominantly Christian country in Asia, with the majority being Roman Catholic.

The economy

The annual per capita income is about US\$ 1,040 (The State of the World's Children 2003). This presents a somewhat distorted picture, however, as the Philippines has one of the highest levels of income inequity in Asia. The poorest 20% of the population accounts for only 5% of total income or consumption. The annual per capita poverty

Access to health facilities with skilled obstetric and newborn care is difficult for large numbers of women in rural, indigenous, island and war-torn populations. In remote areas, mothers often have to travel on foot for several hours or on small sea craft to reach ill-equipped and understaffed local Barangay Health Stations.

threshold was PHP 11,388 in 1998 (about US\$ 206), with one in every three households (37%) below the poverty line (National Objectives for Health Philippines, 1999). The high population growth, together with frequent natural disasters, has limited and will continue to limit efforts to fight against poverty.

The economy has had only modest growth over the past few years. It is plagued by frequent natural disasters, geographic inequity, and political instability. Some of its neighbors have gradually overtaken the Philippine economy – first Korea and Taiwan, then Thailand, and more recently China.

The traditional agricultural economy, growth in the service sector, and the deployment of skilled workers overseas have buffered the Philippines somewhat from the impact of the Asian economic crisis. The deployment of family members overseas, while bringing hope to many, has spawned new problems, including the greater fragmentation of families and increased risks for HIV/AIDS.

Health care

Meeting the needs of a rapidly growing population, with many dispersed over thousands of islands while others gather in overcrowded and poor urban settings, is a challenge to the Government of the Philippines. It is especially difficult to provide accessible, quality health services.

Unfortunately, in the face of these challenges, the total government expenditure for health was only about 2.2% of the total budget in 2000. It has remained a low 3.5% of the GDP, well below the 5% recommended by the World Health Organization for a developing country.

Access to health facilities and skilled obstetric and newborn care is particularly difficult for the large numbers in rural, indigenous, island and war-torn populations. The migration of nurses, doctors, and caregivers – a ‘brain drain’ – continues to aggravate the shortage and poor distribution of skilled human resources.

In the overpopulated urban centers, especially in the National Capital Region (NCR), health facilities and obstetric and pediatric care are physically more accessible. However, mothers and their newborns in urban areas face different threats to health. The working poor and young and multiparous mothers have to compete with limited resources. As a consequence, the percentage of NCR mothers with three or more prenatal visits (58.5%) is even lower than the national average (64.8%) (FHSIS 2000). Declining exclusive breastfeeding rates in the face of market forces and changing lifestyles for women and their families are seriously compromising the chances of their newborns to survive in congested, polluted urban environments. Testimonies to these threats are the low birth weight, neonatal mortality, and infant mortality rates of the NCR which are, paradoxically, the highest among all the regions of the Philippines (see Tables 1 and 2).

3. THE SURVIVAL AND HEALTH OF INFANTS AND NEWBORNS

The available data on maternal and child health in the Philippines are inadequate, and on infant and newborn health even more so. National and community based data on causes of neonatal mortality are not available. It is difficult to describe well the status of infants and newborns when babies are usually delivered at home, contact with the health system before and after delivery is limited, and vast distances often separate women and their infants from trained health providers.

The sketchy picture of contributions to newborn deaths comes from regional surveys, hospital data, and special studies. The information collected is often not comparable for looking at trends across years. Even a sketchy picture, however, identifies many vulnerabilities through pregnancy, delivery, and the first days of a baby's life. It also points to significant inequities across the Philippine geography, and across social and economic groups.

Child and infant mortality

Over the last decade, the *under-five mortality rate (U5MR)* has declined. The 1998 NDHS reported a fall from 54 deaths per 1000 births in 1988-92 to 48 in the period 1993-97. According to The State of the World's Children (2003), the rate declined by 42%, from 66 childhood deaths per 1000 live births in 1990 to 38 in 2001. Nevertheless, the Philippines still ranks 88 among countries in under-five mortality (The State of the World's Children 2003). In addition, the U5MR in the poorest quintile (79.8) is more than 2.5 times that of the richest quintile (29.2). (Gwatkin et al., World Bank, 2000. See Table A3 in the Appendix.)

Overall, the *neonatal mortality rate (NMR)*, within the first 28 days, declined from 5 per 1,000 live births in 1991 to 4 per 1,000 live births in 1995. In 2000, the *infant mortality* (for children up to age 1 year) was 12.3 deaths per 1000 live births (Table 1). While the information is from two different time periods, it nevertheless reveals great regional differences. The highest mortality rates for both infants and newborns are concentrated in the urbanized National Capital Region (Table 1).

Table 1. Neonatal and infant mortality rates in the Philippines by region (selected years)

Region	NMR * (1995)	IMR ** (2000)
Philippines	4	12.3
Region 1	2	12.3
Region 2	2	10.3
Region 3	3	7.3
Region 4	4	12.4
Region 5	4	15.4
Region 6	4	14.1
Region 7	5	11.5
Region 8	5	10.7
Region 9	4	11.8
Region 10	2	9.3
Region 11	2	9.3
Region 12	3	7.3
CARAGA	5	11.1
National Capital Region (NCR)	6	19.4
Cordillera Administrative Region (CAR)	4	12.6
Autonomous Region of Muslim Mindanao (ARMM)	1	7.9

Source: FHSIS 2000 in the Philippine Health Care Factbook

* NMR – Neonatal Mortality Rate, the annual number of deaths in babies up to 28 days per 1000 live births

** IMR – Infant Mortality Rate, the annual number of deaths of infants up to the age of 1 year per 1000 live births

In contrast, alternative data from the 1998 NDHS found the IMR in Region VIII (60.8) to be the highest, followed by ARMM (55.1), CARAGA (53.2) and XII (48.4), while the IMR in the

National Capital Region (23.6) was reported as the lowest. In this survey, the national IMR was reported as unchanged at 35 per 1000 live births.

Some *hospital* statistics indicate a perinatal mortality rate as high as 64.5 per 1000 hospital births (Philippine Obstetrical and Gynecologic Society [POGS]CNS Statistics, 2001). A report from 103 of 129 accredited hospitals nationwide in 2001 found an average newborn mortality rate of 20.32 per 1000 hospital births. These rates, substantially higher than the national death rates, are probably because of the higher-risk population that delivers in hospitals (Philippine Obstetrical and Gynecologic Society CNS Statistics, 2001) and the likely under-reporting of newborn deaths at the community level.

Contributions to mortality

It is difficult to gather information on deaths and morbidity that could lead to disability, when most deliveries occur at home. From available data (Table 2), however, close to half of all deaths under one year of age each year in the Philippines are due to respiratory conditions of the fetus and newborn (20.3%), pneumonia (16.4%), congenital anomalies (11.2%), birth asphyxia and birth injury (5.4%) (FHSIS 2000). Causes of death are recorded somewhat differently from those noted by WHO, suggesting a need for uniformity in reporting causes of death across countries.

There are no national data regarding neonatal deaths due to sepsis and asphyxia, and there are widely acknowledged regional and even center-to-center differences in overall and cause-specific mortality rates. Data from an urban government hospital indicate that about 30% of all newborns with sepsis and about 34% of all asphyxiated newborns die (Annual Statistics of the Philippine General Hospital, 2002).

In congested and understaffed urban government facilities, with higher risk populations, the causes of newborn mortality differ slightly. In 2002, newborn infections (sepsis) accounted for the majority of deaths (58.8%) at one such facility. Complications of prematurity and birth asphyxia and injury accounted for another 29.8% (Annual Statistics of the Philippine General Hospital, 2002).

