School Health and Nutrition at Scale
Volume 8: Child and Adolescent Health and Development

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Main Messages

• It takes some 8000 days for a child to develop into an adult.
• Focus on the first 1000 days is an essential but insufficient investment.
• Sensitive phases shape development throughout this period, and age-appropriate and condition-specific support is required throughout if a child is to achieve full potential as an adult.
Child and Adolescent Health and Development

Optimizing Education Outcomes: High-Return Investments in School Health for Increased Participation and Learning
Human development to 20 years of age

A. Height gain

B. Change in brain development

C. Percentage change in volume as a proportion of prepubertal volume for each structure (for males)
Two essential packages (5-19 years)

• The volume proposes two essential packages for ages 5-19 years:
  – School-age package (5-14 years): utilizes pre-primary and primary schools to address health needs in middle childhood and early adolescence
  – Adolescent package (15-19 years): utilizes a mixed approach involving the community, secondary schools, media and health systems
Median significant effect sizes on education outcomes
In lower middle-income countries, average IQ points lost for school-age children:

- **-3.75pts** untreated worm infections
- **-6pts** anemia

School-based interventions for poor girls and boys in areas where worms and anemia are prevalent would lead to **2.5 extra years of schooling**

PCD
The Partnership for Child Development
Cost:Benefit Ratios for the School-Age Essential Package

- Deworming treatment
- Malaria prevention
- Tetanus toxoid vaccine
- Vision screening
- School feeding
- HPV vaccine
- Oral health promotion
- Targeted by age or geographically
- Not targeted

[Diagram showing cost-benefit ratios for various health interventions for school-age children]
Cost Share of the School-Age Essential Package

Low-Income Countries

- School feeding: $0.35
- Vision screening: $0.40
- Deworming: $0.75
- Health education: $0.60
- Vaccines: $0.70

Total: $8.20

Lower-Middle Income Countries

- School feeding: $0.35
- Vision screening: $0.75
- Deworming: $0.60
- Health education: $5.40
- Vaccines: $17.33

Total: $17.33
Working across health and education

• Well designed health interventions in middle childhood and adolescence can leverage the current substantial investment in education, and improved design of educational programs can improve health.

• The potential synergy between health and education is undervalued and the returns on co-investment are rarely optimized.
Three SHN success stories

- School feeding
- Vision screening
- Deworming
Home Grown School Feeding

• Promoting agricultural development by improving access to the school feeding market

• A win-win
  – for children and communities… improving their education, health, and nutrition
  – Smallholder farmers… providing regular orders and a reliable income
School Feeding Programmes

Social Protection
Social Safety Nets

Health and Nutrition
Diet, Growth, Development

Rural Economies
Small-holder Agriculture

Education
Enrolment, Learning, Girls’ Education
Local SHNP Protein Commodities Nigeria

- 75 metric tonnes of fish
- 4,341,439 eggs
- 33,000 birds
- 355 cattle

WEEKLY!!
Ghana Meals

Edit Meal

- Meal name: Rice and beans
- Targets: 30 percent RDA
- Regions: Ghana (Default Region)
- Age Group: 6-12

Gingerbread Men

Nutrition Overview Table

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Meal RDA

- Cost per student: GH¢ 0.58
- Calcium (0%)
- Carbohydrate (0%)
- Copper (0%)
- Energy (85%)
- Fat (42%)
- Fibre (0%)
- Folate (0%)
- Iron (70%)
- Magnesium (0%)
- Niacin (0%)
- Phosphorous (0%)
- Potassium (0%)
- Protein (94%)
- Retinol (0%)
- Riboflavin (0%)
100g Maize porridge & 100g Cassava leaves

- Energy: 12%
- Protein: 19%
- Fat: 2%
- Vitamin A: 57%
- Iron: 32%
100g Maize porridge & 100g Pigeon peas

- Energy: (23%)
- Protein: (38%)
- Fat: (3%)
- Vitamin A: (0%)
- Iron: (27%)
100g Maize porridge, 100g of Pigeon peas and one sachet of WFP sprinkles

Contents of WFP sachet (1g): Vit A 300mcg, Vit. C 50mg, Vit. D3 7.5 mcg, Iron 12.5mg, Zinc 5mg and Folic Acid 150 mcg.
Refractive Error in Children

- Lancet (2012) study has shown that almost 90% of urban school-leavers in Asia require spectacles.
- Refractive error is responsible for 97% of vision problems in school-children – can lead to reduced attainment.
Worm Infection

- Ancylocstoma duodenale
  - Necator americanus (hookworm)

- Trichuris trichiura
  - (whipworm)

- Ascaris lumbricoides
  - (roundworm)

- Schistosoma haematobium
  - S. Mansoni
  - S. japonicum
Scaling Up

HISTORICAL PROFILES AND PERSPECTIVES

Bihar’s Pioneering School-Based Deworming Programme: Lessons Learned in Deworming over 17 Million Indian School-Age Children in One Sustainable Campaign

Lesley J. Drake¹,²,³, Sarman Singh⁴, C. K. Mishra⁵, Amarjeet Sinha⁶,⁷, Sanjay Kumar⁸,⁹,⁴, Rajesh Bhushan⁴,⁷,⁸, Deirdre Hollingsworth¹,⁸,⁹,¹⁰, Laura J. Appleby¹,³, Rakesh Kumar², Kriti Sharma², Yogita Kumar², Sri Raman²¹, Stalin Chakrabarty², Jimmy H. Kihara¹¹, N. K. Gunawardena¹², Grace Hollister²,¹³,¹⁴, Vandana Kumar², Anish Ankur⁴, Babul Prasad², Sushma Ramachandran⁵, Alissa Fishbane²,¹³, Prerna Makkar¹,²

PCD
The Partnership for Child Development
London Declaration, January 2012

- PCD was one of many co-signatories of the London Declaration
  - donors
  - pharmaceuticals
  - multilateral agencies

pharmaceutical partners J&J and GSK committed to extending their combined annual donations of 600 million deworming treatments for school-age children at risk of STH through 2020.
Find out more @
www.schoolsandhealth.org  www.hgsf-global.org

www.child-development.org

Downloadable
• Documents & resources
• News & Events
• SHN topic information
• Country specific data

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