Healthy Moms, Healthy Babies, Healthy Communities

The First One Thousand Days of a Baby’s Life

David Vanderpool, MD
The first one thousand days of a child’s life are crucial for her proper development. Beginning at conception and spanning the first two years of life, many factors come into play that impact her potential to live a full life as an active contributor to her community. Before she is born, her mother’s nutritional status and health affect her growth. After birth and until the first year of life, she depends on her mother’s breast milk to supply her with the necessary nutrients to help her grow and remain healthy. As she begins to eat other foods, she needs a constant and well-balanced supply of protein, carbohydrates, fat, vitamins, and micronutrients to maintain proper brain development. These essential nutritional guidelines coupled with focused, appropriate healthcare measures during her first thousand days of life will dramatically improve her chances of living a full, happy, and productive life. Unfortunately, for many children in the world, these goals are unattainable.
UNICEF estimates that 85 million children under five years of age are underweight worldwide. (1) This means that 12.6%, or one out of eight children, are significantly below their normal weight. Tragically, forty-five million of these children are severely underweight or wasted and are struggling to survive. (1)

Often, this level of malnutrition starts before the child is born. The growth and increase in complexity of a babies’ brain during the first two trimesters are genuinely remarkable. By the first month of pregnancy, a baby has an estimated 10,000 neural connections in his brain. By the close of the second trimester, the number of neural connections has increased to a staggering ten billion. This ten millionfold increase requires a mother to take in a tremendous amount of nutritious food, vitamins, and micronutrients. During the second trimester, a pregnant woman needs to increase her caloric intake by about 20% to supply herself and her growing baby with sufficient energy. As she progresses through her third trimester, she needs to increase her calories by an additional 10%. (2) This may represent an impossible goal for many women in low and middle-income countries, but the consequences of not attaining this goal are dire.

Because the children of these women are not receiving the necessary nutrients to allow for appropriate brain development, they are more likely to have significant cognitive impairment that hurts their ability to function in society. Initially, these children may show growth restriction and missed developmental benchmarks. They are often small for age on growth charts and begin crawling or walking later than their peers. As they enter school, they may score worse on tests than other better-nourished children and are less likely to participate in activities requiring coordination, such as sports. They are more likely to have behavioral problems and typically don’t finish school. These challenges often accompany them into adulthood. They frequently aren’t capable of jobs requiring critical thinking skills because of their lack of education and may be too small to engage in manual labor. Because they may exhibit behavioral problems, they often struggle with sustainable employment and may turn to crime to support themselves.

The effect of malnourished children on their communities is significant. Low and middle-income communities, where most malnourished people live, can seldom afford to feed and house people who cannot support themselves. Many of these communities are perpetually overwhelmed under the mounting burden of repressive hunger.
Disease

If her mother is sick, a child may also experience delays at critical developmental milestones. Like undernutrition, disease is a significant factor in a child’s well-being. Untreated high blood pressure or diabetes in mothers can produce severe developmental problems in their children. From anatomical deformities to death, disease plays a critical role in a child’s disability.

Likewise, a child’s health is vital to his proper development. Common childhood diseases can wreak havoc. An earache can quickly progress to auditory disabilities; an untreated sore throat may become pneumonia. Many diseases eradicated by vaccines in the developed world are common in the developing world. Measles can cause encephalitis, and mumps can cause sterility. These and many other diseases cause widespread problems which impair a child’s development.

Community

The benefits to the mothers and children of proper nutrition and access to healthcare are apparent, but the impact extends to others as well. As these children grow up and enter the workforce, the productivity of their community increases. This brings more goods and services to the area, and more people’s lives are improved. The socioeconomic water level of the community begins to rise. These beneficiaries of proper nutrition and healthcare share their knowledge with others, and the progress becomes sustainable. This sustainability strengthens the rule of law and crime decreases, and productivity rises. For every dollar spent on the first thousand days, thirty-five dollars return in the form of increased productivity. (3)

Creating a Solution

The first one thousand days of a baby’s life are, simultaneously, some of the most vulnerable and some of the easiest to impact for good. The liabilities are apparent, and the solutions are correspondingly close at hand. To alleviate the suffering caused by malnutrition, one must prioritize food supply to those in need. To change the axis of the inaccessibility of healthcare, one must engage healthcare professionals in the low and middle-income countries where it is needed most. These strategies aren’t complicated. The challenges are met by people who are willing to engage these vulnerable populations within their communities.
The success of the first one thousand days of a baby’s life starts with her mother. Proper maternal health is crucial to the life of the child. We have seen tremendous improvement in the lives of moms and their children by starting a maternal health program in Haiti, where we live. This program focuses on addressing the most pressing needs of mothers and their babies. Initially, we found that the mothers in our area of Haiti were malnourished. We began a nutrition program that provided proper well-balanced nutrition, vitamins, and healthcare for these women. Thus began the initial attempt to break the cycle of hunger and disability that permeated our community.

As we progressed, we found that the mothers had very little education in mother and child health and nutrition; so we began an evidence-based curriculum (4) to address these deficiencies. As the class-work progressed, we found that more mothers were breastfeeding; a life-saving component of a baby’s diet. The mothers learned about proper nutrition and began serving their families healthy meals. They learned about childhood diseases and when to bring their baby to the doctor, and their children thrived. They learned about the birthing process, and they became less anxious about their baby’s upcoming birth. They learned about the perils of intimate partner violence and how to protect themselves. They were so proud of their education that they made up songs to teach others what they learned through the agency of music.

We found that many of our mothers suffered from pre-eclampsia, high blood pressure of pregnancy, which is a rapidly fatal condition for mothers and babies. We began to treat their high blood pressure aggressively, and we found that the maternal mortality rate plummeted. Our medical care expanded to include comprehensive treatment of both mothers and babies, and we saw a further reduction in both maternal and infant deaths. Additions of birth control, HIV diagnosis and treatment, and home visits to assess living conditions all have played a role in the refinement of the program and the saving of many lives.

Since its inception in 2012, we have had the opportunity to see the first babies in our Mother and Child Health program grow up. They are now nine years old, and many are in our school on the LiveBeyond Base. These children are thriving, they have achieved normal growth and weight measurements, and their grades are good. As they continue to flourish, they will contribute great things to their community, and hopefully, with sufficient numbers, they will be able to impact their country as well.

The first one thousand days of a baby’s life are the most foundational and provide the child with the needed resources to reach her potential in life. This begins with healthy moms who produce healthy babies.

Together, they provide for the health and stability of their communities.
Sources

1. Joint child malnutrition estimates (JME) (UNICEF-WHO-WB)
2. Eating right during pregnancy
3. Building Prosperity – 1,000 Days

David Vanderpool, MD, is the CEO of LiveBeyond, a nonprofit humanitarian organization founded by David & Laurie Vanderpool in 2005 dedicated to providing clean water, medical care and adequate nutrition to the poorest of the poor. His book LiveBeyond: A Radical Call to Surrender and Serve, details his story of transformation from living the “American Dream” to selling everything to move to the poorest country in the Western Hemisphere. Learn more about Dr. Vanderpool and LiveBeyond’s work at livebeyond.org.