Mortality and morbidity data from deliveries in one Philippine hospital, 2002

Major causes of death in newborns:

- Sepsis (58.8%)
- Complications of prematurity and birth asphyxia and injury (29.8%)

Major causes of disability in newborns:

- Jaundice (25.6%)
- Sepsis (24.2%)
- Transient difficult breathing (14.9%)
- Pneumonia (9.6%)
- Lung complication of prematurity (9.2%)

*Annual Statistics
of the Philippine General Hospital, 2002*

Table 2. Top ten causes of mortality in the first year of life in the Philippines (2000)

Cause	Rate	Percentage
Respiratory conditions of the fetus and newborn	3.1	20.3
Pneumonia	2.8	16.4
Congenital anomalies	1.9	11.2
Birth asphyxia and injury	0.9	5.4
Diarrheal diseases	0.9	5.3
Septicemia	0.6	3.7
Meningitis	0.3	1.6
Other diseases of the respiratory system	0.3	1.6
Avitaminosis and other nutritional deficiencies	0.2	1.3
Measles	0.2	0.9

Source: FHSIS 2000

There are significant differences in infant mortality rate (IMR) across socioeconomic quintiles, according to reports from the World Bank (Gwatkin et al., 2000). The IMR in the poorest quintile in the Philippines (48.8) is more than double that of the richest (20.9). Infant and under-five deaths are lower for females than for males across all quintiles, except the middle. Paradoxically, except for the richest quintile, children residing in rural areas fared better in 1998, with the infant and under-five mortality rates lower than their urban counterparts. (See Tables A3 and A4 in the Appendix). Poor family resources and the growing impoverished urban environments are well linked to poor health and higher death rates.

In the face of many risks to newborns, interventions to prevent early death and poor health do exist. Lower respiratory and diarrheal conditions can be prevented (Dabis, et al, Working Group on Women and Child Health, 2002). Improved obstetric care, essential newborn care and some specific components such as folic acid supplementation, antenatal steroids can have a substantial impact on neonatal problems.

Neonatal morbidity

National data on the morbidity of newborns are not gathered. In 2002, however, a large urban government facility identified the top five causes of morbidity among newborns: 1) jaundice (25.6%), 2) blood-borne infection or sepsis (24.2%), 3) transient breathing difficulty in the newborn (14.9%), 4) pneumonia (9.6%), and 5) lung complications of prematurity (9.2%). Collectively these five conditions accounted for almost 80% of newborn problems in the hospitalized newborn (Annual Statistics of the Philippine General Hospital, 2002).

Low birth weight infants

Various sources of information provide a range of estimates on low birth weight (LBW) infants from 11% to 47% of live births.

Using the cut-off of less than 2.5 kg, the LBW rate was reported by the Government to be 14% of live births in 1998 (Table 3). The LBW rate is 15.1% of hospital live births, as reported by the Philippine Obstetrical and Gynecologic Society CNS Statistics (2001). In a prospective community-based survey of 2,139 births in Cebu, for which actual birth weight and gestational age data were available, 20% were classified as growth retarded and 12% were LBW (Adair, 1989). A community-based survey in 1999 found the LBW of 10.7% (Multiple Indicator Cluster Survey [MICS], 1999). An international data source reported that the average LBW from 1995-2000 was 18%, roughly double that of Indonesia (9%), Malaysia (9%), and Thailand (7%) during this same period. (The State of the World's Children 2003. See Table A2 in the Appendix.)

Despite the urban concentration of facilities and trained health workers, the National Capital Region consistently has the highest LBW rates. In 1998 its LBW rate was 47%, compared to the next highest, Region 2, at 31%. This may be a manifestation of the social inequities in the urban poor, their isolation from traditional support systems, challenges to the mother's good health and proper care in the congested environment, and the effects of the changing lifestyles of families in transition from a rural to urban society.

Table 3. Low birth weight (LBW) infants in the Philippines by region (1998)

Region	Percentage
Philippines	14
Region 1	5
Region 2	31
Region 3	10
Region 4	7
Region 5	7
Region 6	11
Region 7	10
Region 8	8
Region 9	10
Region 10	10
Region 11	12
Region 12	16
Caraga	14
National Capital Region	47
Cordillera Administrative Region (CAR)	7
Autonomous Region of Muslim Mindanao (ARMM)	7

Source: FHSIS 1998 in the Philippines Health Care Factbook

In the interpretation of LBW data several problems exist. First, as many as 34.3% of newborns are not weighed at birth, according to the MICS survey in 1999. This challenges the information on low birth weights, particularly for infants born at home in rural regions. Second, current LBW rates cannot be accurately compared to LBW rates prior to 1996. At that time, newborns with unknown birth weights were included in the total live births. Starting in 1996, these newborns were deducted from the total live births. Finally, some experts believe that a cut-off of 2.5 kg may be inappropriate for the racially and genetically smaller Filipino newborns. In 1999, a cross-sectional survey involving 43,217 newborns, systematically sampled from 30 *hospitals* across 16 regions, showed that the centile weights of Filipino newborns were significantly lower than the weights of American newborns (Isleta et al., 1999). The results of new studies on birth weights and growth referencing should help to clarify this technical question.

No national data on the causes and outcomes of low birth weight infants exist. Instead, in a retrospective study of 348 LBW infants in an urban government hospital, 260 (75%) were premature and 118 (both full term and premature) were small for gestational age. These LBW newborns were at the highest risk for sepsis, death, slow growth, neurological handicap, and cerebral palsy (Cifra et al., 1987). In 2002, data from the same government hospital showed that about 83.5% of all infants with birth weights less than 1000 grams died. Deaths rates for the 1000-1499 gram and 1500-2499 gram infants were about 33.7% and 4.5% respectively (Annual Statistics of the Philippine General Hospital 2002).

Low birth weight infants have the greatest risk for sepsis, death, slow growth, neurological handicap, and cerebral palsy.

Breastfeeding

According to the 1998 NDHS, almost all Filipino babies (88%) were breastfed for sometime, median duration of 13 months. Supplementation of breastfeeding with other liquids and foods occurs too early in the Philippines. Among infants less than 2 months of age, 19% were already receiving supplemental foods or liquids other than water.

In 1993, the National Health and Demographic Survey (NHDS) reported that only 4 in 10 newborns were exclusively breastfed, and most infants were breastfed only 1 to 5 months. Further, infants born in health facilities were less likely to be breastfed (77%) than those born at home (91%).

The Rooming-In and Breastfeeding Act (1992) for hospitals and health facilities and the Code of Marketing of Breastmilk Substitutes (1996) were enacted to improve breastfeeding practices. The Philippines is one of seven countries that have established formal monitoring of the WHO Code of Ethics. Unfortunately, implementation with effective monitoring has been difficult, weakening the results of the policies. In the period 1995-2001, the percentage of infants who were exclusively breastfed up to the recommended age of 6 months was only 37%, slightly lower than rates found in the 1993 survey (The State of the World's Children 2003).

Breastfeeding in the Philippines

- Only 37% of infants up to age 6 months old were exclusively breastfed (1995-2001)
- The National Capital Region has the lowest rate of exclusive breastfeeding (1999)

Regional data from a government field survey in 1999 (see Table 4) show that the National Capital Region has the lowest exclusive breastfeeding rate up to age 4 months (Philippine Health Care Factbook, 2002). Possible factors contributing to this low urban rate may include a greater proportion of working mothers, backsliding in the Mother-Baby Friendly Hospital Initiative, and exposure to marketing information about breastmilk substitutes. Whether or not this low exclusive breastfeeding rate is partially responsible for the higher IMR in the NCR is an issue that should be studied.

Table 4. Infants exclusively breastfed up to age 4 months by region in the Philippines (1999)

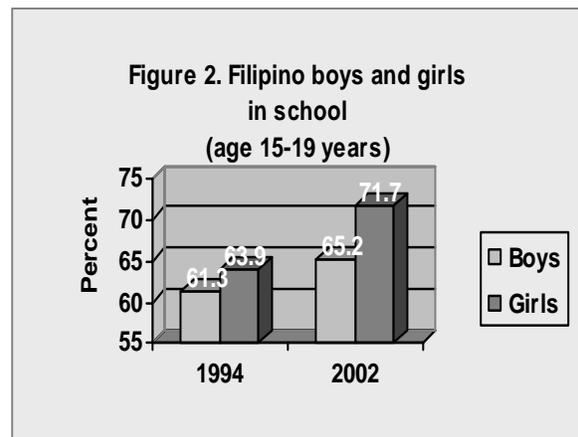
Region	Exclusively breastfed (%)
Philippines	86.4
Region 1	88.1
Region 2	93.4
Region 3	89.8
Region 4	84.8
Region 5	89.7
Region 5	82.0
Region 7	86.3
Region 8	93.3
Region 9	94.5
Region 10	91.2
Region 11	-
Region 12	-
CARAGA	90.4
National Capital Region (NCR)	71.6
Cordillera Administrative Region (CAR)	82.2
Autonomous Region of Muslim Mindanao (ARMM)	87.5

Source: FHSIS 1999 in the Philippines Health Care Factbook

The girl child

Filipino girl children are at greater risk of malnutrition (including micronutrient deficiencies), sexual abuse and exploitation, and earlier parenthood than boys.

