



Accelerate a unified strategy to save mothers, newborns, and children

Majority of maternal and newborn deaths occur during labor, delivery, and the immediate postpartum.

Pregnant women are dying due to complications and the numbers are not declining fast enough.

Hypertension, postpartum hemorrhage, and severe abortive outcomes are the three leading causes of maternal deaths (DOH, 2003). Abortion would contribute significantly to maternal deaths when there are unwanted pregnancies. Half of the 3.1 M pregnancies occurring each year are unintended, with a third being terminated through abortion (Singh *et al.*, 2006). In the Philippines where abortion is illegal, most procedures are performed through unsafe practices that increase the risk of hemorrhage and infection. Sixteen percent of the abortion attempts are among teenagers, making them vulnerable to complications and death.

The maternal mortality ratio (MMR) in the Philippines has declined very slowly since the 1990s (Figure 1). At the current rate of decline, the Philippines is unlikely to reach the National Objectives for Health (NOH) targets by 2010 and Millennium Development Goals (MDGs 4 and 5) by 2015 (Table 1).

Since pregnancy complications are unpredictable and unpreventable, the health system must be prepared to respond in a timely and effective manner to reduce maternal deaths. The capacity of the health system to address not only the direct causes of maternal mortality but the indirect causes as well (e.g., sexually-transmitted infection (STI), TB, malaria, hypertension, diabetes), when present, can help improve MMR.

The rate of decline of under-five mortality has slowed down during the past 10 years due to the very slow decline of neonatal deaths.

The under-five mortality rate (U5MR), infant mortality rates (IMR) and child mortality rate (CMR) have been reduced significantly but the pace of reduction has decelerated for the past 10 years. The slow drop is due to the very slow decline of neonatal mortality rate (NMR) and the post-neonatal mortality rate (PNMR), which compose more than half of IMR (Table 1).

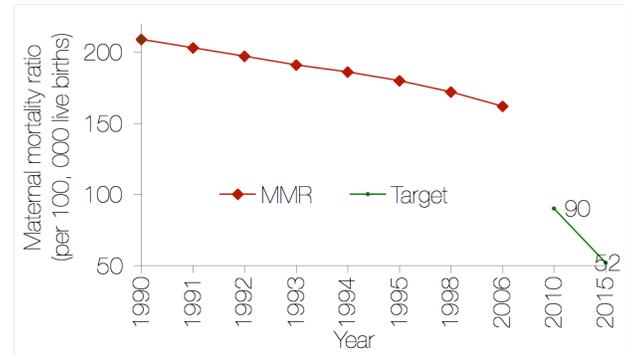


Figure 1. Maternal mortality ratio, Philippines, 1990–1998, 2006, 2010, and 2015

Sources of data: 1990–1998, and 2006 data — NSCB, 2007; 2010 and 2015 targets — DOH, 2005.

Majority of newborns die due to stressful events surrounding delivery.

Most neonatal deaths occur during the first two days of life and are caused mainly by prematurity, sepsis / pneumonia, and birth asphyxia (Figure 2). Neonatal events comprise majority of the causes of infant deaths, which in turn account for most of child mortality. Other major precursors of childhood mortality are pneumonia, diarrhea, malaria, and measles (WHO, 2000). Since majority of the child deaths can be attributed to neonatal causes, the very slow decline of NMR during the past 10 years slowed down the initial momentum of significant reduction observed with U5MR, IMR, and CMR.

Indicators of maternal and child health status vary across regions, demographic characteristics, and socioeconomic status.

Variations in the performance of maternal and child health exists when national data are disaggregated to

Table 1. Maternal, Neonatal, and Child Health NOH targets and MDGs 4 and 5

Goals	Baseline Indicators	NOH Targets by 2010	MDGs by 2015
Reduce MMR	209	90	52
Reduce U5MR	72	32	27
Reduce IMR	46	17	< 17

Notes: MMR — maternal mortality ratio (maternal deaths per 100,000 live births), U5MR — under-five mortality ratio (under-five deaths per 1,000 live births), IMR — infant mortality ratio (0–12 months deaths per 1,000 live births). Sources of data: Baseline indicator for MMR — NSO, 1990; U5MR and IMR — NSO, 1998.

