Literature review on maternal and child health for Timor-Leste

30 June 2016

FINAL

Contents

Abbreviations ii

Executive summary iii

1. Introduction 1

1.1. Methods and limitations 1

2. MCH context in Timor-Leste 1

3. Evidence-base best practices for improving MCH in LMIC 2

3.1. Core services and tools effective in improving RMNCAH in contexts similar to Timor-Leste 2

3.1.1. Pre-conception 2

3.1.2. Maternal and newborn health 3

3.1.3. Child health 5

3.1.4. Adolescent health 7

3.2. Health system strengthening approaches to improving RMNCAH 7

3.3. Health enabling functions by non-health sectors 8

4. Summary and conclusions 9

Annex 1: MCH context in Timor-Leste 10

Key health indicators 10

The Timor-Leste health system 11

Annex 2: Essential interventions in maternal, newborn and adolescent health 12

Annex 3: The Global Strategy for Women’s, Children’s and Adolescents’ Health (2016-2030) 15

Annex 4: Every Newborn Strategic Objectives and Principles 16

References 17

Abbreviations

|  |  |
| --- | --- |
|  |  |
|  |  |
| CHW | Community health worker |
| DFAT | Department of Foreign Affairs and Trade |
| DHS | Demographic and Health Survey |
| LMIC | Low and middle income countries |
| MAM | Moderate acute malnutrition |
| MCH | Maternal and child health |
| MDG | Millennium Development Goals |
| MMR | Maternal mortality ratio |
| MNCH | Maternal, newborn and child health |
| ORS | Oral rehydration salts |
| PPH | Postpartum haemorrhage |
| RMNCAH | Reproductive, maternal, newborn, child and adolescent health |
| SAM | Severe acute malnutrition |
| SDG | Sustainable Development Goals |
| SHS | Specialist Health Service |
| TBA | Traditional birth attendants |
| WHO | World Health Organization |
|  |  |
|  |  |
|  |  |

REQUEST:

|  |
| --- |
|  |

Summarise current literature on global best practices for improving maternal and child health (MCH) in low and middle income countries (LMIC), including girls' health, to inform DFAT investments in Timor-Leste

Literature review on maternal and child health for Timor-Leste

Executive summary

Timor-Leste, like many other developing countries, has made significant advances in reducing preventable maternal and child deaths. Nevertheless, fertility rates and maternal, newborn and under five mortality rates remain among the highest in the region, with rural areas particularly at risk. Continued progress in improving health will require expanding coverage of essential health interventions to all women, newborns, children and adolescents.

The prime interventions for improving women’s and children’s health in low and middle income countries are complementary and mutually reinforcing. Interventions that improve the health of adolescent girls will also contribute to better newborn and child health. Five interventions should be universally available:

* Access to family planning methods so that couples can control the number and timing of births. This reduces the number of high risk pregnancies to adolescent and older women and improves the health of the current and last born child.
* Four antenatal visits during pregnancy enables women to receive effective preventive care such as tetanus vaccination, micronutrient supplementation, and, if required, intermittent preventive treatment for malaria, as well as being monitored for risks of complications.
* Women should give birth with skilled and equipped birth attendants who can manage the major complications which cause maternal and newborn mortality during labour and for 24 hours after birth.
* Women and newborns should be seen by a healthcare worker four times in the first six weeks.
* Most infant and child deaths can be avoided through exclusive breastfeeding for the first six months and continued breastfeeding until age two with complementary feedings of local foods; handwashing, safe drinking water and hygienic disposal of faeces; routine immunisations plus new vaccines targeting diarrhoeal diseases and pneumonia; appropriate treatment of non-severe diarrhoea, pneumonia and malaria; and micronutrient supplementation.

Maternal and child health services need to be embedded in a wider health system. Introducing new interventions should be done in a manner which strengthens the entire health system. Similarly, introducing interventions requires thinking about all of the components of the health system. Evidence gathered from implementing maternal and child health interventions is pointing to new system-level approaches to delivering health care. These include but are not limited to: how healthcare workers are supported to change their practices; redefining scope of practice to bring more service delivery closer to the community, including by empowering community health workers to deliver services; and reducing financial barriers to access health care.

1. Introduction

Globally there has been excellent progress in reducing maternal and child deaths. A collaboration of UN technical agencies and the World Bank concluded that from 1990 to 2015 the maternal mortality rate (MMR) fell by nearly 44 per cent to an estimated 216 deaths per 100,000 live births.(1) Child mortality has also declined remarkably over the same period from 91 deaths to children under five years per 1,000 live births in 1990 to 43 in 2015.(2) Neonatal deaths (infants less than one month old) also declined from 36 to 19 deaths per 1,000 live births in the same period.

Despite progress, too many women and children die from preventable causes. The United Nations Global Strategy for Women’s Children’s and Adolescents’ Health released in 2015 is aligned with the Sustainable Development Goals (SDG). It calls for eliminating preventable deaths by 2030. That translates into a maternal mortality rate of 70 per 100,000 births globally and no country with a rate higher than 140. Newborn deaths are to be reduced to 12 per 1,000 live births and under 5 deaths to 25 per 1,000 live births in every country. Epidemics of some of the major diseases affecting women and children in some regions, such as AIDS, malaria and tuberculosis are to be eliminated.

To achieve these goals by 2030 in low and middle income countries (LMICs) and in Timor-Leste in particular will require application of existing and new evidence as well as the full engagement of all levels of the health system, civil society, communities, families and individuals. The evidence of what is effective is changing and so are the health challenges, as new health issues emerge or receive renewed attention.

This paper presents a summary of maternal and child health indicators in Timor-Leste to frame a literature review of essential health interventions and health system strengthening approaches to continue to reduce preventable deaths to women and children.