However, relative to boys, the situation for girls is better in other ways. Girls appear to have higher rates of simple or functional literacy and greater participation in community organizations. More girl children 15 to 19 years old are in school (71.7%) than boys (65.2%), and this number has been increasing since 1994 (Figure 2). Compared to boys, girls have a lower incidence of substance abuse, and a smaller proportion of girls are classified as working children.



Source: Young Adults Fertility and Sexuality Survey (YAFS)

Legislation guaranteeing non-discrimination on the basis of gender exists, including the 1987 Constitution, the New Family Code, and the Women in Development and Nation Building Act. Poor monitoring and enforcement of these laws, however, continues to be a hindrance towards realizing the full equality of girls (Situation of Children and Women in the Philippines, 1997).

HIV/AIDS

While the WHO estimates worldwide are staggering, HIV infection in the Philippines has been described as 'low and slow' with a prevalence of 0.04% among adult Filipinos. (Dominguez CE, Saniel MC, Maligat RA, 2001. See Table A1 in the Appendix.) There are doubts, however, as to the accuracy of the AIDS Registry numbers, and there may be a substantial underestimation of the overall prevalence of HIV.

From January 1984 to June 2003, there were 1,892 HIV Ab seropositive cases reported, of which 38% were women, most within the 20-39 years age group. Overseas Filipino Workers (OFW) are a high risk group, comprising 32% of cases thus far. Sexual intercourse, mainly heterosexual, is the predominant mode (86%) of transmission reported. Perinatal, mother to child, mode of transmission was reported in 27 (1.5%) of the 1,892 cases (website: <http://www.doh.gov.ph>).

Hepatitis B

The Philippines is considered hyperendemic for Hepatitis B, with a 55-68% exposure rate based on serological detection of at least one HBV marker. Approximately 20% of HBs Ag carriers are also positive for HBe Ag. Among 929 pregnant patients screened in an outpatient clinic, a prevalence rate of 3.9% was reported (Comia et al., 1999).

Vertical transmission, mother to child, is the most important route of hepatitis in Asia. The risk of becoming HBs Ag positive is about 20 to 30 times higher for infants born to positive than negative mothers. The risk is even higher if the mother is a carrier of both HBs Ag and HBe Ag. However, the risk of transmission is low if the mother is an HBs Ag carrier and anti-HBe positive (Domingo et al., 1987; Lingao, et al., 1989). Unfortunately, despite recommendations for routine prenatal HBs Ag screening, this is not universally done. In the absence of a national policy, a handful of

urban nurseries do universal Hepatitis B (active) vaccination at birth, regardless of maternal serologic status.

Care seeking after delivery and for the newborn infant

Under the Safe Motherhood Program, the postpartum mother together with her newborn should have at least two postpartum visits one month apart for: 1) proper cord care, 2) newborn screening, 3) identification and management of problems in mothers and newborn in the first 24 hours, 4) immediate and safe referral of cases needing higher level care, 5) initiation of exclusive breastfeeding, 6) counseling and health promotion on exclusive breastfeeding, 7) family planning, 8) micronutrient supplementation, 9) counselling on personal hygiene and care of the newborn, 10) BCG immunization, and 11) complete assessment of the newborn using the Growth Monitoring Chart. The first postnatal visit should be done one week after delivery.

Coverage of care for the newborn during the first critical days of life is insufficient. There is a lack of appropriate and accessible facilities for emergency newborn care and poor awareness in health seeking behavior. Where hospital and health facilities do exist, the quality of newborn care is often poor and limited. A survey of 99 hospitals and 46 health facilities found that 97 (almost 100%) of the hospitals but only 39 (85%) of the health facilities provided newborn care. Specific essential services were not available in many of these facilities. Newborn immunization was available in only 68 (69%) of hospitals and 38 (83%) of health facilities. Only 28 (28%) of hospitals and 6 (13%) of health facilities provided newborn screening. Well-baby care existed in only 76 (77%) of hospitals and 35 (76%) of health facilities. Services for the sick baby were available in only 70 (71%) of hospitals and 36 (78%) of health facilities (Festin et al., 2000).

In another survey, only six in ten women with surviving children below the age of 3 years consulted someone for postnatal care. Approximately half (51.7%) of those who had postnatal care consulted a doctor. More than a third (37.1%) saw a nurse or midwife, and about one in every ten (10.8%) went to a *hilot* or traditional birth attendant (TBA). Although nurses and midwives were, in general, the most common providers of postnatal care (48.0%), doctors were the leading providers of this care in urban areas (66.9%). During postnatal care visits, the most frequent service was a check-up for the baby (Maternal and Child Health Survey, 2000).

Unfortunately, data on care seeking for the sick newborn at the time of the first visit at the health facility or at home are not available, a symptom of a very serious gap in health services. Sick newborns are commonly brought either to a TBA or to a local barangay health station, where the highest level staff may be a rural health midwife. 'Well baby check-ups' at barangay health stations are usually for vaccinations. At this level of health facility, the opportunities provided by vaccination visits for examining the baby, history-taking and providing advice on nutrition, child development and other preventive health care are commonly missed. For feeding problems, many mothers consult friends and family; advice often may be either erroneous or conflicting.

Summary:

Gaps in newborn health

Status of newborns

- High neonatal mortality rates
- High LBW rates
- High rates of preventable morbidities, including infections, birth asphyxia and respiratory distress

Conditions affecting newborn health

- Low exclusive breastfeeding rates
- Difficult, risky neonatal transport
- Weak/absent functional referral system
- Lack of effective activities to address other components of essential newborn health

4. MATERNAL HEALTH

The infant's survival is closely linked to the health and nutritional status of the mother, her ability to space the births of her children, and the care she receives during pregnancy, child birth and the postnatal period.

Demographic factors

The crude birth rate has been declining since 1970, when it was 40, to 27 in the year 2000. The total fertility rate (births per women age 15-49) of 7.0 in 1960 has been reduced by half to 3.4 by 2001. Across socioeconomic quintiles, the crude fertility rate was highest in the poorest socioeconomic quintile (6.5), almost 3 times the rate in the richest quintile (2.1). The high birth rates ensure the greater vulnerability of the poorest mothers during their pregnancy and delivery, and increase the risks for their infants. (See Table A3 in the Appendix.)

The average age of initiation to sex is 17.5 years (2002). The number of youth who have had sex before age 15 has increased eight-fold from less than 2% in 1994 to around 16% in 2002. One-third of women age 20-24 years have already given birth to their first child before reaching their 21st birthday (YAFS 2). Teenagers who have begun childbearing are increasing from the 9% reported in 1993 to 11% in 1998 (National Demographic Survey, 1993 and 1998). Worth noting also is that at age 18, 10% of girls are already mothers; at age 20, 25% are mothers; at age 24, 50% are mothers. One third of Filipino young women already have 2-3 children.

Maternal mortality

Mothers have not fared well in the midst of other advances in health. During their lifetime, Filipino women are at a one-in-100 risk of dying of pregnancy-related causes. The maternal mortality ratio (MMR) has been creeping up, from 59 to 64 per 100,000 live births in the period from 1995 to 1998 (National Demographic Health Survey, 1998). Pregnancy-related deaths account for about 14% of all deaths of women aged 15-49 years.

