



Shoulder to Shoulder

Child Health Initiative

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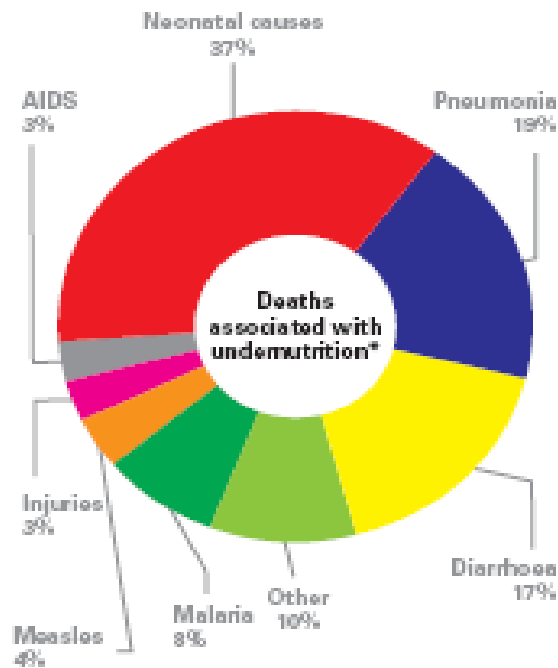
The International Child Health Dilemma

- This year nearly 11 million children will die before they reach the age of 5 years.
- 6 million—will die of diseases that could have been easily prevented or treated.
- We are hindered to help by are inability to deliver the appropriate interventions to the populations of need.

“The world’s forgotten children,” editorial” THE LANCET • Vol 361 • January 4, 2003

MAJOR CAUSES OF CHILD MORTALITY

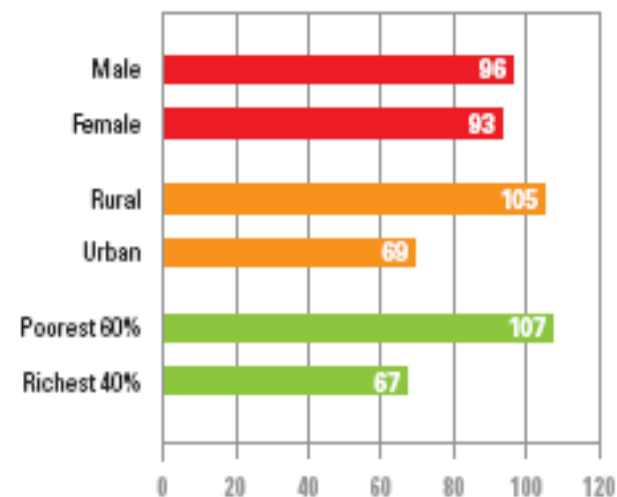
Global distribution of under-five deaths by cause (2000–2003)



* Undernutrition has been estimated to be an underlying cause in up to half of all under-five deaths. This estimate will be revised in 2008.

CHILD MORTALITY IS HIGHER AMONG CHILDREN LIVING IN RURAL AREAS AND IN THE POOREST HOUSEHOLDS

Under-five mortality rate (per 1,000 live births) by background characteristics (1998–2006)





HONDURAS:

Most recent estimate (latest year available, 2000-06)	Honduras	Latin America	
Poverty (<i>% of population below national poverty line</i>)	51
Urban population (<i>% of total population</i>)	47	78	47
Life expectancy at birth (<i>years</i>)	69	73	71
Infant mortality (<i>per 1,000 live births</i>)	31	26	31
Child malnutrition (<i>% of children under 5</i>)	17	..	13
Access to an improved water source (<i>% of population</i>)	87	91	81
Literacy (<i>% of population age 15+</i>)	80	90	89
Gross primary enrollment (<i>% of school-age population</i>)	113	118	113
Male	113	120	117
Female	113	116	114

World Bank. Data & statistics: country data, by income quintile. <http://go.worldbank.org>

Child Health Initiative

- An evidence based initiative to improve health of the children in the communities of Intubuca, Honduras where Shoulder to Shoulder has a presence.
- The focus of the CHI is to eliminate preventable death, and to enable each child to reach their social, educational, and economic developmental potential.







Five Pronged Approach

- CHI Workgroup
- Child Health Engagement Projects
- Community Initiated Development Projects
- Primary Care Network Formation
- Prenatal/Perinatal/Neonatal Center.

