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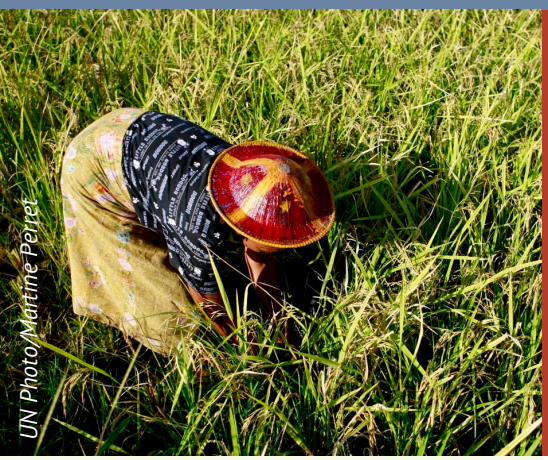
Center for Health and Aging

IMPACT & INNOVATION SERIES MARCH 2012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Improving Nutrition:
Early Childhood Development and Mobile Health

About the Authors

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An estimated 156 million children under the age of five are stunted, accounting for 28% of all children under five in the developing world.[1] Prevalence of stunting is even higher in sub-Saharan Africa and South Asia (61% and 52% of children, respectively).[2] Chronic undernutrition in early childhood results in diminished cognitive and physical development, putting those children who do survive at a disadvantage for the rest of their lives; as adults, undernourished children are often less economically productive and face a higher risk of disease.[3] Improved nutrition and early child development (ECD) are critical to achieving Millennium Development Goal (MDG) 1 (eradicating extreme hunger), 4 (reducing under-five mortality), and 5 (reducing maternal mortality).[4] Nutrition interventions are among the best investments countries can make to improve early childhood development.[5]

Technologies that support nutrition and ECD

The UN Secretary-General's Global Strategy for Women's and Children's Health (2010), "Every Woman, Every Child," was launched in 2010 and aims to save 16 million women and children under age five in the 49 lowest-income countries by 2015.[6] One of the core indicators of child nutrition is the exclusive breastfeeding rate. Exclusive breastfeeding is recognized as one of the most important interventions for reducing malnutrition among newborns. Maternal milk provides necessary nutrients, reduces illness (MDG 4), and dispenses many essential benefits to mothers (MDG 5), including reducing iron depletion and risk of postpartum hemorrhage and acting as a natural method of birth control.[7]

1 Stunted growth among children less than five years of age is defined by the World Health Organization (WHO) as height-for-age less than -2 standard deviations of the WHO Child Growth Standards median. See WHO Statistical Information System, http://www.who.int/whosis/indicators/compendium/2008/2nu5/en/.

2 "Supplementing Nutrition in the Early Years: The Role of Early Childhood Stimulation to Maximize Nutritional Inputs," World Bank, Newsletter, no. 48577, March 11, 2009.

3 UNICEF, Tracking Progress on Child and Maternal Nutrition: A Survival and Development Priority (New York: UNICEF, 2009).

4 United Nations Development Programme, "The Millennium Development Goals: Eight Goals for 2015," available at http://www.beta.undp.org/content/undp/en/home/mdgoverview.html.

5 WHO, "Global Strategy for Women's and Children's Health," 2010.

6 UNICEF, Tracking Progress on Child and Maternal Nutrition.

7 WHO, "Maternal, Newborn and Child Health: Breastfeeding Week," August 2011, http://www.who.int/maternal_child_adolescent/news_events/news/2011/03_08_2011/en/index.html.


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Martha Newsome is World Vision's global Vice President for Health, Nutrition, HIV and WASH portfolio, based in Washington DC. Prior to working at World Vision, she spent eight years working in nutrition and public health. She has served as the Africa HIV and AIDS Director and as Health Director and National Director for World Vision Mozambique. She is on the mHealth Alliance Board that is hosted in the UN Foundation.