Nationwide data from accredited hospitals, indicate that the top causes of obstetric deaths are: hemorrhage (33.6%), hypertension (24.7%), infection (9.9%) and vascular accidents (3.28%) (Philippine Obstetrical and Gynecologic Society CNS Statistics, 2001). Six million of the estimated 14 million women, 15-49 years old, are considered high risk. They are too young (in their teens) or too old (above age 40 years), have had four or more pregnancies, have less than 15 months interval between births, or are poorly nourished or otherwise unhealthy (Situation of Children and Women in the Philippines, 1997).

Factors contributing to these deaths include closely spaced pregnancies, poor prenatal care, inadequate systems for detecting and managing high-risk pregnancies, an inadequate referral system, inadequate competence of birth attendants, and poor nutrition. Although illegal, abortions cause considerable morbidity and mortality. Statistics are highly inaccurate, but estimates range from 155,000 to 750,000 abortions done annually. Abortion is consistently reported as one of the top 3 causes of maternal admission in major public hospitals (Situation of Children and Women in the Philippines, 1997). They are ranked fourth in the causes of hemorrhage with an average rate of 7.2% (Philippine Obstetrical and Gynecologic Society, 1985-1994).

Table 5. Maternal mortality ratio (MMR) per 100,000 live births in the Philippines by region (1998)

Area	MMR
Philippines	64
Region 1	38
Region 2	35
Region 3	21
Region 4	51
Region 5	107
Region 6	72
Region 7	48
Region 8	104
Region 9	114
Region 10	62
Region 11	61
Region 12	105
CARAGA	115
National Capital Region (NCR)	45
Cordillera Administrative Region (CAR)	48
Autonomous Region of Muslim Mindanao (ARMM)	173

Source: FHSIS 2000 in the Philippine Health Care Factbook

As with other indicators, there are large regional differences. In 1998, ARMM, CARAGA, Region 9 (Western Mindanao, including Tawi-Tawi, Basilan and Sulu) and Region 5 (the Bicol region) had the highest MMRs. Relatively politically stable and richer Region 3 (Central Luzon) had the lowest maternal mortality ratio (Table 5).

The MMR in the Philippines is lower than that of India, Indonesia, and Vietnam but higher than Thailand's, all of which experienced increases in MMR in those years. (See Table A1 in the Appendix.)

Maternal nutrition

The nutritional status of the mother is closely associated with the health of the newborn, including whether the newborn is carried to full term and its weight at birth. Based on the weight for height reference standard for Filipino pregnant women, 14.7% were classified as nutritionally at risk. Teenage pregnant women, age less than 20 years, were at higher risk due to poor nutrition (18.4%), compared to those over 20 years of age (14.3%) (Food and Nutrition Research Institute Nutrition Survey, 1998). In 1993, the FNRI nutrition survey found that 43.6% of pregnant and 43.0% of lactating women suffered from iron deficiency anemia. The Fourth National Nutrition Survey (NNS) reported that, among 778 pregnant women, 23% had goiter, which suggests that even more women suffer from an iodine deficiency disorder not yet indicated by goiter.

Other health conditions

Malaria is endemic in the Philippines. In the year 2000, a total of 6,827 cases were reported from all regions (FHSIS 2000), and there is a national Malaria Control Program. An impregnated bednet is listed in the needs of the WHO Program on Integrated Management of Pregnancy and Childbirth. Although women and children under the age of 5 years are priority recipients of

bednets, only 65% of households in endemic areas have at least one mosquito net. Among indigenous communities and extremely poor areas, however, ownership is almost zero (National Objectives for Health, 1999). Moreover, even if impregnated nets are distributed, many mothers have their schoolchildren use them. The Intermittent Preventive Therapy (IPT) Program of the Department of Health recommends weekly chloroquine (30 mg) prophylaxis for 9 months plus sulphadoxine-pyrimethamine in single doses in the 2nd and 3rd trimester. Although IPT during antenatal care visits has been shown to substantially reduce the risk of maternal anemia and low birthweight in the baby, compliance of both medical practitioners and pregnant women is still perceived as low (no field data on compliance are available).

Data on puerperal sepsis are available from a field survey of 2,336 respondents, 7% of whom had puerperal fever (Festin et al, 2000). The incidence of puerperal sepsis in hospitals was reported to be 0.08% (POGS CNS, 2002).

Care at Delivery

The World Health Organization reports that only 28% of deliveries occur in health facilities (72% outside of health facilities) and that only 53% of deliveries have a skilled attendant (NDHS 1998). Government field data (FHSIS 2000) showed that only 69% receive assistance at delivery from a doctor, nurse, or midwife; and 31% are assisted by TBAs (*hilots*). Moreover, there are large regional disparities in patterns of delivery care (Table 6).

Table 6. Attendance at deliveries in the Philippines, by region (2000)

Area	Total deliveries	Doctors (%)	Nurses (%)	Midwives (%)	Trained TBA (%)	Untrained TBA (%)	Others (%)
Philippines	1,704,966	26.8	1.5	40.7	26.6	3.9	0.5
Region 1	86,513	27.0	0.9	59.9	11.0	0.6	0.6
Region 2	61,548	13.6	1.3	59.0	22.2	3.2	0.7
Region 3	171,476	33.6	2.3	52.0	10.7	1.3	0.1
Region 4	271,451	25.2	1.0	42.1	26.4	4.9	0.4
Region 5	109,969	12.9	0.9	33.0	47.1	5.8	0.3
Region 6	129,404	28.5	1.4	28.5	36.7	4.6	0.4
Region 7	133,468	23.7	0.9	51.4	21.6	1.4	0.3
Region 8	91,759	19.4	1.1	41.4	34.3	3.4	0.3
Region 9	64,809	16.4	3.6	41.9	32.3	5.4	0.3
Region 10	62,321	21.6	0.6	28.0	47.1	2.4	0.3
Region 11	108,675	21.6	0.9	28.2	40.3	7.4	1.6
Region 12	53,520	16.8	1.1	34.5	37.7	9.3	0.6
CARAGA	41,555	15.4	0.5	33.9	48.1	1.8	0.3
National Capital Region (NCR)	238,044	51.4	2.3	34.1	9.7	2.4	0.1
Cordillera Administrative Region (CAR)	31,094	41.9	3.2	30.2	16.3	3.2	5.2
Autonomous Region of Muslim Mindanao (ARMM)	52,600	2.9	1.3	49.0	35.7	10.4	0.8

Source: http://www.doh.gov.ph/data_stat/html/health_health_professional.htm

Overall, midwives provide the largest percentage of delivery care at 40.7%, but this varies from a low of about a third (30%) of deliveries in Mindanao to a high of about 60% in Northern Luzon. Nationally, trained TBAs and doctors attended approximately the same number of deliveries (26.8%). The dependence on TBAs in rural areas cannot be explained solely by the lack of availability of doctors. Even in the urban National Capital Region only about half of the deliveries (51.4%) were attended by doctors (National Demographic Health Survey, 1998; Family Planning Survey, 2001 and 2002). Although the statistics identify who attended the birth, the competence of the attendant is not known. In a field survey of 109 hospitals (Festin, et al 2000), only 84 reported that they were adequately equipped for emergency obstetric care (intravenous and oral antibiotics, parenteral sedation, anticonvulsants, forceps delivery, manual removal of the placenta, suction forceps delivery, blood transfusion, Caesarian section and curettage).

Antenatal and postpartum care

Only modest improvements in antenatal care have been made. Overall, only 64.8% of pregnant women have had three or more prenatal visits (FHSIS 2000).

Linked to poor coverage for antenatal care is the low coverage for immunization and nutritional supplementation. Immunization coverage for tetanus toxoid is only 62% (FHSIS 2000). Only 46.9% of pregnant women received *complete* iron supplementation (FHSIS 1999), and 57% received iodine supplementation (National Demographic Health Survey, 1998). According to alternative data in 2000, 60.3% of women received iodine capsules and 78.5% took iron supplements related to the pregnancy with their youngest surviving child (Maternal and Child Health Survey, 2000).