Child Health Initiative Think Tank

- Team of Child Health Experts
- Discuss researched interventions on child health
- Determine cost effective and evidence based tools for the Engagement projects
- Prioritize long term projects
- Continued development of a primary care network and Neonatal Care Center

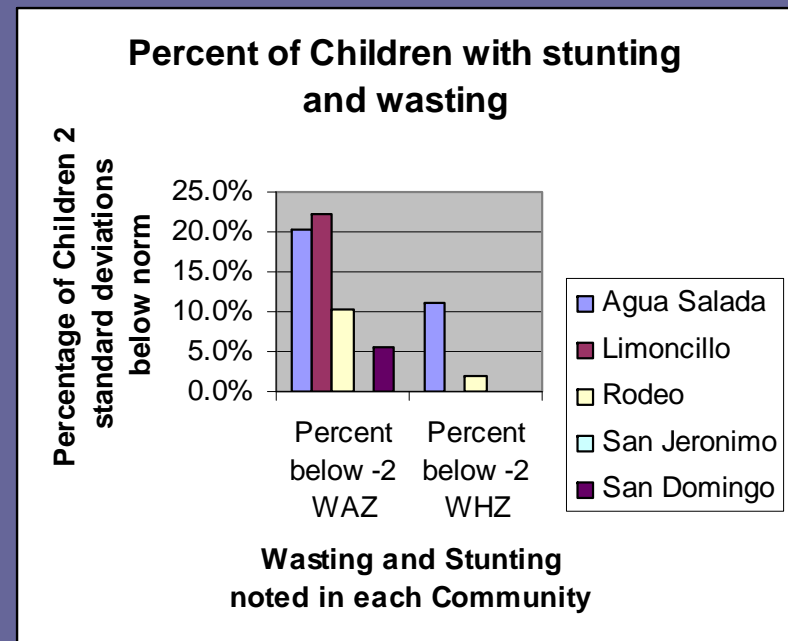
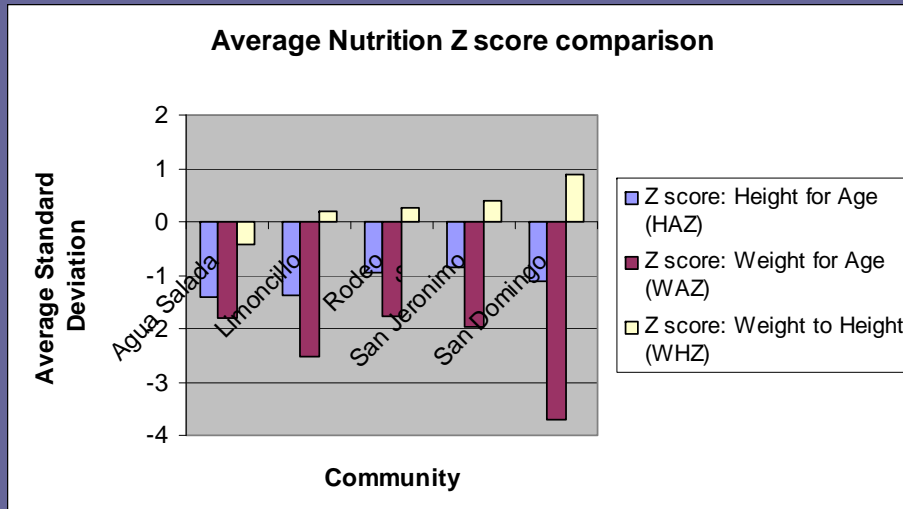


Child Health Engagement Projects

Child Health Engagement Projects

- **4000 Children in 100 communities**
- **Visit each primary site twice per year**
- **Deliver Evidence Based Interventions to decrease mortality and morbidity**
- **Address acute illness noted in community**
- **Obtain data on nutrition, education, anemia, and ventilation**
- **Introduce Communities to Long term STS initiatives.**

Graphic Results from Child Health Engagement to Agua Salada, September 2007



Disease Burden	Intervention	Disease Effected	Total Cost	Cost /child	Notes
Vitamin A deficiency	Supply 100,000 IU of Vitamin A to every child every 6 months	Diarrhea Pneumonia Measles Blindness	\$120	\$0.04	50% Reduction of mortality due to Measles
Zinc Deficiency	Zinc Supplementation to every child through fortified daily vitamins	Diarrhea Dehydration Stunting Malaria Anemia	\$3000	\$1.00	Reduction of Diarrhea course by 2 weeks
Iron Deficiency	Iron Supplementation to all children with hematocrit < 30	Anemia Mental Retardation Fatigue	\$450	\$0.15	Prevents permanent neurological damage in children under 2 and improves cognitive function at all ages
Parasite Infestation	Anti-Parasitic Medication (Albendazole) Single dose every 6 months	Helminthes infestation, Anemia, Malnutrition	\$2500	\$0.83	Decreases disease burden in total community
Dental Caries	Dental Varnish application (Duraphat) every 4-6 months	Dental Caries Disfiguration	\$3000	\$1.00	Prevents permanent loss of teeth
Myopia	Screen and provide glasses	Delayed and diminished learning	\$350	\$0.12	Myopia has low prevalence but disability is substabtial where it exists
Totals			\$9,920	\$3.31	