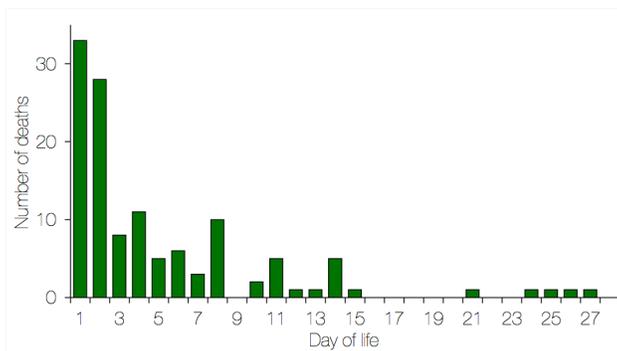


Figure 2. Number of deaths among neonates, by day of life, Philippines, 1998 and 2003

Source: NSO, 2004.

regional and sub-regional levels. In addition, there are different sets of best- and worst-performing provinces according to each indicator. Maternal and child health performance indicators also vary according to demographic and socioeconomic characteristics. Higher mortality is observed among male children, children of the very young and very old, children of higher birth orders, and children born in less than a 3-year birth interval (NSO, 2006). Likewise, maternal poverty and lack of education correlate with higher childhood mortality rates (NSO and ORC Macro, 2004). Poverty and poor education are associated with the following three types of delay, which can lead to adverse pregnancy outcomes: (1) delay in deciding to seek care; (2) delay in reaching appropriate care; and (3) delay in receiving care.

High fertility rates, high unmet need for family planning, and maternal and child undernutrition worsen the morbidity outcomes for both mothers and children.

High fertility (3.2%) and high unmet need for family planning (16%) also contribute to poor pregnancy outcomes and subsequently to under-five deaths (NSO, 2006). Having too many children and having them in close succession corresponds to higher U5MR, IMR and NMR (NSO, 2006). Teenagers have the highest unmet need for family planning (32%), thus magnifying the association of higher mortalities in this age group (NSO, 2006). During unplanned pregnancies, mothers are seldom at their maximum health, thereby leading to less-than-optimal health for her offspring, as well.

For both mothers and children, undernutrition increases the mortality risk. Surveys show that a significant percentage of pregnant women, and children are still undernourished, anemic, and vitamin-A-deficient (Table 2). Undernutrition is not only an important cause of maternal morbidity but also acts as a precursor to many health problems at all life stages when not addressed promptly.

Table 2. Nutritional indicators for mothers and children, Philippines, 2003

Indicator	% of mothers	% of children
Undernutrition	26.6	27.6
Iron-deficiency anemia (IDA)	43.9	66.2
Vitamin A deficiency (VAD)	17.5	40.1

Sources of data: Undernutrition among mothers and children, IDA among mothers, and VAD among children — DOST-FNRI, 2003; IDA among children and VAD among mothers — NSO and ORC Macro, 2004.

Maternal and newborn deaths are influenced by the place of delivery and who assists in the process.

Mothers prefer to give birth at home with the assistance of a traditional birth attendant (TBA).

Most mothers would opt to deliver their babies at home, aided by TBAs, rather than undergo facility-based and professional-assisted care (NSO, 2007). Mothers and newborns are thus distanced from life-saving interventions provided in facilities by health professionals during labor, delivery and immediate postpartum period. In a similar manner, health facility-based services for other life cycle stages (e.g., antenatal and postnatal) are not maximized. Only around half (53%) of the mothers were given post-partum care within three days after delivery and the health services given are often inadequate and delayed. Likewise, interventions designed to increase the survival of neonates during the first week of life are not sustained and its implementation is not institutionalized. For instance, only 54% of infants initiate breastfeeding within one hour of birth and only 66% of infants are protected against neonatal tetanus received through maternal immunization (NSO and ORC Macro, 2004). In most developing countries where mothers are detached from the health system during delivery, maternal mortality is high and is deemed difficult to curb (Koblinsky *et al.*, 1999).