There are wide regional differences in these indicators of prenatal care (FHSIS 2000). Generally, a higher percentage of women living in urban areas than in rural areas took iron and iodine supplements. There is no national program or national data for folic acid supplementation. However, a field survey of 2,336 women conducted over a 5 year period found very low rates – 3.2-16.7% for urban mothers and 4.5-8.2% for rural mothers (Festin et al., 2000). This is unfortunate because conditions now thought to be prevented by folic acid supplementation are prevalent in the Philippines, including neural tube defects and other congenital anomalies, such as cleft lip and palate, limb defects, and some heart defects.

Postpartum indicators are faring even worse. Overall, only about 74% of women receive postpartum visits and only 57% of lactating women receive vitamin A. Even in the urbanized National Capital Region, prenatal and postpartum care rates are not significantly better than the national averages.

Summary:

Gaps in maternal health

Poor coverage and quality of antenatal care

- Low tetanus toxoid immunization rate
- High rates of iron deficiency anemia
- High prevalence of goiter
- Low awareness of danger signs
- Low folic acid supplementation

Low rates of skilled attendance at delivery

- Inadequate health facilities for basic, emergency and comprehensive obstetric care
- Low antenatal steroid use for preterm labor
- High rates of sepsis, breathing difficulty
- High rates of congenital anomalies
- Low exclusive breastfeeding rates

Limited postnatal care

- Poor health seeking behavior
- Low exclusive breastfeeding rates
- Poor fertility behavior

Traditional practices

Although the functional literacy rate is high, folk beliefs, misconceptions and practices detrimental to health are still common. At birth, the use of talismans, amulets, and abdominal binders is common, especially among indigenous groups (Demetrio, 1991). Misconceptions that compromise the exclusivity and maintenance of breastfeeding are widespread. Common practices are to use prelacteals (sugar or rice water, or plant extracts) to hasten meconium passage, to discard the colostrum, and to deny the breast if the mother is tired or hungry.

5. SERVICES, PROGRAMS AND RESOURCES FOR NEONATAL HEALTH

Government structures and policies for maternal and neonatal health

The public health care system has evolved in the past 25 years since 1979 with the adoption of Primary Health Care (1983), followed by the integration of public health and hospital services. The greatest change occurred with the reorganization of the Department of Health, including the decentralization of health services in 1992 to Local Government Units (LGUs) as mandated under the Local Government Code of 1991 (National Objectives for Health, 1999-2004).

The Department of Health maintains specialty and regional hospitals and has a field office in every region. With decentralization, provincial and district hospitals are under the provincial government, while the municipal government manages the rural health units and barangay health stations. (A barangay is the smallest local government unit, very similar to a village or a town). In every province, city or municipality, there is a local health board. It serves as an advisory body to the local executive and the *sanggunian* or local legislative council on health-related matters (Department of Health, National Objectives for Health, 1999-2004).

The Center for Family Health (CFH) of the Department of Health has overall responsibility for developing the policy, setting standards, and coordinating and integrating all activities that relate to newborn health. The CFH has convened a Technical Working Group on Safe Motherhood, which is currently developing a strategic framework to address maternal morbidity and mortality and to identify needed primary health care services and hospital interventions. Programs are being piloted in hospitals (e.g. the Philippine General Hospital) and communities (e.g. Davao, in southern Philippines) prior to implementation.

There is no specific Newborn Program. Instead, the responsibility for neonatal services is lodged between the *Maternal Health Unit* and the *Child Health Unit*. The policies for the newborn age group are nested within the Maternal and Child Health policies that provide a framework for action on newborn health. Existing policies and programs include the following:

- *Philippine National Strategic Framework for Plan Development for Children, 2000-2025 (Child 21)*

The health sector's contribution to the Philippine National Development Plan for Children defines the vision for children by 2025, formulates cost-effective interventions, and outlines a budget that will reflect contributions of different national and local government units, the private sector, non-governmental organizations (NGOs) and international organizations. It serves as a framework for local government units in the formulation of their development plans.

- *Early Childhood Care and Development Program (ECCD)*
Republic Act 8980 (December 5, 2000) embodies a comprehensive policy for early childhood care and development, from conception to 6 years of age. This national system, designed to be integrated and sustainable, is multi-sectoral. It has inter-agency collaboration at national and local levels of government, among public and private sectors, NGOs, professional organizations and academic institutions, service providers, communities and families. PHP 400 million have been provided for this 5-year program.
- *The Safe Motherhood Initiative*
The Safe Motherhood Initiative, launched in 1987, is a comprehensive program targeting primarily all women of reproductive age (15-44 years) and all newborns up to 28 days. It aims to reduce maternal and perinatal morbidity and mortality via four 'pillars': antenatal and postpartum care, clean and safe delivery, emergency obstetric care and family planning. Components of the initiative include capacity building, social mobilization, community participation, monitoring and evaluation, and research and documentation with capacity building being directed towards midwives, first level referral doctors and TBAs.

The Safe Motherhood Initiative has set quality standards for maternal and newborn health services. The goal is to provide services that:

- 1) Are accessible and available at the lowest possible facility that can provide the services safely and effectively;
- 2) Are acceptable to potential users and responsive to local norms.
- 3) Have on hand all essential supplies and equipment;
- 4) Provide comprehensive care and linkages to other services;
- 5) Provide for continuity of care and follow-up;
- 6) Are staffed by technically competent health care providers who rely on clear protocols for treatment;
- 7) Are staffed by workers who provide respectful and non-judgmental care;
- 8) Involve the client in decision-making, and see clients as active partners in health care;
- 9) Offer economic and social support to health care providers; and
- 10) Encourage partner as well as family and community involvement in pre-and post-natal services.

The Center for Family Health provides the main funding, with augmentation from partners (Safe Motherhood Policy, 2000). For the year 2004, the total budget of the Women's and Child Health Development Program of the Department of Health is PHP 110,092,400, of which PHP 24,674,200 is allocated to the Child budget and PHP 51,393,999 to the Women's budget. Programs significant to newborn health within the Child budget include Breastfeeding Promotion, Newborn Screening and the Integrated Management of Childhood Illness (IMCI) initiative, the latter receiving the largest allocation. Admittedly, however, there is no fiscally independent program for the newborn (Work and Financial Plan, Women's and Child Health Development Program 2004) and the strategies of the local IMCI program *start at the first week of life*.

- *Fifth Country Program for Children: Fostering Health-Nutrition Caring Behavior Through a Child-Friendly Movement (CPC V)*
The goals of this joint program with UNICEF are to:
 - 1) Operationalize the Convention on the Rights of the Child by fostering caring behaviors in families and communities;

- 2) Improve food security through breastfeeding support, micronutrient supplementation, education and communication;
- 3) Foster appropriate health-seeking behaviors in child-friendly facilities and systems, and provide support at the national and sub-national levels; and
- 4) Promote the health-nutrition agenda involving families, communities, local government units, non-governmental organizations, and civic organizations.

CPV V supports several efforts affecting the newborn. The Maternal Health and Nutrition Project is responsible for reproductive health, maternal nutrition and empowerment, care during pregnancy and lactation (at the family and community level), and essential and emergency obstetric care (at the health system level). The Child Health and Nutrition Project includes preventive growth monitoring and promotion, exclusive breastfeeding and appropriate complementary feeding, immunization, micronutrient supplementation, early childhood care and development (ECCD), and psychosocial stimulation of children at the community level. Integrated Management of Childhood Illness (IMCI) also falls within this area of work. The Micronutrients Deficiency Control program focuses on universal salt iodization and vitamin A supplementation.

In the pipeline are new programs for 1) shaken baby syndrome and 2) breastfeeding support groups, organized by breastfeeding mothers, an initiative of local government units with the Department of Health.

Health service infrastructure

The potential infrastructure to mobilize for newborn health remains undeveloped. Nationally, the percentage of all public health facilities with functioning *basic essential obstetric care* is only 9.5% of rural health units (RHUs) and 2.6% of barangay health stations (BHSs). The percentage of referral hospitals with functioning *comprehensive essential obstetric care* is only 20% of district hospitals and 47% of provincial hospitals (Women's Health and Safe Motherhood Program Report, 1998).