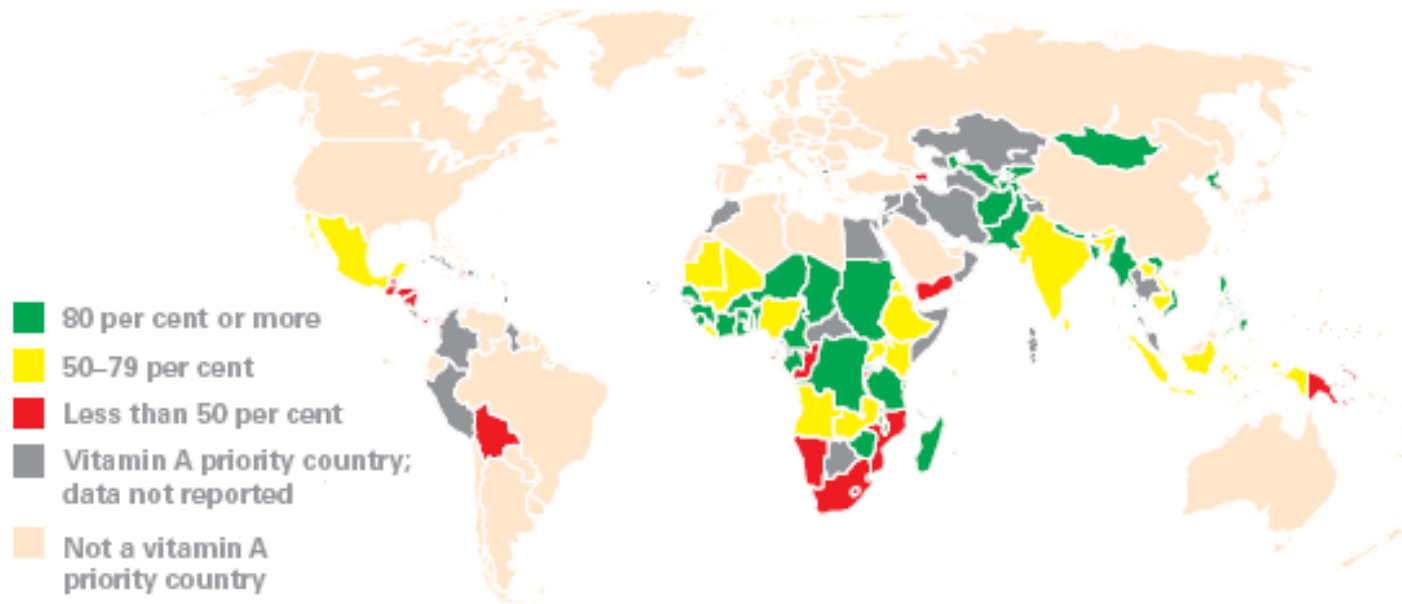
Vitamin A Deficiency

- Affects >127 million preschool children
- 1 to 3 million childhood deaths per year
- Supplementation reduces all cause mortality by 23%
- Treatment decreases mortality from measles, malaria, pneumonia, diarrhea
- [\[i\]](#) Miller, Melissa, Jean Humphrey, Elizabeth Johnson, Edmore Marinda, Ron Brookmeyer and Joanne Katz, "Why Do Children Become Vitamin A Deficient?" The Journal of Nutrition

Vitamin A Deficiency

30 PRIORITY COUNTRIES REACH 80 PER CENT OF CHILDREN WITH TWO DOSES ANNUALLY

Vitamin A supplementation coverage levels: two doses (2005)



Note: Coverage levels are shown for 103 countries considered a priority for vitamin A supplementation, i.e., countries where the under-five mortality rate is high or where vitamin A deficiency prevalence data indicate that deficiency control interventions may be required.

