



FIRST 1000 DAYS

A Position Paper
by the
Philippine Pediatric Society, Inc.

2017

This position paper was prepared by the Philippine Pediatric Society (PPS) Committee on Nutrition and its component society, the Philippine Society for Pediatric Gastroenterology Hepatology and Nutrition (PSPGHAN)

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Executive Summary

- **“The First 1,000 days” is the period that covers conception until the child reaches 2 years of age. It is a “critical window” of opportunities and outcomes.**
- **Nutritional damage that occurs during this period is irreversible.**
- **A decrease in the national prevalence of stunting (being short for age) is now the preferred indicator for measuring outcomes in nutritional interventions.**
- **There are nutrition-specific interventions that have been proven to work. The challenge is to integrate, accelerate and sustain actions.**
- **There are nutrition-sensitive interventions that may need to be prioritized by the government. These include agriculture, social welfare and education.**
- **The Philippine Pediatric Society is part of these solutions. It is a credible messenger that can help focus on interventions that work.**

Introduction

In 2008, *The Lancet* medical journal published a series of papers on maternal and child undernutrition. These papers identified a critical window of time between a woman's pregnancy and her child's second birthday, which was later coined "The First 1,000 days."

"The First 1000 days" is a period when a child has increased nutritional needs to support rapid physical growth and mental development. This is also a period when the mother and her child are most at risk of malnutrition and infections. It has been shown that growth faltering of the child begins in the mother's womb and continues until the child reaches 2 years of age. Children born with low birthweights (<2,500 grams) due to restricted growth inside their mothers' wombs are at great risk of remaining stunted. This early chronic exposure to inadequate nutrition is captured by one important anthropometric indicator- stunting (inadequate length/height for age). Any loss in linear growth during this period is not recovered later in life and catch up growth is minimal

Lack of adequate nutrients during this period of rapid brain development has long-term effects on cognition which are not recovered even with improvements in nutrition after 2 years of age. The outcome of brain development by the age of two years determines to a large extent a person's mental capacity for the rest of his/her life, including success in schooling and income earning.

Data from the 2013 National Demographic and Health Survey show that the prevalence of nutritionally at risk pregnant women in the country due to being underweight is 24.8% with the percentage of low birth weight babies being born in the country increasing from 21% in 2008 to 23.2% in 2013.

The Philippines ranks 9th in terms of the number of children under 5 years old who are moderately or severely stunted. Although the national prevalence of stunting is about 33% (3 out of 10) there are pocket areas wherein there is still a high magnitude and severity of stunting at $\geq 40\%$ (4 out of 10). These are MIMAROPA, Bicol region, SOCCSKSARGEN and Autonomous Region in Muslim Mindanao.

The right nutrition delivered at the right time within this 1,000-day window can have a profound impact on a child's ability to grow, learn and rise out of poverty. Children who get the right nutrition in their first 1,000 days are 10x more likely to overcome the most life-threatening childhood diseases. They complete 4.6x more grades of school. They go on to earn 21% more in wages as adults. More importantly, they are more likely as adults to have healthier families.

The Philippine Pediatric Society fully supports a programming focus of the government to this 1000-day period from conception up to 2 years of age.

The Solution

Simple solutions that focus on the first 1,000 days already exist. There is a need to focus on integrating and accelerating these evidence-based actions at scale and sustaining all initiatives.

Evidence-supported interventions that address very specific requirements of adolescent girls, pregnant women, mothers and their children have been identified (Table 1). These are referred to as nutrition-specific interventions.

Table1: Key Proven Practices, Services and Policy Interventions

| Adolescence/ Pregnancy | Birth | 0-5 Months | 6-23 Months |
|--|--|---|--|
| Improved use of locally available food | Delayed cord clamping | Exclusive breastfeeding | Timely introduction of adequate, safe and appropriate complementary feeding |
| Food fortification including salt iodization | Neonatal Vitamin K administration | Appropriate infant feeding practices | Continued breastfeeding |
| Micronutrient supplementation | Early initiation of breastfeeding (within an hour of delivery) | Immunization | Appropriate infant feeding practices |
| Deworming | Appropriate infant feeding practices | Vitamin A supplementation in the first 8 weeks after delivery | Micronutrient supplementation including vitamin A, Multimicronutrients; zinc treatment of diarrhea; Deworming |
| Fortified food supplements to undernourished mothers | Immunization | Multi-micronutrient supplementation | Community-based management of severe malnutrition |
| Antenatal care including HIV testing | Newborn Screening | Improved use of locally available foods, fortified foods | Food fortification including salt iodization |
| | | | Prevention and treatment of infectious diseases; immunization Handwashing with soap Improved water and sanitation practices |
| | | | Improved use of locally available foods, fortified foods, micronutrient supplementation/home fortification for undernourished women; Handwashing with soap |