* 1. Methods and limitations

This literature review focuses on strategies to improve maternal and child health outcomes recommended by global health technical institutions and researchers. Most of the material produced has been approved by the World Health Organization (WHO) and published by them or in partnership with other lead agencies. A partnership with the Lancet Publishing Group has enabled the distribution of detailed systematic reviews of evidence on which WHO guidelines are based.

The emphasis is on literature published in the last four years. The purpose of the review is to inform DFAT’s broad MCH policy direction in Timor-Leste. Expert clinical input, informed by the Timor-Leste context, is essential to design specific policies and effective programs.

1. Context of maternal and child health in Timor-Leste

Data on maternal and child health in Timor-Leste is primarily from the Timor-Leste Demographic and Health Survey (DHS) that was conducted in 2009-10 (3) and supplemented by estimates prepared by international technical agencies on trends from 1990 to 2015.(1, 2, 4) Together the data indicate steady declines in maternal and child mortality. Nevertheless, current estimates place Timor-Leste as having among the highest mortality rates in the Pacific and South East Asia regions.

Coverage of essential maternal and child health (MCH) interventions is poor, especially in rural areas. Use of modern contraceptives is low and the majority of women give birth outside of a health facility without the assistance of a skilled birth attendant. One out of four children are not protected with routine childhood immunisations and many women and children are under-nourished. More details about Timor-Leste health indicators, including data sources are in Annex 1.

1. Evidence-based best practices for improving maternal and child health
   1. Core services and tools effective in contexts similar to Timor-Leste

Maternal and newborn care should not be thought of in isolation but rather as a continuum, linking pre-conception, antenatal, intrapartum, postnatal care and adolescent health care (Figure 1).(5) However, an integrated approach should not detract attention from the high risk during labour and for 24 hours after birth when the risk of maternal and newborn death is the highest.(5)

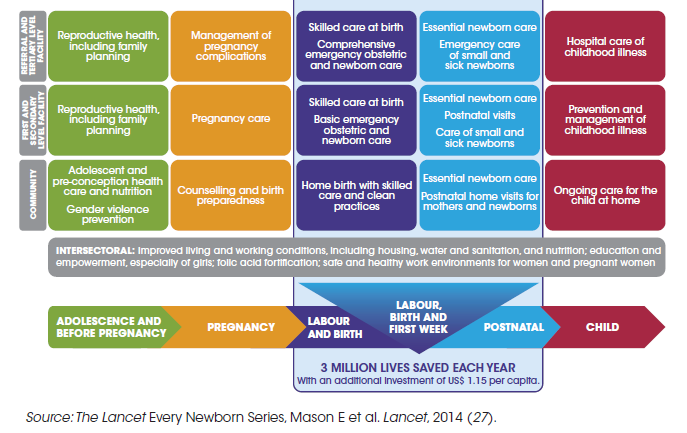


Figure 1: Continuum of essential MCH interventions

* + 1. Pre-conception

Access to family planning methods and knowledge enables women and their partners to choose the timing and number of children and is fundamental to improving maternal and child health outcomes. Preventing births in adolescents and increasing the interval between births to two years and enabling couples to avoid unplanned pregnancies when they have achieved their desired family size has a significant impact on reducing maternal, newborn and child health. Adolescent girls and older women are at higher risk of pregnancy complications and young mothers are more likely to be under-nourished increasing the risk of preterm births.(6, 7) Births spaced less than two years apart result in the first child being weened earlier than recommended, leading to higher risk of childhood illnesses.(8) The mother’s nutritional status is also likely to be compromised due to births close together leading to a greater risk of preterm births and poorer child health.(7)

* + 1. Maternal and newborn health

Health services for maternal and newborn care consist of care of the pregnant woman (antenatal care), care during labour (intrapartum care) and care of the mother and newborn immediately after birth and for up to six weeks (postnatal care). This section also addresses some new interventions and strategies that are gaining global support for becoming part of essential care.

* + - 1. Antenatal care

There has been no significant change in WHO recommendations for antenatal care since the last update in 2009. WHO continues to recommend that all pregnant women have four antenatal visits. The list of recommended services for uncomplicated pregnancies is in Annex 2.

The proportions of women attending four antenatal visits during their last pregnancy has remained disappointingly low in many LMICs. A recent review of the surveys of women in 15 countries identified these common reasons for not attending antenatal services:

1. For women who have already had an uncomplicated delivery, they do not perceive a need to attend if the current pregnancy seems normal
2. Cost (foregone income, user fees, or transport)
3. Other service issues (when and where services are available, eligibility and treatment of women by healthcare workers)(9)

These obstacles are being overcome through community mobilisation, health system improvements and cash transfers. Community health workers (CHWs) or other respected community members can assist in stressing the importance of antenatal visits, health facilities can make antenatal services more accessible and respectful (see section 3.2 on health system strengthening), and women who face exceptionally high costs which deter use can be provided with vouchers or incentives.

* + - 1. Intrapartum care for mothers

The Lancet series on maternal survival published in 2006 as a collaboration between global technical agencies and researchers, was a landmark publication that documented the magnitude of maternal mortality (10) and the evidence of effective interventions to prevent and manage risk factors.(11) WHO published guidelines following this publication in 2007 with an update in 2009.

The 2006 reports focused attention on the intrapartum period. While it is possible to identify and manage some risk factors during the antenatal period or even pre-conception through improved nutrition and avoiding pregnancies to girls and very young women, most maternal deaths occur during labour, delivery or the first 24 hours postpartum and most complications cannot be predicted or prevented.(11) Globally the four complications leading to maternal mortality are obstetric haemorrhage (primarily postpartum), severe pre-eclampsia and eclampsia and puerperal sepsis. Complications are rare and require skill to manage; timely access to appropriate health care is essential.