Alternative data come from the Philippine Obstetric and Gynecologic Society (POGS) and the Philippine Pediatric Society (PPS), who periodically accredit health facilities using standards of obstetric and neonatal care. Pediatricians, neonatologists, family medicine specialists, and general practitioners are concentrated in urban areas where intensive care facilities, drugs and supplies are more available.

In the majority of rural settings, the Rural Health Midwife in the barangay health station may be the only available health care provider for the newborn. Referral systems and networking are in planning stages but are still perceived as weak. Training in newborn resuscitation is through the Safe Motherhood Program (the Department of Health), the Neonatal Resuscitation Program (of the Philippine Pediatric Society's Section of Neonatology) or other programs, such as ALARM (Advanced Labor and Risk Management Program) of the Philippine Obstetric and Gynecologic Society. Currently, the most active Government efforts to promote newborn health are within the Safe Motherhood Initiative and activities that are provided for in the Fifth Country Program for Children.

Health worker training conducted by the Department of Health is mainly centered on breastfeeding promotion, newborn screening and IMCI. Health workers are taught risk assessment but there is no separate Risk Code for newborns. In the Child Risk Code of the DOH, risk factors pertinent to the newborn history are 1) preterm birth, 2) low birth weight less than 2.5 kg, 3) cleft lip and/or palate,

heart disease, retardation, or cerebral palsy, 4) first born, 5) sixth or higher pregnancy, 6) birth interval less than 1 year, and 7) breastfed less than 6 months.

The Jose Fabella Memorial Hospital is the official National Lactation Management Center. It provides courses for regional and international teams, to implement and strengthen the Mother-Baby Friendly Hospital Initiative. It has also spearheaded the Kangaroo Mother Care Program and is currently developing midwifery teams to cover health centers of the Manila Health Department.

In partnership with the WHO, UNFPA, UNICEF and the World Bank, the IMPAC (Integrated Management of Pregnancy and Childbirth) program is a guide for essential practice in pregnancy, childbirth and newborn care including a list of essential equipment and supplies. Communities in Regions 8, 9 and the NCR are currently pilot-testing the intervention. It also includes the hospital-based Managing Complications in Pregnancy and Childbirth (MCPC) program, which is being pilot-tested in the Philippine General Hospital.

Community interventions

The Government also implements community-based programs to provide basic services at the barangay level. The Department of Health has an Essential Health Care Package for Mothers and the Unborn which includes antenatal registration, tetanus toxoid immunization, vitamin A, folate and iron supplementation, treatment of existing conditions, early detection and management of complications before delivery, clean and safe delivery, breastfeeding, information services for family planning, HIV/STD prevention and management, and dental care. The corresponding essential newborn care elements include resuscitation, prevention and management of hypothermia, routine eye prophylaxis, immediate and exclusive breastfeeding up to 6 months, birth registration, newborn screening, prevention and management of infection, birth weight and growth monitoring. Data on implementation and monitoring of these programs are not available.

A typical barangay has a Rural Health Midwife or barangay midwife, who has undergone a two-year training program and is licensed by the Department of Health. In providing birthing services, the midwife is often assisted by community or barangay health workers and volunteers, including barangay nutrition scholars, who have undergone various Department of Health training programs. Other volunteers, such as elementary school teachers or day-care workers, may also assist at a delivery.

The Department of Health began conducting training programs for TBAs or *hilots* with UNICEF in the 1950s. In 1958, Republic Act 2644 authorized trained *hilots* to practice in areas not served by professional health workers. Currently, however, *hilots* provide services even in areas where midwives and doctors are available. Under the Safe Motherhood Program, a Traditional Birth Attendant Manual is under revision. Data on evaluation of training of TBAs are not yet available.

As mentioned previously, only half of mother and newborns receive postpartum care. The Safe Motherhood Policy (2000), however, seeks to ensure care for the newborn immediately after birth followed by at least two postpartum visits, one week after delivery and a month later. Services during the visits include: 1) newborn screening, 2) proper cord care, 3) identification and management of problems in mothers and newborn in the first 24 hours, 4) immediate and safe referral of cases needing higher level care, 5) support for exclusive breastfeeding, 6) immunization, 7) family planning, micronutrient supplementation, personal hygiene, and care of the newborn, and 8) BCG immunization and complete assessment of the newborn using a growth monitoring chart

The Council for the Welfare of Children (CWC), the focal coordinating government agency for children's protection and welfare is responsible for coordinating implementation of all laws, programs and services, as well as adherence to the Philippine National Strategic Framework for Plan Development for Children 2000-2025. One of the core Early Childhood Development Project (ECDP) service delivery packages is designed for Rural Health Midwives with prenatal mothers and infants up to 2 years of age.

These government services are complemented by non-governmental organizations. For example, under the umbrella organization called the Council for Health Development (CHD), about 50 member organizations working in community-based health programs are using a grassroots approach of community involvement to solve problems, for example, in maternal and child health, nutrition, food production, and malaria control (The State of Asian Children, 2000).

Non-governmental and private volunteer organizations

Several non-governmental organizations (NGOs) and private volunteer organizations (PVOs) provide services to newborns and their mothers. These include the following.

- *Partners for Health Child Survival Program of Pearl S. Buck International*
The Partners for Health Child Survival Program (Pearl S. Buck International) is a four-year USAID-funded project to improve community-based health programs in selected barangays of Leyte in southern Philippines. Currently entering its last year, the project has trained rural health midwives, barangay health workers, TBAs and families on nutrition and breastfeeding, maternal care, and child spacing. Utilizing mother support groups, Basic Child Learning Packages, Mother-Baby Friendly Health Stations and Weighing Posts, among others, the midterm targets have been achieved especially in the areas of breastfeeding and nutrition. In its midterm evaluation their strategies resulted in an increase from 50% to 90% of children age less than 2 years who were breastfed at least until 4 months of age. Midterm plans are for overall monitoring and evaluation, training, research, and an exit strategy to ensure sustainability and partnerships with NGO's.
- *Arci Cultura E Sviluppo – Southeast Asia (ARCS-SEA)*
Arci Cultura E Sviluppo conducts programs on the supply and maintenance of medical equipment, including transferring technology to various programs and centers for newborn care: the Newborn Intensive Care Unit, the peer lactation counselor program, and the Department of Pediatrics in the Philippine General Hospital.
- *Arugaan*
Arugaan establishes support systems for working women, including counselling on breastfeeding, health and nutrition. It runs a home center organized by groups of working mothers, to address the needs of the urban working poor. With policy-makers, employers and union officers, it facilitates the creation of crèches at workplaces.
- *Health Action Information Network*
The Health Action Information Network (HAIN) conducts workshops accredited with the Boards of Medicine, Nursing and Midwifery on reproductive and sexual health. It circulates teaching materials on HIV/AIDS and STIs. With NGOs and academic institutions, the Network conducts innovative research on family planning, knowledge about HIV/AIDS, and young adult sexuality.
- *Remedios AIDS Foundation*

The Remedios AIDS Foundation conducts educational programs and community outreach. At its training institute, it conducts lectures and seminars, and organizes meetings and conventions. It develops modules, for example, on HIV/AIDS, case management of STDs, gender sensitivity and sexuality, mobilization of peer educators, and reproductive health. It provides phone hotlines, face to face counselling, and chat lines to give out information on HIV and to support persons living with HIV.

Educational institutions

Training on newborn care exists for three main cadres of workers: midwives, nurses, and clinicians (doctors, and specialists in neonatology).

