

Theme: *Helping Mothers Bear Healthy Babies*

*“There's no tragedy in life like the death of a child. Things never get back to the way they were.”*

**Dwight David Eisenhower**  
President of the United States  
1953-1961

For far too many families in the developing world, what should be the joyous celebration of new life becomes instead a time of mourning. Husbands lose wives, children lose mothers, mothers and fathers lose a child. Death as a result of pregnancy and childbirth is far too common for both mother and newborn.

The loss of the mother is especially devastating. In addition to the emotional impact on the family, her death means that someone must take over the myriad of tasks for which she is responsible — hauling water, collecting firewood, working in the fields, cooking, cleaning and more. Often her young daughters are withdrawn from school to work in her place.

“Every year, more than one million children are left motherless and vulnerable because of maternal death. Children who have lost their mothers are up to ten times more likely to die prematurely than those who have not.”

UNFPA

But even if both mother and child survive, many challenges lie ahead for young children. Childhood mortality is high in the developing world from preventable causes such as pneumonia, diarrhea and malaria.



One organization that is bringing its expertise and experience to addressing the problems of maternal and newborn mortality and morbidity in rural Nepal is this month's *Dining for Women* recipient, **One Heart World-Wide**. **One Heart** is creating a “**Network of Safety**” to improve the lives of women and newborns during pregnancy and childbirth in two remote rural areas of Western Nepal. The **Network of Safety** includes health provider training, health facility improvements and community outreach programs to ensure pregnant women and their newborns have access to necessary care. (To learn more about **One Heart World-Wide**, see the **Program Fact Sheet** for July 2013.)

**Note:** This **Food for Thought** focuses primarily on infant and child mortality and morbidity. For an in-depth look at the subject of **maternal mortality**, please see **Food for Thought** for the November 2012 **Jungle Mamas** program in Ecuador – <http://bit.ly/1agcTLz>

In January 2013, One Heart World-Wide founder Arlene Samen visited the Jungle Mamas program and began a collaboration to share OHW's **Network of Safety** model with the Achuar villagers. Jungle Mamas and One Heart will work as a team to expand their reach and make sure that no woman or baby dies in childbirth. Samen says, “The warrior strength and vision the Achuar people have for protecting their territory in the Amazon Rainforest reminded me of the warrior-like spirit of the Tibetans.” Read more at <http://www.pachamama.org/news/new-partners-for-jungle-mamas-in-2013>

## UN Millennium Development Goals



### 4 Goal 4: Reduce Child Mortality

**Target:** *Reduce by two thirds, between 1990 and 2015, the under-five mortality rate*

According to the **UN MDG Report 2012**, considerable progress has been made worldwide in reducing under-five mortality. In the developing world as a whole, the mortality rate declined by 35 percent; from 97 deaths per 1,000 live births in 1990 to 63 in 2010. Even though world population has grown, under-five deaths worldwide fell from more than 12 million in 1990 to 7.6 million in 2010. Sub-Saharan Africa has the highest rate of under-five mortality in the world, with Southern Asia the second highest rate.

But a number of countries in both regions have made substantial progress. Nepal is one of six countries that have recorded a decline of over 60 percent, or more than 4.5 percent a year on average. Nepal's under five mortality rate has decreased from 134.6 in 1990 to 48 in 2011, and the infant mortality rate from 93.5 in 1990 to 34 in 2011.

Three factors significantly improve the likelihood that a child will survive the first five years—living in an urban area, being born into a family in the top 20 percent in income, and especially being born to a mother with a primary education. The areas in which **One Heart World-Wide** works are both rural and poor, with little education for girls.

The Millennium Development Goals (MDGs) are eight international development goals that all 193 United Nations member states have agreed to achieve by the year 2015. The goals are:

1. Eradicating extreme poverty and hunger
2. Achieving universal primary education,
3. Promoting gender equality and empowering women
4. Reducing child mortality rates,
5. Improving maternal health,
6. Combating HIV/AIDS, malaria, and other diseases,
7. Ensuring environmental sustainability, and
8. Developing a global partnership for development.

Each of the eight goals has specific stated targets and dates for achieving those targets.



### 5 Goal 5: Improve maternal health

**Target 5.A:** *Reduce by three quarters the maternal mortality index*

According to the **UN MDG Report 2012**, the maternal mortality rate (number of maternal deaths per 100,000 live births) in South Asia for 2010 was 220. Nepal has been very successful with a rate of 170—a major improvement over the rate of 770 in 1990.

#### **Target 5.B: Achieve universal access to reproductive health**

- **Increase the proportion of women (15-49 years old) attended at least once by skilled health personnel during pregnancy:** Across the world, this figure has been steadily improving. Although Southern Asia lags behind other regions, it has progressed from 53 percent in 1990 to 71 percent in 2010. In Nepal, as noted above, basic care is difficult to access, especially in the rural areas. However, Nepal has made progress, moving from 7.4 percent in 1991 to 36 percent in 2011.
- **Reduce the number of births per 1,000 women aged 15-19:** In Nepal, the birthrate for this age group was 101 in 1990, falling to 81 in 2010. The birthrate for younger girls is not counted. Although marriage is forbidden before age 15, over 34 percent of Nepali brides are under that age.
- **Increase the proportion of women aged 15-49, married or in a union, who are using any method of contraception:** Contraceptive use in Nepal rose from 24.1 percent in 1991 to 49.7 percent in 2011.