There are no magic bullets to preventing maternal mortality. Each complication requires a range of interventions depending on severity and the capacity of the facility and healthcare provider. The interventions stated in the 2006 review remain relevant and many have been adopted in an increasing number of countries. These include the management of pre-eclampsia with magnesium sulphate, postpartum haemorrhage (PPH) with an uterotonic drug, and infection control including use of antibiotics. However, with varying levels of severity and in the cases of rarer complications, other interventions are required, usually by more skilled healthcare workers at better equipped facilities.

Many countries have chosen to pursue the objective of universal facility based births with, at a minimum, essential obstetrics care and emergency obstetric and newborn care is available and a system for referring serious cases to higher level facilities for comprehensive emergency care.

The attention now is on interventions in settings where home-based deliveries without a skilled birth attendant remain common. Many women in poor or isolated areas continue to rely on traditional birth attendants (TBA). The evidence is that with training and close support from qualified birth attendants (including clean birth kits and resuscitation equipment), maternal mortality can be reduced by 24 per cent. However, these outcomes are not as good as with qualified birth attendants and, without training and support, TBAs have no effect on maternal survival.(12)

The provision of an uterotonic drug immediately following birth in the form of oxytocin injections is now commonplace for most health facility births to prevent PPH. Where women are giving birth in a community based setting, with or without a skilled birth attendant, there is international evidence of the efficacy of advanced distribution of misoprostol tablets to women, to be taken during labour to prevent PPH. As misoprostol can be used to induce labour, some countries have been reluctant to approve community-based distribution. However, randomised controlled trials in low income countries have found that CHWs distributed the drugs appropriately and that there was a high level of support for women to receive and to take the tablets in the third stage of labour.(13)

Unsafe abortions and incomplete abortions is one of the four principal causes of maternal mortality in developing countries.(14) Globally the number of abortion-related maternal deaths has been decreasing, but they remain high or are increasing in LMIC where fertility rates are still high.(15) Lowering the maternal mortality rates requires increasing access to contraceptives, safe abortion and quality post-abortion care for women who have had an unsafe or incomplete abortion.(16)

In recognition that many of the obstacles to poor maternal and newborn outcomes can be addressed by the community, with the support of quality health services, WHO has recently updated its guidelines for working individuals, families and communities to support maternal and newborn health.(17) They include interventions directed at the pregnant woman, her family and the whole community. The recommendations most relevant for the Timor-Leste context and with a higher level of evidence than “very low” are in Box 1.

* Healthcare workers should support women and their families to have a birth preparedness and complication readiness plan including the desired place of birth; the preferred birth attendant; the location of the closest facility for birth and in case of complications; funds for any expenses related to birth; supplies and materials necessary to bring to the facility; an identified labour and birth companion; an identified support to look after the home and other children while the woman is away; transport to a facility for birth or in the case of a complication; and identification of compatible blood donors in case of complications.
* Encourage a companion of choice to be present during labour. This companion does not need training.
* Clarity in the role of trained traditional birth attendants to provide support to pregnant women and families.
* Participatory learning circles with women’s groups increases knowledge and local solutions in areas, particularly in rural areas with poor access to health services.

Box 1: Relevant recommendations for health promotion to improve maternal and newborn health outcomes (WHO guidelines)

* + - 1. Newborn care

Newborn survival has lagged behind the substantial declines in maternal and under-five survival. In 2014 WHO and UNICEF launched *Every Newborn: An action plan to end preventable deaths* following extensive consultation with stakeholders from technical agencies and governments in LMICs. Neonatal deaths (deaths to infants in the first 28 days) account for 44 per cent of under-five deaths globally. Box 2 describes the main causes of newborn deaths and demonstrates the conviction that the rate of stillbirths and newborn deaths can be reversed.

As Mason and colleagues argue, it is necessary to challenge the prevailing norms that newborn deaths and stillbirths are preventable.(5) More than 70 per cent of newborn deaths are estimated to be preventable with known interventions for addressing preterm births, birth asphyxia and other complications during the third stage of labour, and infection. Most of these interventions can be conducted in community-based setting such as a health centre, with referrals for specialist care for the ill child.

**We have solutions to address the main causes of newborn death:** More than 80% of all newborn deaths result from three preventable and treatable conditions – complications due to prematurity, intrapartum-related deaths (including birth asphyxia) and neonatal infections. Cost-effective, proven interventions exist to prevent and treat each main cause. Improving quality of care around the time of birth will save the most lives, but this requires educated and equipped health workers, including those with midwifery skills, and availability of essential commodities. – *Every Newborn (2014, p 6)*

Box 2: Tackling newborn deaths, from *Every Newborn* (2014)

The prevention of preterm births and the deaths of infants born prematurely is the focus of intense research activity. However, researchers have not yet identified effective interventions that can be used throughout a population in developing country contexts. One promising intervention is corticosteroid treatment given antenatally to mothers at risk of a preterm birth. This treatment is widely used in hospital settings in developed countries but a multi-country trial in developing countries found that it was actually associated with higher neonatal death rates.(18) Other research is focusing on multiple micronutrient supplementation during pregnancy.

* + 1. Child health

Global mortality of children under five years old halved from 1990 to 2011, with 40 per cent of that decline attributed to fewer deaths from pneumonia and diarrhoea.(19) Under-nutrition underlies an estimated 45 per cent of child deaths.(7) A package of essential prevention and treatment interventions, the effectiveness of most of them have been known for decades, can make substantial improvements in child survival.

* + - 1. Prevention

Immunisation remains the single most important investment for child health. Depending on the epidemiology in the country and available funds, introduction of new vaccines against *Haemophilus influenzae*, *Pneumococcus*, and rotavirus (the most common cause of severe dehydrating diarrhoea in infants worldwide) can be very effective life-saving tools. Oral cholera vaccines are also very effective in endemic areas.