Mothers do not routinely choose to deliver in health facilities and avail of professional services due to several barriers.

In general, interventions for mother and child health are delivered through health facilities even when there are existing barriers to access for women and children in the community (Basilio, 2008). While a large number of mothers may be aware of what needs to be done to keep each pregnancy safe, certain factors such as a perceived hostile hospital system; poor interpersonal skills of some hospital staffs; and the presence of financial, geographical, social and cultural constraints are deterrents to actual service utilization (DOH, 2008a). The grave effect of low service utilization is magnified during labor, delivery and immediately post-partum period during which majority of the deaths occur (Ronsmans and Graham, 2006). Given that pregnancy complications are unpredictable and unpreventable, the capability of the health system to respond in a timely and effective manner is crucial to the reduction of maternal deaths.

Separate programmatic strategies for mothers and children do not address the need to focus the interventions around the critical periods—labor, delivery and immediately post-partum—when most of the deaths occur.

It has only been recently when the DOH adopted the shift from the ‘risk approach’ to the ‘emergency obstetric care approach’ (DOH, 2007) based on recommendations on what works for maternal health. Despite the absence of a policy issuance, activities supporting the pronouncement were undertaken (e.g., training, standard setting). Under the *Women’s Health and Safe Motherhood Project 2* (WHMSP2), activities in support of the paradigm shift such as the establishment of Basic Emergency Obstetric Care (BEmOC) centers, facility mapping, and needs assessment in F1 provinces and roll-out sites have been conducted. Also, ongoing family planning and reproductive health programs have contributed to the improved health status of women.

Efforts have been undertaken to integrate under one child survival strategy with the various vertical child health programs that have effectively improved the health status of Filipino children.

With regard to child health programs, most have been targeted towards older children such as the *Expanded Program for Immunization* (EPI), *Garantisadong Pambata*, and *Integrated Management of Childhood Illnesses* (IMCI). Recently, the country embraced the *Infant and Young Child Feeding* (IYCF), a program highlighting the importance of breastfeeding in infant nutrition. The DOH is also participant in the *Bright Child Program*, a national multi-sectoral effort promoting the overall improvement of Filipino children. Towards the end of 2007, the *Philippine Child Survival Strategy* (CSS) was launched in the country to concretize the gains for the past years. The CSS specified the importance of providing a package of services for newborns as part of the strategy to further decrease the number of U5MR.

While each parallel program has responded to programmatic demands, the overall impact has been watered down by the mismatch of strategy with the need. Existing separate strategies for mothers and children do not cover the newborn in the context of the mother-baby dyad. Available service packages miss out on important elements needed in the intra-partum period. Because of this shortcoming, the DOH is pursuing the integration of known effective child survival strategies with proposed actions to reduce maternal and newborn mortality (DOH, 2008b; WHO/DOH/UNICEF, 2007).

Existing policy issues must be addressed so that prompt and effective strategies are carried out to achieve NOH targets and MDGs for maternal, newborn and child health.

1. The lack of institutionalized unified framework tailored for both mothers and newborns has resulted in different technical

directions (DOH, 2008b). Moreover, existing separate health services for women and children have not been fully integrated for appropriate delivery, according to life cycle stages—a measure that would have minimized missed opportunities (Villa, 2008). The fragmented health service delivery likewise limits access especially in underserved areas.

2. There is no concrete strategy on how to increase maternal preference towards interventions that will guarantee safe pregnancy and delivery.