Note: Blue: interventions for mothers
Black: interventions for infant/ child

References: (1) Lancet, Feb 2008,371(9610):417-440, (2) Lancet, Aug 3, 2013, 382, 452-77

Details of the Nutrition Specific Interventions Solutions

A. Interventions for women of reproductive age (WRA) (for midwives ,obstetricians and other birth attendants)

- a. Iron-folate supplementation including adolescent girls. Adolescence is defined as between 10-19 years old (World Health Organization definition).
- b. Multimicronutrients supplement with iron-folate-calcium for all pregnant women
- c. Maternal supplementation with balanced energy and protein including education and counselling on proper nutrition
- d. Vitamin A supplementation within the first 8 weeks post-delivery (200,000 IU single dose)
- e. Salt iodization or use of iodized salt
- f. Focused antenatal care which involves a minimum of 4 visits in normal or uncomplicated pregnancies must be encouraged
 - i. 1st visit: before 4 months
 - ii. 2nd visit: 6 months
 - iii. 3rd visit: 8 months
 - iv. 4th visit: 9 months

Note: For pregnant women with possible or expected complications, prenatal visits may be more frequent depending on the recommendation of the attending health personnel.

- g. Components of Focused Antenatal Care
 1. QUICK CHECK for emergency signs for which an immediate referral to the nearest hospital is recommended:
 - a. Vaginal bleeding
 - b. Severe abdominal pain
 - c. Looks very ill
 - d. Severe headache with visual disturbance
 - e. Severe difficulty of breathing
 - f. Fever
 - g. Severe vomiting
 - h. Unconscious/convulsing
 2. Registration and issuance of a mother and child record/ home based record.

3. Assessment:

First visit:

- a. Medical history: age, past medical history
- b. Obstetric history: last menstrual period, age of gestation, gravidity
- c. Prior Pregnancy (second time mothers)
 - i. Presence of convulsions
 - ii. Stillbirth or death
 - iii. Heavy bleeding during or after delivery
 - iv. Prior cesarian section, forceps or abortion
- d. Baseline haemoglobin, blood type, urinalysis. If haemoglobin is <8g/dl, refer to an obstetrician for work up and treatment of anemia. Check urine for the presence of protein.
- e. Screening for diseases that may complicate pregnancy.
 - i. Ask about family history (first degree) of diabetes and history of obesity; Previous pregnancy for difficult labor, large babies, congenital malformations and previous unexplained fetal death
 - ii. Look for signs of maternal overweight and obesity, polyhydramnios, signs of large baby or fetal abnormality, vaginal infection
 - iii. Refer for glucose test: at 24-28 weeks for low risk or immediately if high risk.
 - iv. Check for fever, burning sensation and abnormal vaginal discharge. Ask about episodes of fever or chills and take temperature. Ask about pain or burning sensation on urination. Ask about presence of abnormal vaginal discharge, itching at the vulva or if partner has urinary problems.
- f. Preventive measures: Immunize against tetanus (to be provided by the RHU)

Tetanus toxoid at least 2 doses: the first dose at first contact with the woman or at first antenatal visit and the last dose must be given at least 2 weeks before delivery.

- g. Discussion of a birth and emergency plan
 - i. A birth plan is a written document prepared during the first antenatal visit. This may change anytime during pregnancy if complications develop. It contains information on: the woman's condition during pregnancy, preferred place of delivery and choice of birth attendant, available resources such as transportation, companion and money for her childbirth and newborn baby, preparations needed such as blood donor, referral center should an emergency situation arise during pregnancy, childbirth or postpartum
 - ii. An emergency plan includes information on danger signs, signs of labor, where to go, how to go, what to bring, with whom to go, who will care for the home and the first child when she is away.

On all visits:

- a. Check duration of pregnancy (AOG)
- b. Ask for bleeding/danger signs during pregnancy
- c. Check record for previous treatments received during this pregnancy
- d. Prepare birth and emergency plan
- e. Ask patient if she has concerns
- f. Give education and counselling on family planning.
- g. Check for hypertension. If BP is above 140-90 early in pregnancy, referral to a doctor is made. If diastolic BP is 90 mmHg or higher, repeat measurement after 1 hour rest. If diastolic BP is still 90 mmHg or higher, ask the woman if she has 1)severe headache 2) blurred vision 3) epigastric pain
If urine has protein: and all the above are present, referral for possible pre-eclampsia should be made.