Community support for childhood vaccines is usually very high in LMICs as individuals have personal experience of the devastating effects that these diseases have. Low immunisation rates are a supply-side failure and require an integrated approach to service delivery, workforce development, and supply chain. Routine childhood immunisation services, including outreach in remote, isolated or particularly disadvantaged communities, is the most effective way to increase and sustain high immunisation coverage. (20) Immunisation days can play a health promotion role or be an effective way to respond to an outbreak or drive to eliminate a disease, but they are not a substitute for routine immunisation services.

Exclusive breast feeding to six months and continued breastfeeding up to two years has a dramatic effect on child mortality. Not breastfeeding is associated with almost six times the risk of death in children 6-11 months and more than two times the risk in children 12-23 months.(19) However, awareness of the importance of breastfeeding is low in most countries.

Regular handwashing, safe drinking water and faeces disposal reduces infections in children.

* + - 1. Treatment of common illnesses

As most deaths from diarrhoea are due to dehydration, timely interventions are lifesaving. Home administration of oral rehydration solution (ORC) prevents dehydration and death. Despite it being decades since the benefit of this treatment was established, coverage is still low but can be increased through social marketing of ORS packets combined with health education messages. Treatment with zinc and antibiotics for dysentery reduces severity. The use of zinc treatment for diarrhoea or pneumonia is almost negligible in developing countries.(19)

Antibiotics for children with pneumonia without wheezing can be administered safely and effectively by CHWs.

These simple interventions can have a big effect. If there was 90 per cent coverage of breastfeeding promotion, community based zinc or ORS treatment for diarrhoea and case management of pneumonia, 64 per cent of diarrhoea deaths and 74 per cent of pneumonia deaths would be prevented *among the 40 per cent poorest families*.(19)

* + - 1. Nutrition

Nutrition is frequently neglected as a cause of child mortality (Box 3). The proportion of children who are stunted has declined much slower than other child health indicators. A package of interventions has now been shown to be effective at preventing under-nutrition and treating severe acute malnutrition (SAM). These interventions can be implemented successfully in rural and isolated areas if there are good outreach antenatal and child health services or effective referral by CHWs. These interventions are:

“Maternal undernutrition contributes to 800,000 neonatal deaths annually through small for gestational age births; stunting, wasting, and micronutrient deficiencies are estimated to underlie nearly 3.1 million child deaths annually. … The current total of deaths in children younger than 5 years can be reduced by 15% if populations can access ten evidence-based nutrition interventions at 90% coverage.”

Box 3: Tackling child under-nutrition from Bhutta et al 2013

During pregnancy:

* Iron and iron-folate supplementation
* Multiple micronutrient supplementation for women with nutrition deficiencies
* Dietary advice and balanced energy protein supplementation for malnourished women
* Universal salt iodisation

For infants and young children:

* Exclusive breastfeeding up to six months
* Complementary foods and continued breastfeeding

For children at risk of malnourishment:

* Vitamin A supplementation
* Preventive zinc supplements

For malnourished children:

* Management of severe and moderate acute malnourishment, primarily in the community through targeted food distribution including use of ready-to-use therapeutic foods
  + - 1. Emerging issues

Many LMICs are facing the “double burden” of children having infectious and non-communicable diseases. Preventable infectious diseases still kill children in these countries but, with greater prosperity and universal health coverage they can be reduced, even for the most disadvantaged populations. Increasingly countries will need to address causes of child deaths which are emerging or have become more prominent as death rates from other causes decline. These diseases and risk factors include:

* indoor air pollution from the continued use of solid cooking fuels;
* congenital anomalies;
* non-communicable diseases (chronic respiratory diseases, acquired heart diseases, childhood cancers, diabetes, and obesity); and,
* injuries including drowning, poisoning and road crashes.

Annex 3 describes the key strategies to address these emerging issues.

In addition, the burden of disability in childhood (and adolescence) is now recognised.(21) Disability is closely related to poverty, a result of illness and injuries which are both more prevalent in poor households and communities and inadequately treated.

* + 1. Adolescent health

WHO defines adolescence as aged 10 to 19 and has recently released its first adolescent health strategy.(22) The strategy recognises that adolescence is a time of change and risk taking as young people develop their own identities and make major decisions. While still at risk of infectious diseases, additional causes of mortality and morbidity in the second decade include road traffic injuries, suicide and interpersonal violence.

In regards promoting improved maternal and child health outcomes, preventing children under age 18 to marry and delaying the age at first birth until after adolescence is critical. Adolescents need information and access to contraceptives, including condoms, to enable them to prevent unplanned and unwanted pregnancies, avoid sexually transmitted infections, including HIV, and reduce the likelihood of resorting to unsafe abortions. Adolescence is also a time to address anaemia, malnutrition and obesity—in both males and females—before they become adults.

* 1. Health system strengthening approaches

Weak health systems underlie poor maternal and child health care. Without strengthening the health system the introduction of new initiatives discussed above are unlikely to be implemented, sustained and reach the women and children who need them. The Global Strategy for Women’s and Children’s and Adolescents’ Health (Annex 3), the accompanying Every Newborn Action Plan (Annex 4) and the related Global Vaccine Action Plan, all take a systems approach to introducing new interventions to improve maternal and child health. These global strategies and plans utilise WHO’s six “building blocks” to describe the functions of a health system: leadership and governance; health service delivery; medical products, vaccines and technologies; health workforce; financing; and monitoring and evaluation (health information system).(20) In recognition of the importance of the community in safeguarding their own health, community demand is usually also included as a health system building block.

In designing new maternal and child health interventions, a health systems approach should be used to ensure that the intervention will strengthen the existing health system and will be robust enough to be sustained after the initial investment.(23)

Recent research into applying a health systems approach to improving health services has advanced knowledge of how to implement essential interventions. Three system level strategies are discussed here because they have been found to be critical in increasing use of maternal and child health services.