- *Midwifery Curriculum*
The typical two-year curriculum for midwives has three modules on the care of infants, including routine newborn care (i.e. cord care, eye prophylaxis, bathing, and thermoregulation). Some midwifery schools have incorporated history taking, gestational age assessment and risk assessment of the newborn. The Jose Fabella Center offers a Residency in Midwifery, in addition to the basic two-year midwifery course.
- *Nursing Curriculum*
The four-year nursing curriculum includes newborn care. This study focuses on care immediately after delivery, including using the Apgar score, eye prophylaxis, vitamin K injection, bathing, cord care, anthropometric measurements, and physical assessment. It also covers the Promotion of Breastfeeding (Standards for the Safe Practice of Mother and Child Nursing in the Philippines, 2001). A nurse acquires any additional skills beyond this core curriculum through on-the-job training with more senior nurses, and by attending continuing education programs in hospitals. Unfortunately, both are considered inadequate; they are not standardized and are offered erratically. In the pipeline is a Newborn Wellness Program that will strengthen the existing newborn screening program, immunization, breastfeeding, and maternal and infant nutrition, as well as cover genetic counselling and responsible parenthood.
- *Medical Curriculum*
A doctor's seven-year undergraduate training in the area of newborn care consists of basic fetal physiology and transition, care of the normal newborn, and the pathophysiology of various neonatal disorders. It typically covers common problems, including prematurity, sepsis, and respiratory diseases. Postgraduate training in the specialty of Pediatrics and Neonatology is concentrated in tertiary training hospitals in urban settings. Although training in neonatal intensive care may be adequate, training in preventive, promotive and community aspects of newborn health care and delivery are widely considered to be inadequate. There are efforts to make the medical curriculum more community oriented but these efforts, as yet, do not address specific issues relating to newborn health.

Professional associations

In addition to their role in setting standards for newborn care and accrediting hospitals, mentioned previously, professional associations see that one of their main responsibilities is to provide continuing education for their members.

- *Philippine Pediatric Society (PPS)*

The Pediatric Society, working with the Department of Health, through its IMCI Committee coordinates IMCI activities. It also accredits children's hospital services. Also, the Society's Section of Neonatology conducts the Neonatal Resuscitation Program (of the American Heart Association) for medical practitioners, midwives, and others. The Section of Neonatology has published a manual on The Standards of Newborn Care (2001), containing contributions from various accredited neonatologists. A set of evidence-based Consensus Guidelines are also being developed on various aspects of newborn care. This section of the PPS is currently organizing training of trainer's workshops to build capacity for the Neonatal Resuscitation Program. The sustainability of this program, however, is under serious threat, as corporate donors have recently pulled out due to economic difficulties. Requests for workshops from remote areas of the country are not being filled because of limited human resources, dilapidated teaching equipment and lack of financial support.

- *Perinatal Association of the Philippines (PAP)*
The Perinatal Association is an umbrella organization of pediatricians, obstetricians, midwives and nurses. Jointly with the PPS, it conducts STABLE (Sugar, Temperature, Artificial Breathing, Blood Pressure, Lab Work, Emotional Support) workshops on pre-transport stabilization of newborns for clinicians, and postpartum and newborn workshops for midwives.
- *The National Institutes of Health (NIH)*
Through its Institute of Genetics, the National Institutes of Health spearheaded the Newborn Screening Program. It is collaborating with the Department of Health to more widely disseminate the program. Currently, tests in the newborn screening program include those for congenital hypothyroidism, congenital adrenal hyperplasia, galactosemia, phenylketonuria, and glucose-6-phosphate dehydrogenase (G-6-PD) deficiency.
- *Integrated Midwives Association of the Philippines (IMAP)*
In addition to providing continuing midwifery education, the Midwives Association has the programs Project ABCC (Anti-Abortion, Breastfeeding, Contraception Control and Cancer Detection) and Safe Motherhood. It also maintains information on high-risk mothers and newborns.
- *Philippine Obstetrical and Gynecological Society (POGS)*
The Philippine Obstetrical and Gynecological Society (in collaboration with its Canadian counterpart society) has an Advanced Labor and Risk Management (ALARM) Program. The program includes a module for normal newborn care, including newborn resuscitation in a health care facility and in the community; on preventive care; and on recognition and management of problems following resuscitation or in the first week of life. The Society also accredits hospital obstetric services.

Partnerships with international and bilateral agencies

The Department of Health has formed partnerships with international agencies that supplement the department's funding with substantial amounts of financial assistance. Many of the funded projects and initiatives promote maternal and child health including newborn health. These include the following.

- Women's Health and Safe Motherhood Project (Asian Development Bank)
- European Union
- World Bank.
- Australian Agency for International Development

- UNICEF
- Kreditanstalt für Wiederaufbau (German Bank for Reconstruction)
- Early Childhood Development Project (Asian Development Bank)
- Integrated Family Planning and Maternal Health Program (USAID)
- Family Planning/Maternal and Child Health Project (Phase II), Japanese International Cooperation Agency (JICA)
- Family Health International/IMPACT (USAID)

6. OPPORTUNITIES AND CHALLENGES TO IMPROVING NEWBORN SURVIVAL AND HEALTH

The task of reducing the rate of newborn deaths requires the concerted effort of policy makers, the health system and community-based services, with international partners. There are strong, positive factors offering opportunities at this time to strengthen care during pregnancy, delivery, and through the early days of the child's life. Many significant challenges, however, remain.

Positive factors

- *Legislative support: Existing national policies and legislation*
A number of national policies and frameworks are already in place, targeting various aspects that impact on newborn health. These include, for example, the Philippine National Strategic Framework for Plan Development for Children, 2000-2025 (Child 21), Early Childhood Care and Development Program (ECCD; Republic Act 8980), the Rooming-In and Breastfeeding Act, the Code of Marketing of Breastmilk Substitutes (1996), the Safe Motherhood Policy, and the Philippines AIDS Prevention and Control Act. Implementation, monitoring and evaluation are being carried out, but need improvement. Strategies for newborn health can be built onto these existing frameworks.
- *Community support: Health initiatives in the community*
Primary Health Care and community-based health interventions are already in place in selected areas of the Philippines, both through governmental and non-governmental initiatives. To sustain community efforts, the government has adopted the Minimum Basic Need (MBN) Approach using four areas of intervention to assist communities: 1) social preparation of families and communities 2) building capabilities of community volunteers, leaders and families, 3) accessing social welfare services, and 4) monitoring and evaluation.
- *Scientific support: Evidence-based guidelines*
Professional organizations are in the process of developing consensus on guidelines for obstetric and newborn care. The guidelines are based on the evidence for their efficacy, their cost-effectiveness and the appropriateness of the technology for use in the local setting. The Philippine Guidelines on Periodic Health Examinations (PHEX 2004), for example, includes guidelines for antenatal care visits and newborn screening. There also exists a strong epidemiologic capacity for initiating and implementing research in maternal and child health (e.g., National Institutes of Health under which are the Institute of Child Health, Institute of Human Genetics, and Institute of Clinical Epidemiology).
- *Other positive factors influencing maternal and newborn health*
The Philippines has a low HIV/AIDS prevalence relative to its neighbors, such as Thailand. Passive, active and behavioral surveillance systems are in place to monitor the spread of the infection. There are existing partnerships and networks among NGO's, professional

organizations and educational institutions in a move towards more community-oriented education in the medical and nursing curricula.

Challenges

The following are the most critical challenges to improving newborn survival and health (see a more complete list on the right).

- *Rapidly growing, young population*
Approximately 50% of the female population is of child-bearing age with an estimated 2 million babies born each year. Family planning initiatives have had difficulty making significant inroads.
- *Majority of deliveries outside of health facilities*
Approximately 72% of deliveries occur outside of health facilities, many without the assistance of trained attendants. Geographic constraints of an archipelago with more than 7000 islands – with deficient land, sea and air transport services, and weak networking – make emergency maternal and neonatal transfers extremely risky. Providing essential newborn care, including appropriate referral care for complications during delivery, is a major challenge.
- *Low government expenditures for health*
Total expenditures for health constitute only 3.5% of the GDP (well below the recommended 5% recommended by the WHO for a developing country) or only 2.2% of the total budget (2000). A large proportion of the government's budget for health goes to tertiary hospital care, draining resources from primary health care services. The financial burden on individual families is heavy. Devolution of health services to local government units, though noble in its intention to improve quality and efficiency, carries the risk of technical and administrative fragmentation of public health services and even more marginalization of the poor.
- *Growing risks of HIV infection*
Although the rates of HIV infection are still relatively low, conditions exist for a greater threat to mothers and their newborns. The spreading of sexually transmitted infections (STIs) is an indication of what is to come. The increasing numbers of sex workers and rising numbers of Overseas Filipino Workers (a high risk group) are conditions that will be linked to higher rates of HIV in the future. Unfortunately, expensive treatment protocols for HIV/AIDS are still out of reach of patients.
- *Concentration of services in urban areas*
There is a pronounced concentration of resources in urban centers and highly developed rural areas – physicians and other skilled health care workers, emergency care services, newborn intensive care units, and equipment. Many depressed rural communities still do not have

Challenges to improving newborn survival and health in the Philippines

- Rapidly growing, young population
- Majority of deliveries outside of hospitals
- Low government expenditures for health
- Growing rates of HIV infection
- Concentration of services in urban areas
- Loss of skilled workers (a 'brain drain')
- Weak structure to produce major change and improvements in maternal and newborn health
- Difficult sea and land transport
- High cost of facility-based health services
- Inadequate technical and interpersonal skills of health workers
- Poor physical facilities and health infrastructure
- Inadequacy of basic equipment and supplies
- Widening gap between rich and poor
- Poor awareness and health seeking behaviour
- Armed conflicts and natural disasters
- Uncertain donor support

access to health care, are not serviced by physicians and have no emergency back-up for complications during pregnancy and delivery.