3. Governance structures within the DOH Central Office need to engage in collaborative interaction so as to maximize all the resources needed towards integrating maternal, newborn and health strategies.

4. Support from all partners involved with maternal, newborn and child health need to be sustained.

5. The current financing scheme and resource mobilization efforts should be maximized to fully implement and scale up an integrated strategy that will improve maternal, newborn and child health outcomes in time to reach the NOH targets and MDGs 4 and 5.

DOH needs to finalize a unified strategic framework for maternal and newborn health—one which is linked with CSS and will maximize the delivery of service packages and ensure a continuum of care across the life cycle stages.

The policy on maternal, newborn and child health should therefore cover the following strategies:

Manage the shift from home-based and TBA-assisted deliveries to facility-based and professionally-assisted deliveries.

Crucial to this transition is the organization of facilities in a 4-tiered service delivery model. This service delivery model is designed to function within a given local health service area that includes both public and private sectors. The main objective is to put in place a sustainable configuration of facilities that will ensure a high coverage of efficient, effective and equitable life-saving services for mothers and children in a catchment population. Each service area will be customized to the needs of the locality. Figure 3 describes the organizational structure of a four-tiered service delivery model in one given service area, as well as the service packages per tier. For a catchment population of 500,000

the 4-tiered service delivery model will generally be composed of (DOH, 2008c):

1. *First Tier* – consists of community-based teams that will provide an important vehicle by which mothers and their families can be influenced to give birth in facilities providing professional assistance.

2. *Second Tier* – refers to the basic essential obstetric and newborn care facilities. Strengthening the second level is a critical step toward absorbing the 56% of mothers still delivering at home (NSO, 2006) that will be targeted to shift to these facilities. Since not all localities have the appropriate resources to put up and sustain emergency facilities, this ‘transition phase’ will provide an essential sustainable link to successfully move mothers from home delivery to delivery in emergency facilities (DOH, 2008; Koblinsky *et al.*, 1999). Ensuring enough density of primary birthing facilities that are effectively linked to emergency facilities is bound to be more successful than aspiring to have an equal number of emergency facilities in high-burden and low-resource areas due to the following reasons: (a) lower maintenance cost; (b) lower skill requirement; and (c) easier means to distribute service packages that will ensure higher coverage (Campbell and Graham, 2006).

However, for this level to serve its purpose in reducing maternal and newborn deaths, it is vital that staff competency and quality of equipment be maintained. Regulatory mechanisms such as the PhilHealth accreditation for *Maternal Care Package* providers should be strengthened. Primary birthing facilities should not be a stand alone structure but must be linked to and backed-up by emergency facilities through a functional and efficient referral system.

3. *Third Tier* – comprises the Basic Emergency Obstetric and Newborn Care (BEmONC) facilities.

4. *Fourth Tier* – covers the Comprehensive Emergency Obstetric and Newborn Care (CEmONC) facilities.

The emergency facilities will be set-up according to population density and travel time from home to facility as determined by availability of transport, road networks and others access barriers that need to be overcome. Emergency facilities were initially for the purpose of averting maternal deaths. With the international movement to integrate maternal and newborn health interventions, emergency obstetric care (EmOC) has been modified to provide emergency obstetric and newborn care (EmONC).

Each 4-tiered service area must have an established blood service system that is also distributed across levels of care (e.g., pooling of blood donors at 1st tier,

possible hooking of blood products at 3rd tier prior to transport to 4th tier during emergencies, blood banking at 4th tier) that will ensure the adequate and timely provision of blood.

The human resource complement at all four tiers must be adequate to deliver the service packages. Two groups of health workers are essential for the proper functioning of this model:

1. *TBAs/Community Health Workers*. Defining the roles of TBAs and rallying their support towards this initiative can prove crucial to the success of the strategy. Involving TBAs in the health system through several mechanisms was found to be effective in reducing the lead role of TBAs during delivery (Koblinsky *et al.*, 1999). Policy back-up may be necessary to enforce this. For instance, a policy issuance at the DOH that is now in the pipeline will repeal a provision in DOH Administrative Order 79 s2000 (*Safe Motherhood Policy*) that allowed TBAs to attend to deliveries.