The first strategy is to improve the quality of health worker performance. Poor quality care has been recognised as a major system failing, reducing the use of effective healthcare practices and increasing mistrust between patients and healthcare providers. Although the research in what works to improve health worker performance has been known for some time, (24) it is rarely put into practice. Too many new health interventions fail because of an emphasis on training, rather than consistent, supportive supervision, and intrinsic and extrinsic incentives for healthcare workers’ to improve.(25)

A second strategy is the use of CHWs to mobilise communities to take part in preventive and treatment activities. CHWs have been shown to provide an important contribution to a health system, giving first line treatment for the major causes of childhood deaths.(7, 19) Implementing a program of community-based services requires integration with all of the other levels of the health system.

A third system wide approach to improving maternal and child health is to identify groups who face significant financial barriers to accessing services or implementing recommended health behaviours such as child feeding. Reduced user fees, vouchers and conditional cash transfers have been found to be cost-effective in improving the health of those are greatest risk of death.(26) As mortality rates reduce in LMICs, special efforts to target the most disadvantaged are necessary to achieve further declines.

* 1. Health enabling functions by non-health sectors

The survival of mothers and children is a concern of all members of a society and a priority for most governments. While the health sector will provide most of the inputs to prevent and treat, other sectors can play supportive and sometimes leading role in creating an enabling environment for improved health outcomes.

**Economic policies** Pro-poor economic policies that prioritise socioeconomic development through reduction of poverty, improved water and sanitation systems, increased productivity especially in the agricultural sector and greater opportunities for women’s and youth employment are important contributors to reductions in child mortality.(27)

**Education** - Policies which enable girls to enrol and remain in school, especially post-primary, will lead to delayed marriage and childbearing, longer periods between pregnancy, smaller families and more effective use of health services during pregnancy and labour and for treating the sick child.(28)

**Infrastructure** – Basic infrastructure such as roads, electricity, and telephone coverage connects isolated communities and health services, increasing access to routine and emergency health care.

**Water and sanitation** – Universal access to sources of safe drinking water and sanitation improves the health and well-being of children, mothers and whole communities.

**Gender** – Mainstreaming gender across all government policies and programs increases the likelihood that women’s and girls’ needs will be recognised and addressed, including greater opportunity for economic and civic participation.

1. Summary and conclusions

Research and experience in implementing MCH services means that effective packages of interventions and strategies now exist to make it feasible to achieve the goals to eliminate preventable maternal and neonatal deaths and substantially reduce child deaths due to the most common causes.

There is a lack of up-to-date data from the last few years on women’s and children’s health outcomes in Timor-Leste. With the significant investments in health and the improving economic situation, it is likely that the true situation has improved. With that caveat, several key indicators suggest where the Government of Timor-Leste, DFAT and other development partners should target investments in MCH:

* Greater access to family planning information and methods
* Promotion of breastfeeding
* Improved immunisation coverage
* Access to basic and comprehensive emergency obstetric and newborn care
* Improved nutrition status of adolescents, women and children through micronutrient supplementation and targeted feeding if necessary

In addition to adding or increasing the coverage of essential interventions, a health systems strengthening approach to MCH services is needed. Three systems issues emerged while producing this literature review; they should be explored further to determine if actions should be taken. A Joint Review of health system bottlenecks in Timor-Leste conducted in 2012 identified two issues 1) health system very low levels of stock for essential commodities and 2) maldistribution of the healthcare workforce, leading to a concentration in urban areas.(29) A third health system issue is access to health services for rural and isolated communities. DFAT has been supporting strategies improve women’s access to health services in Timor-Leste. One program is connecting pregnant women and mothers to healthcare workers by telephone and another has been to improve ambulance services. There may be a need to consider if these strategies will be sufficient in the more rural and isolated areas of the country where there is chronic underutilisation of health services. If so, then evidence on the efficacy of CHW models could be considered. The existing village mid-wife / CHW program could be enhanced to included targeted women’s and children’s interventions.(30)

Annex 1: MCH context in Timor-Leste

Key health indicators

The most recent information on maternal and child health in Timor-Leste are primarily from the 2009-10 Demographic Health Survey (DHS)(3), the Timor-Leste 2013 Census Summary and recent estimates from UN bodies. A new DHS is planned for 2016-17 and the report from the 2015 Census is expected this year. Based on the available information, it is clear that the country has made major improvements in child mortality and possibly maternal mortality, but the rates are still high compared to other countries in the region. Timor-Leste also continues to have challenges in maternal and child nutrition.

Despite dropping from 7.8 to 5.7 births per woman between 2003 and 2009 (Table 1), the total fertility rate in Timor-Leste is the highest in South-East Asia and the Pacific.(3)

Table 1: Total fertility rate – Timor-Leste

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Source | 2010-2015  UN statistics (32) | 2009-10  TLDHS  (2007-2009) | 2003 DHS  (2001-2003) | 2002 MICS  (2001-2002) |
| Total fertility rate | 5.9 | 5.7 | 7.8 | 7.4 |

Also according to the DHS 2009—10, 14 per cent of Timorese women have given birth before reaching age 18 and seven per cent of women age 15-19 have already had a birth or are pregnant with their first child.

Timor-Leste’s contraceptive (modern methods) prevalence rate of 22.3 percent is the lowest in the DFAT Indo-Pacific region.(31) The unmet need for contraceptives is 31.5%.(3) The Government of Timor-Leste has set a target of a contraceptive prevalence rate of 40 per cent by 2015. Data collected for the next DHS will give an indication of whether this target was met.