Zinc Deficiency

- May be single most important preventative supplement for children in the developing world.
Robert Black
- Decreases length of diarrhea by 24%
- Decreased treatment failure and death by 42%
- Zinc supplementation has the same effect in prevention of diarrhea as clean water and sanitation
- Therapeutic effects of oral zinc in acute and persistent diarrhea in children in developing countries: pooled analysis of randomized controlled trials^{1–3}” *The Zinc Investigators’ Collaborative Group, The American Journal of Nutrition*

Iron Deficiency

Leading cause of anemia in children.

- Lower participation in school
 - Decreased productivity
 - Mental illness
 - Mental and motor development delay [\[i\]](#)
 - Permanent neurological damage [\[ii\]](#)
 - Death
-
- [\[i\]](#) Hurtado, Elyse Krieger, Angelika Hartl Claussen, and Keith G Scott “Early childhood anemia and mild or moderate mental retardation” *Am J Clin Nutr* 1999;69:115–9.
 - [\[ii\]](#) Scrimshaw NW. Functional consequences of iron-deficiency. *J Nutritional Science Vitaminology* 1984;30:47–63.

Anti-parasitic therapy

- Increases health and productivity while decreasing death in the population.
- Periodic treatment in children, decreases the prevalence in the entire population.
- School absenteeism drops by 25%.[\[i\]](#)

[\[i\]](#) Kremer, Michael, and Edward Miguel, "Worms: Education and Health Externalities in Kenya" Poverty Action Lab Paper No. 6 September 2001

Dental Care

Good dental health decreases :

- Diseases burden
 - Disfiguration
 - Topical fluoride is the main stay for prevention of dental caries. [\[i\]](#)
 - Dental Varnish application every six months decreases caries and heals current caries. [. \[ii\]](#)
-
- [\[i\] Jacobsen P, Young D.](#) “The use of topical fluoride to prevent or reverse dental caries.” *Special Care Dentist*. 2003 Sep-Oct;23(5):177-9.
 - [\[ii\] Marinho VC, Higgins JP, Logan S, Sheiham A.](#) Topical fluoride (toothpastes, mouthrinses, gels or varnishes) for preventing dental caries in children and adolescents. *Cochrane Database Syst Rev*. 2003:CD002782.

Point of Care Interventions

- Base nutritional state subjects children to more severe infections.
- Treat noted needs with the appropriate antibiotics, anti-parasitic therapies and ointments.
- Face to face interaction emphasizes our core value that every individual is important

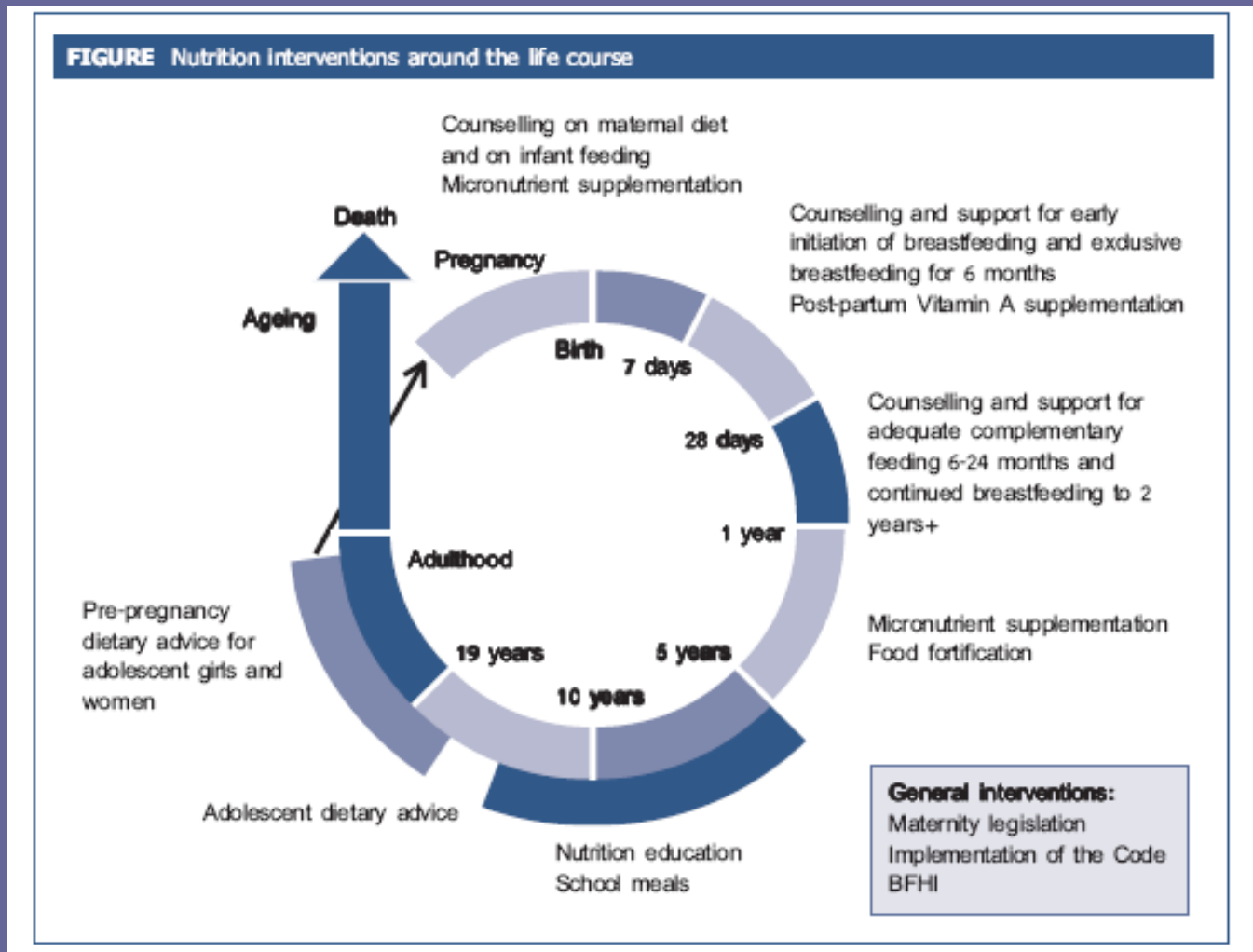
A young child with dark hair, wearing a light-colored, short-sleeved shirt, is sitting on a ledge or step. The child is looking towards the camera with a neutral expression. The background shows a textured wall and some greenery. The image is partially overlaid by a dark blue vertical bar on the right side.