B. Interventions in neonates

- a. Delayed cord clamping

- i. Delayed cord clamping is approximately 1-3 minutes after birth (NOT <1 minute after birth) for newly born term or preterm babies who do not require positive pressure ventilation. This will result in a significant increase in newborn haemoglobin and higher serum ferritin concentration at 6 months of age.
- b. Neonatal Vitamin K administration
- i. One dose of intramuscular vitamin K after birth will reduce clinical bleeding at 1-7 days of life including bleeding after circumcision.
 - ii. Term babies 1 mg IM soon after birth
 - iii. Preterm babies <1000g, 0.5 mg IM soon after birth
 - iv. Dose of oral vitamin K if intramuscular vitamin K cannot be given i.e. home births and refusal of parent or if with no health care worker who could administer, 3 separate doses need to be given as follows:
 - o 2 mg oral soon after birth
 - o 2mg oral at 3-7 days
 - o 2mg oral at 6 weeks
- c. Kangaroo mother care for promotion of breastfeeding and care of preterm and small for gestational age (SGA) infants. It has 3 parts namely,
- i. Skin-to-skin contact at birth and even short periods during day or night
 - ii. Exclusive breastfeeding
 - iii. Support to the dyad- medical, emotional, psychological support
- d. Newborn Screening
- e. Immunization
- i. BCG vaccine, single dose given at birth
 - ii. Hepatitis B vaccine given at birth

C. Interventions in Infants and Children

- i. Promotion interventions and counselling on breastfeeding
- ii. Promotion of dietary diversity from 6 months to 23 months of age

- a. Provision of nutrition education
- b. Provision of additional complementary food.
- iii. Vitamin A supplementation
 - a. Vitamin A can reduce all-cause mortality by 24% and diarrhea-related mortality by 28% in children 6-59 months. It can also reduce the incidence of diarrhea and measles in this age group.

Table 2. Vitamin A prophylaxis schedule

| Individual | Oral dose | Timing |
|------------------------------------|------------|--|
| 0-6 months | 25,000 IU | 1-3 x over the first 6 months |
| 6-11 months | 100,000 IU | Once every 4- 6 months |
| >12 months up to 2 years | 200,000 IU | Once every 4-6 months for the next 2 years |

- iv. Immunization
 - a. DPT-Hib-Hep B vaccine, 3 doses given at 6-10-14 weeks of age
 - b. Oral Polio vaccine (OPV) , 3 doses given at 6-10-14 weeks of age, a single dose of Inactivated Polio vaccine (IPV) is given with the 3rd dose of OPV at 14 weeks
 - c. Pneumococcal conjugate vaccine (PCV) , 3 doses given at 6-10-14 weeks of age
 - d. Rotavirus vaccine given at a minimum age of 6 weeks with a minimum interval of 4 weeks between doses. The last dose should be administered not later than 32 weeks of age
 - e. Measles-containing vaccine given at 9 months of age
 - f. Measles-mumps-rubella (MMR) vaccine given at 12 months of age

- v. Iron supplementation in children
 - a. Iron supplementation will reduce the risk of anemia by 49% and iron deficiency by 76%.

Table 3. Iron deficiency Prevention Schedule

| Individual | Dose | Timing |
|--|----------------------------------|-------------------------|
| Preterm and Low birth weight infants <2500 g | 12.5 mg iron +50mcg folic acid | From 2-24 months of age |
| 6 -24 months | 12.5 mg iron + 50 mcg folic acid | From 6 - 24 months |

(based on a >40 % prevalence of anemia 6 months-23 months, 7th National Nutrition Survey)

vi. Multiple micronutrient supplementation

Because of the absence of clear policies to support integrated strategies to control micronutrient deficiencies in young children, multiple micronutrient provision is also recommended. There are small benefits on linear growth and weight gain and an associated increase in reasoning abilities.

vii. Preventive zinc supplementation

Preventive zinc supplementation in populations at risk (moderate to high prevalence studies >20) reduces the risk of morbidity from childhood diarrhea and acute lower respiratory tract infections and might increase linear growth and weigh gain in infants and young children.

- Daily dose of 10 mg zinc (any salt) over 24 weeks (6 months)

viii. Prevention of severe acute malnutrition (0-24 months)

Severe acute malnutrition defined as weight for height Z score <-3 and moderate acute malnutrition defined as weight for height Z score <-2 may exist during the critical first 2 years of life which may result in stunting.

- Provision of counselling and education on timely introduction of adequate, safe and appropriate complementary feeding
- Counselling and education on the importance of continued breastfeeding

- ix. Community based treatment of severe acute malnutrition
 - Provision of Ready-to-use therapeutic food (RUTF) is supported by trials in programme settings resulting in faster rates of weight gain and 51% greater likelihood to recover.
- x. Disease Prevention and Management

These interventions have the potential to affect health and nutrition outcomes by reducing the burden of infectious diseases.