The 2009-10 DHS indicated that 86 per cent of women were having at least one antenatal visit for the last pregnancy. According to the DHS 2009-10 only half (53 per cent) of urban women giving birth in the last five years, delivered at a health facility; in rural areas the figure was only 12 per cent. Thirty per cent of births in the country were delivered by a skilled birth attendant. The 2011-2030 National Strategic Development Plan calls for 65 per cent of Timorese women to have an assisted birth by 2015.

Maternal mortality ratios (MMR) are extremely difficult to measure, especially in small populations such as Timor-Leste, because maternal deaths are rare. The most commonly quoted MMR is from the 2009-10 DHS, 557 per 100,000 live births. Using a standardised estimation method, a collaboration of technical agencies prepared *Trends in maternal mortality 1990 to 2015.* It estimates that Timor-Leste met its Millennium Development Goal target of reducing MMR from 1995 to 2015 by more than 75 percent, and actually reduced it by 80 per cent (Table 2). (1)

Table 2: Trend in MMR in TLS

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Year** | 1990 | 1995 | 200 | 2005 | 2010 | 2015 | **% change in MMR between 1990 and 2015** |
| **MMR** | 1080 | 897 | 694 | 506 | 317 | 215 | **80.1** |

MMR estimates have been rounded according to the following scheme: < 100 rounded to nearest 1; 100–999 rounded to nearest 1; and ≥ 1000 rounded to nearest 10.

Although recent estimates are not available, it does appear that deaths to children under five years (child mortality), under one year (infant mortality) and under one month (neonatal mortality) have been declining in Timor-Leste. The DHS estimates suggest a fall of 23 per cent from 2003 to 2009 or from 83 to 64 deaths of children under five years per 1,000 live births. Infant mortality was most recently estimated at 44 deaths per 1,000 live births per year for 2010-2015 by the UN Population Division, dropping from 50 in 2005-2010. (32) And the DHS also estimates neonatal mortality declined from 39 per cent to 22 per cent from 1999 to 2015. The 2009-10 DHS found 70 per cent of deaths of children under the age of five happened in the first year of life.

According to the WHO global vaccine data base, in 2014 77 per cent of children received their third dose of the DPT vaccination, the usual measure of childhood immunisation coverage.

In Timor-Leste stunting the rate for children under 5 years exceeds 50 per cent, one-third of women are under-nourished and 21 per cent are anaemic.(29)

The Timor-Leste health system

Medical and health care is a human right for all citizens enshrined in the Timor-Lest Constitution. The government has a duty to “establish a national health system that is universal, general, free of charge and, as far as possible, decentralised and participatory”.(30)

The health system in Timor-Leste comprises mainly public sector, with a growing private sector which includes international organisations, INGOs, non-profit organisations and for-profit organisations.

Currently, primary health care is provided through 69 community health centres, 313 health posts and 43 maternity clinics, as well as through integrated community health services (Servisu Integrado du Saude Comunidade (SISCs)) introduced in 2008. There is one national tertiary hospital and four referral district hospitals for emergency, out-patient and in-patient care. The Timor-Leste Strategic Development Plan 2011-2030 identifies a target of all sucos (the smallest type of administrative district in Timor-Leste) with a population between 1500-2000 will have a health post by 2015, and by 2020 each health post having at least one doctor, two nurses and two midwives. Villages more than one hour’s walk from a health post will have a local village midwife or community health worker.(30)

According to a recent WHO health profile of Timor-Leste, there are 1.2 doctors, nurses and midwives per 10,000 population.(32) A priority of the Timor-Leste government, the Timorese health workforce is expected to increase by nearly 800 new physicians, most of whom trained in Cuba. It is expected that incentives will be required to encourage the new graduates to work in rural areas. (33)

Annex 2: Essential interventions in maternal, newborn and adolescent health

|  |  |
| --- | --- |
| **ANTENATAL CARE** | |
| **From WHO Recommended Interventions for Improving Maternal and Newborn Health 2009 edition (34)** | |
| **Routine care** | **Additional or specialist care** |
| Confirmation of pregnancy  Monitoring of progress of pregnancy and assessment of maternal and foetal well-being  Detection of problems complicating pregnancy (e.g., anaemia, hypertensive disorders, bleeding, malpresentations, multiple pregnancy)  Respond to other reported complaints.  Tetanus immunisation, anaemia prevention and control (iron and folic acid supplementation)  Information and counselling on self-care at home, nutrition, safer sex, breastfeeding, family planning, healthy lifestyle  Birth planning, advice on danger signs and emergency preparedness  Recording and reporting  Syphilis testing  Antimalarial intermittent preventive treatment (IPT) and promotion of impregnated bednets | Treatment of complications: anaemia, urinary tract infection, vaginal infection  Referral to treatment for sever complications of pre-eclampsia or eclampsia, bleeding, infection, other complications  Treatment of syphilis |