2. *Midwives / Nurses / Medical Doctors / Support Staff*. Professionals should be developed as a team in the community. Being a team, each of these health professionals have to fulfill specific roles that must be properly supported by policies (e.g., the expected roles of midwives should be examined vis-à-vis restrictions in the *Midwifery Law*). Skills should be complementary and upgraded according to standards on obstetric and newborn care. Capacity-building should be kept abreast, with policy changes and with the retooling needed to address the human resource vacuum experienced in some areas.

DOH-retained hospitals can be mandated to spearhead trainings and capability-building activities that will ensure competent service delivery.

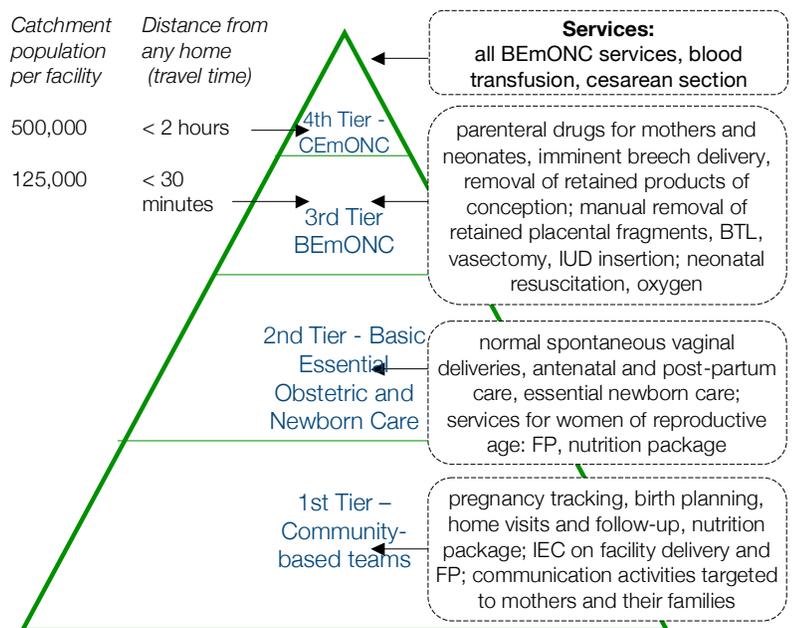


Figure 3. The four-tiered service delivery model

Integrate maternal and newborn care services in a package that can be universally accessed through the 4-tiered service delivery model.

The integrated package should have both the core and complementary services. The overall package is designed to reduce the exposure to, and the severity of maternal risk by putting together related interventions according to life-cycle stages (antenatal, delivery, post-partum, post-natal and in-between pregnancies) to avoid missed opportunities (DOH, 2008c). Since the core services will target the direct causes of maternal and newborn deaths, they should therefore consist of a combination of known effective interventions surrounding labor, delivery and the immediate postpartum period.

On the other hand, complementary services will minimize the contribution of the underlying causes of mortality, namely, inadequate family planning, and undernutrition. Effective family planning needs to be pursued further since it is one of the most cost-effective interventions in preventing maternal deaths should. Likewise, the ‘window of opportunity’ for nutrition programs (from pregnancy, birth and up to 2 years of age) should be maximized (Bryce *et al.*, 2006; refer to *Health Policy Notes* Issue 1). Antenatal and postnatal visits provide appropriate venues to improve family planning and nutrition practices.

Deliver pertinent child survival strategy service packages through the same 4-tiered service delivery model.