Mobile technologies are increasingly used as a welcome tool to facilitate exclusive breastfeeding through personalized counseling of women using targeted text messaging, particularly in hard-to-reach, low-income areas. Mobile Technology for Community Health in Ghana is an excellent example of how text messaging can increase newborn and maternal health along the continuum of care. D-Tree is another example of an innovative nonprofit organization using information and communication technologies (ICT) to improve healthcare delivery, particularly the use of mobile technologies to empower healthcare workers to deliver high-quality health care at a low cost.[8]

Although not ICT based, other examples of effective technologies for improving childhood nutrition include micronutrient malnutrition technologies that are designed to deliver low-cost staple foods and condiments—such as flour, rice, salt, and soy sauce—with enhanced essential vitamins and minerals.[9] Such technologies provide essential iron required for cognitive function during the critical window of 6–24 months. For example, World Vision launched a nutrition program including home-based fortification, supplementation, and social marketing to improve infant and community nutrition education. The program involved the distribution of Sprinkles to 88% of children in World Vision program areas.[10]

Implementation and Engagement

At present, there are a range of mobile health (mHealth) and other technological platforms for improving nutrition. Despite these resources, the co-benefits of ECD are, by in large, neglected in mHealth discussions.[11] Perhaps one of the largest gaps is that existing interventions, and a lack of appropriate scale-up and implementation of proven "innovations," continue to be ignored. Scale-up and delivery of known technologies could be facilitated by the mHealth platform through improved cooperation and participation among a range of stakeholders, and by linking multiple frontline sector workers in addressing ECD (e.g., the use of text messaging for health, combined with proven nutrition interventions from agriculture, combined with conditional cash transfers using mFinancial Services, like MPESA by Safaricom in Kenya, for social protection measures, and last but not least joint monitoring of the effectiveness of such integrated interventions). At present, these issues are too often addressed in silos.

8 "mHealth Summit 2011: Mobile Phones Addressing Maternal and Child Health Issues," Atlas Corps, web log, December 26, 2011, http://www.atlascorps.org/blog/?p=465.

9 "Global Health Program: Overview," Bill & Melinda Gates Foundation, 2009.

10 Sprinkles are sachets (like small packets of sugar) containing a blend of micronutrients in powder form, which are easily sprinkled onto foods prepared in the home. Any homemade food can be instantly fortified by adding Sprinkles. For more information about the program, see the Sprinkles Global Health Initiative website, http://www.sghi.org/worldwide_program/mongolia_pg1.html.

11 S. Dentzer, "E-Health's Promise for the Developing World," Health Affairs 29, no. 2 (2010):229–30.


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Achieving comprehensive health delivery systems supported by mHealth tools requires meaningful, productive communication between stakeholders across numerous sectors. Such stakeholders include public health and healthcare delivery personnel, ICT specialists, economists and finance professionals, and evaluation and monitoring experts. Leadership is also needed from ministries, acting in concert, to provide innovators, companies, and organizations with the guidance necessary to scale up and implement existing technologies, while simultaneously developing meaningful mHealth tools targeted at national priorities. There is a distinct need for engaging all peers in the technology sector, and discussion should be extended to include stakeholders from across the healthcare spectrum and along the full continuum of care.

Looking Ahead: Investment by All Stakeholders

For nutrition and ECD, there is no one magic bullet. To achieve sustainable child well-being, the time during pregnancy and the first two years of life is a critical period that requires focused investment by all stakeholders.[12] Linking health, nutrition, and ECD with affordable integrated technologies, and investing in innovations through collaboration and convergence between multiple stakeholders such as NGOs, governments, universities, and private companies will be critical over the next decade to reduce intergenerational poverty among the most vulnerable population group in middle-income and low-income countries around the world.

12 World Vision Australia, "First 1000 Days," YouTube, September 18, 2011, http://www.youtube.com/watch?v=J3IQOb3Aw0M.

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Paul Stephenson has worked in international relief and development for over 20 years and is the Senior Director of Children in Development at WVI. He has managed teams involving research and development of children's needs around the world. He has been deeply involved in child development issues, and worked, for example, in Laos to shape organizational practices to enhance child protection in development agencies.

Published March 20, 2012 in the United States of America by The National Bureau of Asian Research (NBR)
http://www.nbr.org

Compiled by Erin Schneider and Brian Hutchinson.

Designed by Joyce Baltazar.