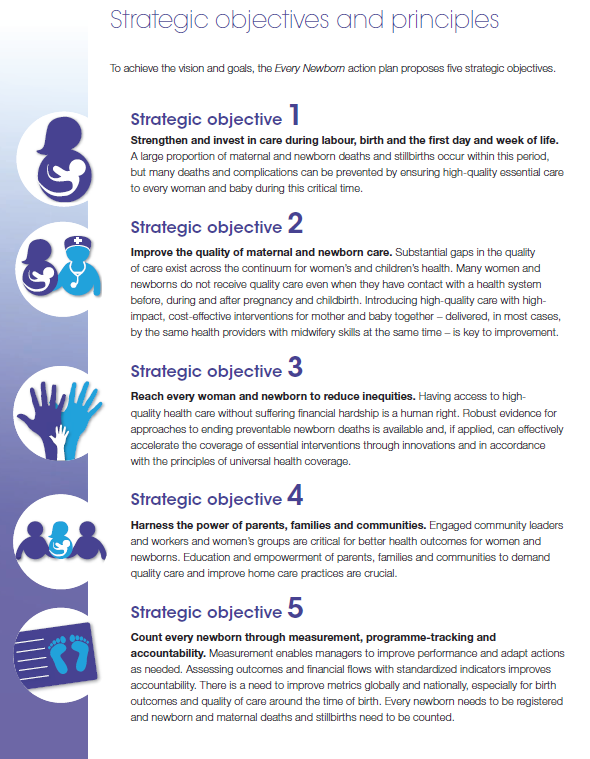
|  |  |  |  |
| --- | --- | --- | --- |
| **INTRAPARTUM CARE FOR MOTHERS AND NEWBORNS (INCLUDING IMMEDIATIALY FOLLOWING BIRTH)** | | | |
| **From Essential interventions for maternal, newborn and child health (35) A= interventions that are beneficial, B= interventions likely to be beneficial, C=Interventions with a trade-off between beneficial and adverse effects** | | | |
|  | **Health system level** | | |
| **Childbirth** | **Referral** | **First level** | **Community-based** |
| Prophylactic antibiotics for caesarean section | A | - | - |
| Management of postpartum hemorrhage (e.g. uterotonics, uterine massage) | A | B | C |
| Active management of third stage of labor to prevent postpartum hemorrhage | A | A | - |
| Cesarean section for absolute maternal indication | A | - | - |
| Induction of labor for prolonged pregnancy | A | - | - |
| Prophylactic uterotonics to prevent postpartum hemorrhage  Management of postpartum hemorrhage (e.g. uterotonics, manual removal of placenta, uterine massage) | A | B |  |
| Immediate thermal care | A | B | B |
| Initiation of exclusive breastfeeding (within first hour) | A | A | A |
| Hygienic cord and skin care | A | B | B |
| Neonatal resuscitation with bag and mask (professional health worker) | A | B | - |
| Case management of neonatal sepsis, meningitis and pneumonia | A | B | - |
| Kangaroo mother care for preterm and for less than 2000g babies | A | B | - |
| Management of newborns with jaundice | A | B | - |
| Surfactant to prevent respiratory distress syndrome in preterm babies | A | - | - |
| Continuous positive airway pressure (CPAP) to manage babies with respiratory distress syndrome | A | - | - |
| Extra support for feeding small and preterm babies | A | B | - |
| Presumptive antibiotic therapy for newborns at risk of bacterial infections | A | - | - |

|  |  |  |
| --- | --- | --- |
| **POSTNATAL CARE FOR MOTHERS AND NEWBORNS** | | |
| **From Highlights of the WHO 2013 Guidelines (36)** | | |
| **For mothers and newborns** | **For mothers** | **For newborns** |
| Provide postnatal care in first 24 hours for every  birth:  ─ Delay facility discharge for at least 24 hours.  ─ Visit women and babies with home births within the first 24 hours. | Regular assessment of mother’s condition during the first 24 hours. of vaginal bleeding, uterine contraction, fundal  height, temperature and heart rate (pulse) routinely during the  first 24 hours starting from the first hour after birth | Continue to promote early and exclusive breastfeeding (EBF) within delivery settings including antenatal care, at delivery, and in all postnatal care visits. |
| Provide every mother and baby a total of four  postnatal visits on:  ─ First day (24 hours)  ─ Day 3 (48–72 hours)  ─ Between days 7–14  ─ Six weeks | Subsequent assessments enquiries should continue  to be made about general well-being and assessments made  regarding the following: urination and urinary incontinence, bowel  function, healing of any perineal wound, headache, fatigue, back  pain, perineal pain and perineal hygiene, breast pain, uterine  tenderness and lochia.  Enquires made about breast-feeding | At each of the four postnatal care checkups, newborns should be assessed for key clinical signs of severe illness and referred as needed. There are nine clinical signs that can be assessed by a CHW or a skilled health care worker |
| Offer home visits by midwives, other skilled providers or well-trained and supervised community health workers (CHWs). | Counselling on danger signs, nutrition, hygiene, postpartum family planning and malaria prevention; antibiotics for women with third or fourth degree tears to prevent wound complications and psychosocial support to reduce risk or severity of postpartum depression. | Consider the use of chlorhexidine for umbilical cord care for babies born at home |
| Use chlorhexidine after home deliveries in high  newborn mortality settings. |  |  |
| Re-emphasize and support elements of quality  postnatal care for mother and newborn, including identification of issues and referrals. |  |  |

Annex 3: The Global Strategy for Women’s, Children’s and Adolescents’ Health (2016-2030)



Annex 4: Every Newborn Strategic Objectives and Principles



References

1. WHO, UNICEF, UNFPA, World Bank Group, UNPD. Trends in maternal mortality 1990 to 2015. Geneva: WHO, 2015.

2. United Nations Inter-agency Group for Child Mortality Estimation (UNIGME). Levels and Trends in Child Mortality. New York: UNICEF, 2015.

3. National Statistics Directorate (NSD), Ministry of Finance, ICF Macro. Timor-Leste Demographic and Health Survey 2009-10. Dili: NSD and ICF Macro, 2010.

4. United Nations Population Division. World Population Prospects: The 2015 Revision, New York: United Nations Department of Economic and Social Affairs; 2015 [Available from: <https://esa.un.org/unpd/wpp/DVD/Files/1_Indicators%20(Standard)/EXCEL_FILES/3_Mortality/WPP2015_MORT_F01_1_IMR_BOTH_SEXES.XLS>.

5. Mason E, McDougall L, Lawn JE, Gupta A, Claeson M, Pillay Y, et al. From evidence to action to deliver a healthy start for the next generation. The Lancet. 2014;384(9941):455-67.