Community Initiated Projects

Long Term Focus
Sustainable Progress

Nutrition

- WHO Planning Guide to Nutrition in Children



Feeding Programs

- Food in Schools
- Under Five Feeding Program
- Breastfeeding Support
 - 7-fold decrease in mortality from Diarrhea
 - 5-fold decrease in mortality from Pneumonia^[i]

^[i] Black, Robert E, Saul S Morris, Jennifer Bryce “Where and why are 10 million children dying every year?”
THE LANCET • Vol 361 • June 28, 2003

Sanitation / Clean Water

3 million children die each year from environmental causes. The majority die due to diarrhea as a result of poor sanitation and water quality. [\[i\]](#)

- **Sanitation:**

- **Decreases prevalence of diarrhea by 40% [\[i\]](#)**
 - Latrine placement and education programs
 - Hand Washing Programs

- **Clean Water:**

- **Decreases prevalence of diarrhea by 25%**
 - Potters for Peace
 - Cistern Maintenance

- [\[i\]](#) Esrey, Steven A. , "Water, Waste, and Well-Being: A Multicountry Study," Am J Epidemiol Vol. 143, No. 6, 1996
- [\[i\]](#) Guidotti, Tee L. MD, MPH, DABT and Benjamin A. Gitterman MD, FAAP "Global Pediatric Environmental Health," Pediatric Clinics of North America

Ventilation Improvement

Indoor Open Fire Stoves

- Asthma, Respiratory Illnesses
- Decreased growth
- Small for Gestational Age Babies
- Only intervention available now is to teach families how to build and use better stoves. [\[i\]](#)

[\[i\]](#) Guidotti, Tee L. MD, MPH, DABT and Benjamin A. Gitterman MD, FAAP “Global Pediatric Environmental Health,” *Pediatric Clinics of North America*

Education

- Parents' education has intergenerational effects on the health, nutritional status, and schooling of their children [\[i\]](#)
- Education of women decreases infant death and overall household mortality
- Parental investment is the number one determining factor of outcomes for the next generation
- [\[i\]](#) Filmer , Deon, "Determinants of Health and Education Outcomes: Background Note for World Development Report 2004: Making Services Work for Poor People," The World Bank: May 2003

Education

- Yo Puedo: Leadership training and Scholarships for young women
- Parental Classes on Child Development Tools
 - (increases school retention from 60% to >90%)
- School Uniform Program
 - (25% reduction in drop out rate)
- [\[i\]](#) Filmer, Deon, "Determinants of Health and Education Outcomes: Background Note for World Development Report 2004: Making Services Work for Poor People," The World Bank: May 2003

Cultural Influence and Enhancement

- Library Project
- Artist in Residence Program