Table 4. Disease Prevention and Management

| Intervention | Behavior/Treatment | Linkages with local government |
|---------------------------|---|--|
| WASH intervention | Handwashing with soap Campaign against open defecation | Improved water quality (LWUA) Improvement of public toilets |
| Maternal deworming | After the first trimester: Albendazole 400 mg single dose or; Mebendazole 50 mg SD or 100 mg BID for 3 days or; Pyrantel 10mg/kg single dose, repeat for the next 2 consecutive days Counselling on hygiene and sanitation | DOH- Rural health unit Reinforce messages on iron supplementation |
| Immunization | Ensuring access to routinely recommended infant/childhood vaccines for vaccine preventable diseases | DOH-Rural health unit |
| Newborn Screening | Screening of 6 disorders: congenital hypothyroidism, congenital adrenal hyperplasia, phenylketonuria, glucose-6-phosphate | DOH, National Institute of Health |

| | | |
|--------------------------------------|---|--|
| | dehydrogenase deficiency, galactosemia and maple syrup urine , all of which are causes of mental retardation if not addressed early | |
| Deworming in children | Children 12-24 months: Half tablet of albendazole (400 mg) every 4-6 months or; 1 Tablet of mebendazole (500 mg) every 4-6 months | Reinforce messages o iron supplementation program |
| Feeding practices in diarrhea | Continued feeding during a bout of acute diarrhea Reducing lactose containing food such as dairy if ingestion has a temporal relationship with passage of loose stools | Counselling on the integrated management of childhood illnesses (IMCI) |
| Zinc therapy for diarrhea | <6 months: 10 mg zinc for 14 days ≥6 months: 20 mg zinc for 14 days In conjunction with the use of low osmolarity ORS (oral rehydration solutions) | Rural health unit |

Other Solutions

Nutrition-specific interventions should be complemented by nutrition-sensitive approaches that address the underlying determinants of fetal and child development. Although viewed

as having lesser evidence of impact than the already enumerated approaches above, these are interventions that are implemented at large scale and can be effective at reaching poor populations. There are 4 sectors identified in the Lancet series.

All of these would need good governance and a strong political will.

1. Agriculture
2. Social safety nets
3. Child development and ,
4. Schooling

There is a need to boost agricultural production to reduce poverty, hunger and malnutrition in the long term in targeted areas. There are several pathways by which agriculture can affect nutrition outcomes. It can increase availability of food to the household. It increases income from wages earned or through marketing of produce. Women's participation in agriculture can affect their social status and may empower them by giving them control over resources and increase their decision making role regarding household food allocation.

Social safety nets are programs that distribute transfers to low-income households. These transfers may be in the form of food or cash and are meant to enhance resilience especially during times of crises. The main goal is to augment income but must be linked to other interventions that can improve their nutrition sensitivity such as linking transfers conditionally to improved health seeking behaviors.

Early child development interventions such as psychosocial stimulation and responsive feeding have been shown to improve cognitive development.

Schooling experience may be a strong determinant of the next generation's nutrition. Parental schooling is associated with child nutritional status. Analysis of several datasets showed that the risk of stunting is significantly lower among mothers with at least some primary schooling and the risk is even lower among mothers with secondary schooling. Paternal education in both primary and secondary levels also reduced the risk of stunting although the effect is smaller than maternal schooling.

Recommendations

Recommendations are based on lessons learned from multiple international studies.

1. Prioritize vulnerable and high risk groups.
Lessons from other countries who have explored the definition of vulnerability for children in their first 1000 days showed that risk factors and adverse outcomes tend to cluster along three risk factors present in the mother.
 - i. These mothers were described as young, single and without formal educational qualifications;
 - ii. Those who are likely to continue smoking in pregnancy and be in receipt of an income-tested benefit;
 - iii. Those living in areas of high deprivation, in overcrowded, rental housing and experiencing high levels of physical, emotional and/or financial stress during late pregnancy or during the postnatal period.
2. It is also most effective to target populations and communities than to try and reach individual families.
3. Multiple intervention styles also work better, than relying on one single approach. Therefore, a wide variety of services will be needed if the programmes seek to assist infants and their mothers.
4. Evaluate adequacy of Filipino infant, child and adolescent nutrition
5. Increase awareness and knowledge regarding pediatric nutrition of parents, caregivers and medical and allied practitioners

In many of these country reports, there are also recommendations on what to avoid.

1. certain universal policies such as home visits to mothers regardless of risk,
2. single focus on medical risks rather than social or environmental risks
3. programmes which are likely to reinforce inter-generational inequality i.e. received by advantaged children and not necessarily targeting those who are most vulnerable;
4. “one size fits all approach” especially for indigenous communities;
5. evidence-based interventions without considering local context

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