- **Antenatal care coverage:** The percentage of Nepali women receiving at least one visit went from 15.4 percent in 1991 to 58.3 percent in 2011. The percentage receiving at least four visits went from 8.8 percent in 1996 to 29.4 percent in 2006.
- **Unmet family planning need:** There has been a slight improvement in Nepal. In 1991, 27.7 percent of women who desired access to family planning methods did not have it. By 2006, the percentage had been reduced to 24.7 percent.

Although our focus is on child mortality and morbidity, the health of the child is inextricably intertwined with the health of the mother. In June 2013, the highly respected British medical journal, **The Lancet**, published a series of papers titled **Maternal and Child Nutrition**. The focus on nutrition is critical, because adequate nutrition is the basis for child health from conception. The following are the key findings from the series:

- Iron and calcium deficiencies contribute substantially to maternal deaths.
- Maternal iron deficiency is associated with babies with low weight (<2500 g – 5 lbs. 8 oz.) at birth.
- Maternal and child under-nutrition and non-stimulating household environments contribute to deficits in children's development, health and productivity in adulthood.
- Maternal overweight and obesity are associated with maternal morbidity, preterm birth and increased infant mortality.
- Fetal growth restriction is associated with maternal short stature and underweight and causes 12 percent of neonatal deaths.
- Stunting prevalence is slowly decreasing globally, but affected at least 165 million children younger than 5 years in 2011; wasting affected at least 52 million children.
- Suboptimum breastfeeding results in more than 800,000 child deaths annually.
- Under-nutrition, including fetal growth restriction, suboptimum breastfeeding, stunting, wasting and deficiencies of vitamin A and zinc, cause 45 percent of child deaths, resulting in 3.1 million deaths annually.
- Prevalence of overweight and obesity is increasing in children younger than 5 years globally and is an important contributor to diabetes and other chronic diseases in adulthood.
- Under-nutrition during pregnancy, affecting fetal growth and the first 2 years of life, is a major determinant of both stunting of height and subsequent obesity and non-communicable diseases in adulthood.

#### **Newborn Mortality:**

A newborn is defined as a child from birth to 28 days. One quarter to one half of all newborn deaths occur within the first 24 hours of life, and 75 percent occur in the first week. Each year 3 million newborns die, making up 43 percent of the world's under-5 child deaths.

“At the time of birth, a baby's chance of survival increases significantly with the presence of a skilled birth attendant.”  
World Health Organization

An estimated 423,000 babies die each year in South Asia on the day they are born, according to **Save the Children**. Eighty percent of newborn mortality results from the following causes: Premature birth, low birth weight, infections, asphyxia and birth trauma.

**Premature birth** is by far the leading cause of newborn mortality and the second leading cause of death, after pneumonia, in children under five years. A premature baby is one born alive before the completion of 37 weeks of pregnancy. Every year, more than one in ten babies—about 15 million—are born premature. Over 60 percent of premature births occur in Africa and South Asia, but the ten countries with the highest numbers include Brazil, the

United States, India and Nigeria. It is a global problem, but more readily addressed in countries with easy access to medical care.

Risk factors for premature birth include:

- Adolescent pregnancy - generally resulting from child marriage.
- Lack of family planning so that pregnancies cannot be spaced.
- Unhealthy weight of the mother (underweight or obese).
- Chronic disease such as diabetes.
- Infectious diseases such as HIV.
- Substance abuse.
- Poor psychological health.

Survivors of premature birth may face a lifetime of disabilities, including learning disabilities and hearing and vision problems. They are also more susceptible to health problems in the future.

The other four major causes of newborn mortality are:

- **Low Birth Weight**, with the same risks factors as premature birth.
- **Infections** such as HIV and syphilis.
- **Asphyxia** (known by a variety of terms - birth asphyxia, perinatal asphyxia or intrauterine hypoxia). Asphyxia results when the newborn is deprived of adequate oxygen supply immediately prior to, during or just after delivery. Causes are numerous, but one major cause is fetal growth restriction due to the mother being underweight and small in stature. There isn't enough room in the womb for the child to grow.
- **Birth trauma** - an actual physical injury to the newborn in the birth process.

**Gender is another factor in infant and child mortality:** Girls have a natural survival advantage in the first four years of life because boys are more susceptible to a variety of health issues. In some countries, primarily India and China, gender is a major cause of newborn and infant mortality because of a strong preference for boys. In China, infant mortality is 24 percent lower for boys. In India, female infant mortality is slightly higher than for boys, but between ages one and five, the mortality for girls is 75 percent higher. The higher incidence of mortality for girls comes in many forms—from infanticide to neglect, starvation, skipping vaccinations, eschewing medical care and domestic violence. In both countries, abortions claim a high percentage of unwanted female fetuses.