6. Ahmed S, Li Q, Liu L, Tsui AO. Maternal deaths averted by contraceptive use: an analysis of 172 countries. The Lancet. 2012;380(9837):111-25.

7. Bhutta ZA, Das JK, Rizvi A, Gaffey MF, Walker N, Horton S, et al. Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? The Lancet. 2013;382(9890):452-77.

8. Rutstein SO. Effects of preceding birth intervals on neonatal, infant and under-five years mortality and nutritional status in developing countries: evidence from the demographic and health surveys. International Journal of Gynecology and Obstetrics.89:S7-S24.

9. Finlayson K, Downe S. Why Do Women Not Use Antenatal Services in Low- and Middle-Income Countries? A Meta-Synthesis of Qualitative Studies. PLoS Med. 2013;10(1):e1001373.

10. Ronsmans C, Graham WJ. Maternal mortality: who, when, where, and why. The Lancet. 2006;368(9542):1189-200.

11. Campbell OMR, Graham WJ. Strategies for reducing maternal mortality: getting on with what works. The Lancet. 2006;368(9543):1284-99.

12. Wilson A, Gallos ID, Plana N, Lissauer D, Khan KS, Zamora J, et al. Effectiveness of strategies incorporating training and support of traditional birth attendants on perinatal and maternal mortality: meta-analysis. BMJ. 2011;343.

13. Smith J, Gubin R, Holston M, Fullerton J, Prata N. Misoprostol for postpartum hemorrhage prevention at home birth: an integrative review of global implementation experience to date. BMC Pregnancy and Childbirth 2013;13(44. doi: 10.1186/1471-2393-13-44).

14. Grimes DA, Benson J, Singh S, Romero M, Ganatra B, Okonofua FE, et al. Unsafe abortion: the preventable pandemic. The Lancet.368(9550):1908-19.

15. Kassebaum NJ, Bertozzi-Villa A, Coggeshall MS, Shackelford KA, Steiner C, Heuton KR, et al. Global, regional, and national levels and causes of maternal mortality during 1990&#x2013;2013: a systematic analysis for the Global Burden of Disease Study 2013. The Lancet.384(9947):980-1004.

16. Sedgh G, Singh S, Shah IH, Åhman E, Henshaw SK, Bankole A. Induced abortion: incidence and trends worldwide from 1995 to 2008. The Lancet.379(9816):625-32.

17. WHO. WHO Recommendations on Health Promotion Interventions for Maternal and Newborn Health 2015. Geneva: World Health Organization, 2015.

18. Althabe F, Belizán JM, McClure EM, Hemingway-Foday J, Berrueta M, Mazzoni A, et al. A population-based, multifaceted strategy to implement antenatal corticosteroid treatment versus standard care for the reduction of neonatal mortality due to preterm birth in low-income and middle-income countries: the ACT cluster-randomised trial. The Lancet. 2015;385(9968):629-39.

19. Bhutta ZA, Das JK, Walker N, Rizvi A, Campbell H, Rudan I, et al. Interventions to address deaths from childhood pneumonia and diarrhoea equitably: what works and at what cost? The Lancet. 2013;381(9875):1417-29.

20. WHO. Global Routine Immunization Strategies and Practices: A companion document to the Global Vaccine Action Plan. Geneva: WHO, 2016.

21. WHO, World Bank. World Report on Disability. Geneva: WHO, 2011.

22. WHO. Health for the World's Adolescents: A second chance in the second decade. Geneva. Online <http://www.who.int/,aternal_child_adolescent/topics/adolescence/second-decade/en/:> 2014.

23. Department of Foreign Affairs and Trade (DFAT). Health for Development Strategy 2015-2020. Canberra: Australian Government, 2015.

24. Rowe AK, de Savigny D, Lanata CF, Victoria CG. How can we achieve and maintain high-quality performance of health workers in low-resource settings? Lancet. 2005;366:1026-35.

25. Yamey G. Scaling up global health interventions: a proposed framework for success. PlLoS Medicine. 2011;8:e1001049.

26. Bassani DG, Arora P, Wazny K, Gaffey MF, Lenters L, Bhutta ZA. Financial incentives and coverage of child health interventions: a systematic review and meta-analysis. BMC Public Health. 2013;13(3):1-13.

27. French D. Did the Millennium Development Goals Change Trends in Child Mortality? Health economics. 2015.

28. Viner RM, Ozer EM, Denny S, Marmot M, Resnick M, Fatusi A, et al. Adolescence and the social determinants of health. The Lancet. 2012;379(9826):1641-52.

29. UNICEF. Situation Analysis of Children in Timor-Leste. Dili: UNICEF, 2013.

30. Government of Timor-Leste. Timor-Leste Strategic Development Plan 2011 – 2030. Dili: 2011.

31. UN Population Division. World Contraceptive Use 2015 New York: United Nations, Department of Economic and Social Affairs, 2015 Contract No.: POP/DB/CP/Rev2015.

32. WHO. Timor-Leste Health Indicators 2016 [Available from: <http://www.who.int/goe>.

33. Cabrala J, Dussaulta G, Buchana J, Ferrinhoa P. Scaling-up the medical workforce in Timor-Leste: challenges of a great leap forward. Social Science & Medicine. 2013;96:285-89.

34. WHO. WHO Recommended Interventions for Improving Maternal and Newborn Health. Geneva: World Health Organization, 2009 Contract No.: WHO/MPS/07.05.

35. Lassi ZS, Salam RA, Das JK, Bhutta ZA. Essential interventions for maternal, newborn and child health: background and methodology. Reproductive Health. 2014;11(1):1-7.

36. WHO, Maternal and Child Survival Program. Postnatal Care for Mothers and Newborns: Highlights from the World Health Organization 2013 Guidelines. Washington DC: WHO and Jhpiego, 2015 Contract No.: WHO/RHR/15.05.