The integrated, cost-effective, CSS—comprising eight essential and three area-specific packages—should likewise be made universally available. Using the same service delivery model as that for maternal-newborn health is feasible by fitting in interventions to the appropriate tier of service facility. Efforts will be made to harmonize strong effective vertical programs with the strategy (DOH, 2008a). Moreover, the delivery of area-specific packages (e.g., malaria) will be coordinated with other similar programs already existing outside the Family Health Office (Basilio, 2008).

Prioritize interventions and resources to the underserved geographic service areas using applicable indicators (e.g., MMR, NMR, IMR).

Owing to the inadequate resources, the need to prioritize has been acknowledged. As previously mentioned, health performance varies across regional and sub-regional levels. Low-performing areas can be targeted as priority areas. Establishing more sensitive indicators would be very useful and should be coordinated with the National Epidemiology Center (NEC). To enhance the response at the local level, improved data quality must be coupled with the capability of local partners to analyze and act on their own data (DOH, 2008a).

Implement a localized, targeted communication tool designed to overcome barriers to the routine use of essential maternal, newborn and child health services.

A localized strategy that will empower mothers to routinely choose the best facility for delivery should be in place. To be empowered, mothers and their immediate families should be knowledgeable about what, where, how, and when to avail of effective and quality interventions. The simple message that ‘safe delivery is affordable and accessible’ should be put across. Each community can then make its own local government accountable to have these life-saving services available.

Develop a grant mechanism and other financing schemes to make the strategy work in a devolved health system.

Existing local health systems (e.g., province-wide, inter-LGU) should be harnessed to manage a given service area and ensure its sustainability. Technical assistance from the DOH can be utilized in enhancing the necessary management skills. Negotiating performance-based grants or incentives with LGUs is a recommended leverage to ensure buy-in and heightened effort to make the strategy work (WHSMP2, 2007; DOH, 2008c). As the local implementers, LGUs can enforce maximal collaboration among stakeholders including the private sector. Monitoring and evaluation mechanisms (e.g., LGU scorecard) can help gauge performance. It is incumbent upon the DOH to consolidate its resources at the Central Office, centers for health development (CHDs), and DOH-retained hospitals and make these available for mobilization to implement the strategy for maternal, newborn and child health (DOH, 2008a). A comprehensive financial framework is suggested to include the following elements: (1) a provision that offers mothers, especially the indigents, with free access to the health system through several means (e.g., minimal to zero co-payment, cash transfer for transportation, free transport services); (2) incentives for institutional and individual providers, both in public and private sectors (e.g., PhilHealth reimbursement share, performance-based incentives, shares in user fees for paying clients, facility upgrading when needed); and (3) incentives for local government participation (PhilHealth capitation fund, DOH grants).

As the lead implementing agency, DOH should maximize the governance framework within DOH in establishing and scaling up the integrated strategy.

A proposed cooperation framework for all its partners (National Coalition of MDGs 4 and 5) is also a good opportunity for ensuring long-term and stable delivery.

Implementing and scaling up a unified strategy to save mothers, newborns and children is possible

Most cases of maternal and neonatal and childhood mortality congregate around labor, delivery and the immediately postpartum period. The difficulty in reducing the number of deaths is influenced by the continued preference of most mothers for home-based and TBA-assisted deliveries. Focusing interventions on the direct causes of deaths would require the integration of maternal and newborn health interventions. To provide these interventions, home-based, TBA-assisted deliveries must be shifted to facility-based, professionally-attended deliveries. A 4-tiered service area is a configuration of facilities designed to ensure wide coverage and sustainable service delivery. The service area will serve as the vehicle to provide integrated maternal and newborn services that is linked with CSS. Targeting low performing areas can fast track the attainment of goals. Efforts to provide effective strategies must be coupled with interventions to empower mothers to utilize life-saving packages. Performance-based grant mechanism is the best way to make the strategy work in a devolved health system.

References

Basilio J (2008) *Maternal-Newborn-Child health, A life stage approach*, presented during the DOH Policy and Standards Development Team (PSDT) and Sectoral Management and Coordination Office (SMCO) Program Implementation Review (PIR), January 31, 2008, Antipolo City, Philippines.