Sex Differentials in Childhood Mortality  
Population Division, United Nations

Approximately 40 percent of child deaths under age five occur in the first four weeks of life, almost all of them in the developing world. The most fragile babies die in the first week of life. The breast milk produced at the end of pregnancy (colostrum) is recommended by the World Health Organization as the perfect food for the newborn, and feeding should be initiated within the first hour after birth. Suboptimum breastfeeding, together with fetal growth restriction, cause more than 1.3 million deaths, or 19.4 percent of all deaths of children younger than 5 years.

According to WHO and UNICEF, 30 to 60 percent of these deaths in the first four weeks could be prevented with effective postnatal care beginning shortly after birth. This would mean that appropriately trained personnel start home visits immediately, enabling the care provider to catch problems early with the newborn's health (infections, insufficient warmth, etc.) and with the mother (such as difficulty nursing). Timely intervention can solve problems before they do irreparable harm.

Our Dining for Women recipient, **One Heart World-Wide**, follows all the recommended pre- and postnatal protocols - including attending to the nutritional needs of the mother during pregnancy - bringing best practices in maternal and newborn care to women in the remote districts of Baglung and Dolpa in Nepal.

### Child Mortality

Child mortality is generally defined as the death of a child under five years old. Globally, more than a third of under-five deaths are attributable to under-nutrition. A child who is undernourished has a weakened immune system and is more susceptible to health risks. Children in the developing world are subject to additional health challenges, such as poor hygiene and repeated, prolonged exposure to indoor smoke from cooking fires.

### Stunting

Chronic under-nutrition during crucial periods of growth results in stunting - an irreversible condition that affects both body and brain. Stunting is defined as inadequate length/height for the child's age.

The most crucial time for adequate nutrition is the first 1,000 days, which covers pregnancy and the first two years of life. Therefore the mother's nutrition and health status are critical to her child's future.

"You really can't address stunting unless you clean up the sanitary environment. It doesn't matter how much extra food you try to stick into kids or how much dietary supplements you give them, it will all just go through them."

Clarissa Brocklehurst, Former Chief of Water, Sanitation and Hygiene for UNICEF, speaking about Indian children.



Stunting keeps children from performing well in school and leaves them susceptible to other health threats. According to UNICEF, about one in four children under age five is stunted.

Adequate nutrition is especially important for girls, since childbearing starts early in the developing world. Adequately nourished young mothers give their children a better start in life and break the cycle of stunting that holds children back from achieving their potential and pulling themselves and their families out of poverty.

### Major Causes of Child Mortality (World Health Organization):

- **Pneumonia** (18 percent) kills an estimated 1.2 million children under the age of five years every year – more than AIDS, malaria and tuberculosis combined. Although pneumonia is spread by virus or bacteria, there are environmental factors that weaken the child, including indoor air pollution caused by cooking and heating with biomass fuels (such as wood or dung), living in crowded homes and parental smoking. Nearly 50 percent of pneumonia deaths among children under five are due to particulate matter inhaled from indoor air pollution.
- **Premature birth complications** (14 percent).
- **Diarrhea** (11 percent) kills around 760,000 children under five and is the leading cause of malnutrition for children under five. Safe drinking water, adequate sanitation and hygiene would prevent most cases.
- **Complications during birth** (nine percent).
- **Malaria** (seven percent). In 2010, malaria caused an estimated 660,000 deaths (with an uncertainty range of 490,000 to 836,000), mostly among African children. In Africa, a child dies every minute from malaria.



## Food for Thought July 2013

The necessary knowledge, tools and interventions that could significantly reduce the incidence of death of infants and young children are relatively inexpensive. The cost to a country to ensure adequate nutrition for families and children would be easily recovered by the increased productivity of the population. Genuine development depends on the nurturing of human potential. But it takes resources and political will, as we can see in Nepal, to create and maintain the infrastructure for delivery of services. What is needed is the will to make those solutions a priority, particularly among the poor populations in the rural areas. As **Save the Children** puts it, in the Foreword to **Surviving the First Day**:

“Saving newborn lives will prevent incalculable suffering. It is also a vital piece of the global development agenda. The long-term economic prospects of poor countries depend on investments in the health, nutrition and education of the people, particularly the women and young children living there. Children surviving and staying healthy means more children in school and able to learn, which in turn means productive adults who can drive sustained economic growth.”

### Discussion Questions

1. Were you, your parents, or your grandparents young children before the availability of a polio vaccine? If so, you or your family members may remember going to school with children in braces, and swimming pools closed in the summer to prevent the spread of the crippling disease. What do you remember about that time, or what have family members shared?
2. Have you ever seen a seriously malnourished child? When and where? What was your reaction?
3. Do you have family members or friends who have suffered the tragedy of losing a child? How did that affect you? What do you recall from that experience?

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\* The Executive Summary and articles in the **Maternal and Child Nutrition** series can be downloaded from **TheLancet.com**. The user is required to create a password, but access is free.