- *Loss of skilled health workers*
A high and rapid turnover of skilled health workers to better paying jobs abroad (a ‘brain drain’) is difficult to address given the many opportunities for trained health workers abroad and the low compensation for their services locally.
- *Weak structure to produce major change and improvements in maternal and newborn health*
Instead of a comprehensive newborn program, various interventions are embedded in maternal or child health programs. The scattered efforts weaken the potential political will and fiscal ‘dedication’ needed for adequate implementation, monitoring and evaluation.

All the above factors have created large gaps in maternal and newborn health. For example, antenatal care is limited, with low rates of tetanus toxoid immunization and iron and iodine supplementation, with virtually no folic acid supplementation. The low rate of skilled attendance at delivery results in inadequate care, limited antenatal steroid use (and resultant complications of prematurity), and high rates of sepsis and asphyxia. As a result, a large number of babies, including low birth weight infants, are at higher risk for morbidity and mortality. Coupled with this are low exclusive breastfeeding rates and poor feeding practices contributing to high neonatal, infant and under-five mortality rates.

Possible points of entry for promoting newborn health

Existing programs with suitable points of entry for integrating newborn health activities include:

- 1) Safe Motherhood Initiative
- 2) The Early Childhood Care and Development Program,
- 3) The Fifth Country Program for Children (CPC V),
- 4) Community-based health programs (e.g. the Partners for Health Child Survival Program of Pearl S. Buck International),
- 5) The Mother-Baby Friendly Hospital Initiative, including the Kangaroo Mother Care Program, and
- 6) Programs of professional organizations, e.g. the Neonatal Resuscitation Program of the Philippine Pediatric Society’s Section of Neonatology and the postpartum and newborn workshops for midwives of the Perinatal Association of the Philippines.

7. STRATEGIC OPTIONS

A key issue to address is the fact that 72% of newborn infants are born outside of health facilities. It is essential to determine in depth why families make this choice. Commonly, the decision to deliver at home is due to socioeconomic circumstances. Nevertheless, we do not know how often this is a deliberate choice borne of cultural preferences. It is also possible that difficulties in accessing the health facilities or dissatisfaction with the services may also play a role.

It would be useful to establish a working group with representatives from the Department of Health and key organizations to discuss issues, plan interventions, and oversee implementation of the necessary strategies. The working group should also include donor agencies working in the area of maternal and child health into which newborn health can be integrated. Some key issues learned from country program interventions include:

- Interventions should, as far as possible, be evidence-based. That is, they should have proven results in reducing newborn deaths and improving the newborn's health.
- Through consensus, a decision should be made on the key interventions to be adopted. Components included under essential newborn care need to be prioritized, and implementation strategies developed. Preference should be given to those components that are effective, are sustainable and can be taken to scale.
- The links among the various departments in the Department of Health dealing with maternal, newborn and child health responsibilities should be strengthened, and mechanisms for improving coordination among their efforts should be established.
- National policies and strategies should ensure that there is adequate *focus* on key aspects of newborn health. Policies should emphasize preventive and promotive aspects of newborn health, as well as detection and care of complications.
- Targeting both the facility and community, and the links between, is important to ensure a continuum of care for the newborn and the mother.
- A comprehensive approach targeting the pre-conception, antenatal, delivery and postnatal periods needs to be developed.
- It is critical that clear standards are set for health care providers, with competency-based programs for building capacity and providing supportive supervision.
- "Essential Newborn Care" should be incorporated in the pre-service education of skilled providers, including the core competencies of skilled birth attendants.
- An adequate *coverage* of the population by effective activities is also needed to achieve the necessary impact on neonatal mortality required to achieve the Millennium Development Goals.

There have been discussions on whether newborn health should become a vertical program (e.g. a "Safe Newborn Initiative"). Most groups, however, believe that this is neither feasible nor desirable, and an integrated program such as a "*Safe Motherhood and Newborn Initiative*" would be more appropriate. However, whenever this relatively new area becomes linked with either maternal or child health, it is critical that newborn health maintains its distinctive, *clear visibility*, in order to be strong enough to have the much needed impact on neonatal mortality and achieve the Millennium Development Goals.

APPENDIX: Additional information

**Table A1. Selected demographic, maternal health and economic indicators, by country
(Philippines and other countries with similar racial, geographic and socioeconomic conditions)**

Country	Total population in thousands (2001)	Total fertility rate (2001)	1995-2001			Adult 15-49 yrs HIV prevalence rate (%) (2001)	Population urbanized (%) (2002)	GNI per capita (US\$) (2001)	Debt service as a % of exports of goods and services (2000)
			Antenatal care coverage (%)	Skilled attendant at delivery (%)	Maternal mortality ratio (per 100,000 live births)				
Philippines	77,131	3.4	86	56	170	<0.10	59	1040x	13
Indonesia	214,840	2.4	89	56	380	0.10	42	680	23
Malaysia	22,633	3.0	-	96	41	0.35	58	3640	5
Thailand	63,584	2.0	86	85	44	1.80	20	1970	15

Source: *The State of the World's Children 2003*; GNI Gross National Income

x Indicates data from years or periods other than those specified in the column heading, different from the standard definition or referring to only part of the country.

**Table A2. Selected child health indicators, by country
(Philippines and other countries with similar racial, geographic, and socioeconomic conditions)**

Country	Under-5 mortality rank	Under-5 mortality rate (2001)	% of Infants with LBW (1995-2000)	Infant mortality rate (2001)	Exclusively breastfed < 6 months (1995-2001)
Philippines	88	38	18	29	37
Indonesia	77	45	9	33	42
Malaysia	158	8	9	8	-
Thailand	105	28	7	24	4x

Source: *The State of the World's Children 2003*

x refers to exclusive breastfeeding < 4 months

Table A3. Selected health indicators by socioeconomic quintiles in the Philippines (1998)

	Quintiles					Population average
	Poorest	2 nd	Middle	4 th	Richest	
Infant mortality rate	48.8	39.2	33.7	24.9	20.9	36.0
Under-5 mortality rate	79.8	60.5	49.7	33.4	29.2	54.9
Fertility rate	6.5	4.7	3.6	2.9	2.1	3.7

Source: *Gwatkin et al., World Bank, 2000*

Table A4. Selected health indicators by urban/rural residence and socioeconomic quintiles in the Philippines (1998)

	Urban quintiles					Rural quintiles				
	Poorest	2nd	Middle	4th	Richest	Poorest	2 nd	Middle	4th	Richest
Infant mortality rate	49.7	40.1	37.6	24.8	17.7	48.7	38.7	28.4	25.1	(35.5)
Under-5 mortality rate	70.5	62.9	57.9	33.2	26.9	81.2	59.2	38.8	33.7	(39.8)
Fertility rate	*	(4.5)	3.6	2.9	2.0	6.5	4.8	3.7	(2.9)	(2.6)

Source: Gwatkin et al., World Bank, 2000

() indicates large sampling errors due to small number of cases.

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