Bryce J, Coitinho D, Darnton-Hill I, Pelletier D (2008) Maternal and child undernutrition: effective action at national level, *Lancet*, 371:510–526.

Campbell O, Graham W (2006) Strategies for reducing maternal mortality: getting on with what works, *Lancet*, 368:1284-1299.

[DOH] Department of Health (2003) *Philippine Health Statistics, 2003*. Manila: Department of Health, National Epidemiological Center (NEC).

_____ (2007) *Annual Report 2006, Managing reform investments towards the MDGs*. Manila: Department of Health.

_____ (2008a) *DOH - PSDT and SMCO PIR Plenary Discussion*, January 31, 2008, Quezon City, Philippines.

_____ (2008b) *DOH - PSDT and SMCO PIR Open Forum*, January 31, 2008, Quezon City, Philippines.

_____ (2008c) *Maternal-Newborn Health Policy and Strategy Framework*. Unpublished.

[DOST-FNRI] Department of Science and Technology - Food and Nutrition Research Institute (2003). *National Nutrition Survey (NNS)*, 2003. Manila: Department of Science and Technology.

Key Messages

- Majority of maternal and newborn deaths occur during labor, delivery and the first 48 hours post-delivery when skills, equipment, and facilities are inadequate to prevent deaths.
- Pregnancy complications are unpredictable and unpreventable. Prompt and appropriate management that can save mothers' lives need to be more accessible to significantly decrease the number of deaths.
- Under-five mortalities are preventable. Majority of infant mortalities occur at newborn period specifically during the first two days of life and the very slow decline of neonatal deaths decreased the overall decline of child mortalities during the past 10 years.
- High fertility, high unmet needs for family planning, and maternal and child undernutrition worsen the morbidity of both mothers and children.
- Health programs for mothers or children are separate and strategies are not integrated.
- To avert more maternal and newborn deaths, DOH needs to implement a unified strategic framework for Maternal and Newborn Health to be linked with the Child Survival Strategy.

Koblinsky MA, Campbell O, Heichelheim J (1999) Organizing delivery care: what works for safe motherhood? *Bulletin of the World Health Organization*, 77(7): 399–404.

[NSO] National Statistics Office (2007) *Family Planning Survey (FPS)*, 2006.

[NSO and ORC Macro] National Statistics Office, Philippines and ORC Macro (2004) *National Demographic and Health Survey (NDHS)*, 2003. Calverton, Maryland: NSO and ORC Macro.

[NSCB] National Statistical Coordination Board (2007) *Maternal mortality ratio 1990 to 2006*. Available at: <http://www.nscb.gov.ph/activestats/data/goals/goal5.asp> (last accessed on April 4, 2008).

Ronsmans C, Graham W (2006) Maternal mortality: who, when, where and why, *Lancet*, 368:1189–1200.

Singh S, Juarez F, Cabigon J, Ball H, Hussain R, Nadeau J (2006) The scope of the problem In: *Unintended pregnancy and induced abortion in the Philippines: causes and consequences*. New York: Guttmacher Institute.

Villa E (2008) Maternal-Newborn-Child Health Program, A challenge paper, presented during the DOH - PSDT and SMCO PIR, January 31, 2008, Quezon City, Philippines.

[WHO] World Health Organization (2000) *Child Health Epidemiology Research Group, core health indicators for Philippines 2000*. Available at: <http://www.who.int/whosis/indicators> (last accessed on April 3, 2008).

WHO/DOH/UNICEF (2007) *Making the Philippine Child Survival Strategy Work*. Available at: <http://www.who.int> (last accessed on April 3, 2008).

[WHSMP2] Women's Health and Safe Motherhood Project 2 (2007) *Project Implementation Manual*. Available at: http://www2.doh.gov.ph/whsmp2_studies.htm (last accessed on April 3, 2008).

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