Africa Day of School Feeding

African Union

Realizing African children's full potential through effective home grown school feeding

1 March 2018, 14:00-16:00
WFP HQ Auditorium, Rome

WFP World Food Programme

Food and Agriculture Organization of the United Nations

IFAD
Investing in rural people

WFP/Simon-Pierre Diouf

Current School Meal for a 6-12 year old child

Nutrients met

- Energy
- Protein
- Fat

Nutrients missing

- Vitamin A
- Calcium
- Iron
- Zinc

Improved School Meal for a 6-12 year old child

Nutrients met

- Energy
- Protein
- Fat

Nutrients missing

- Vitamin
- Calcium
- Iron
- Zinc

Improved School Meal for a 6-12 year old child

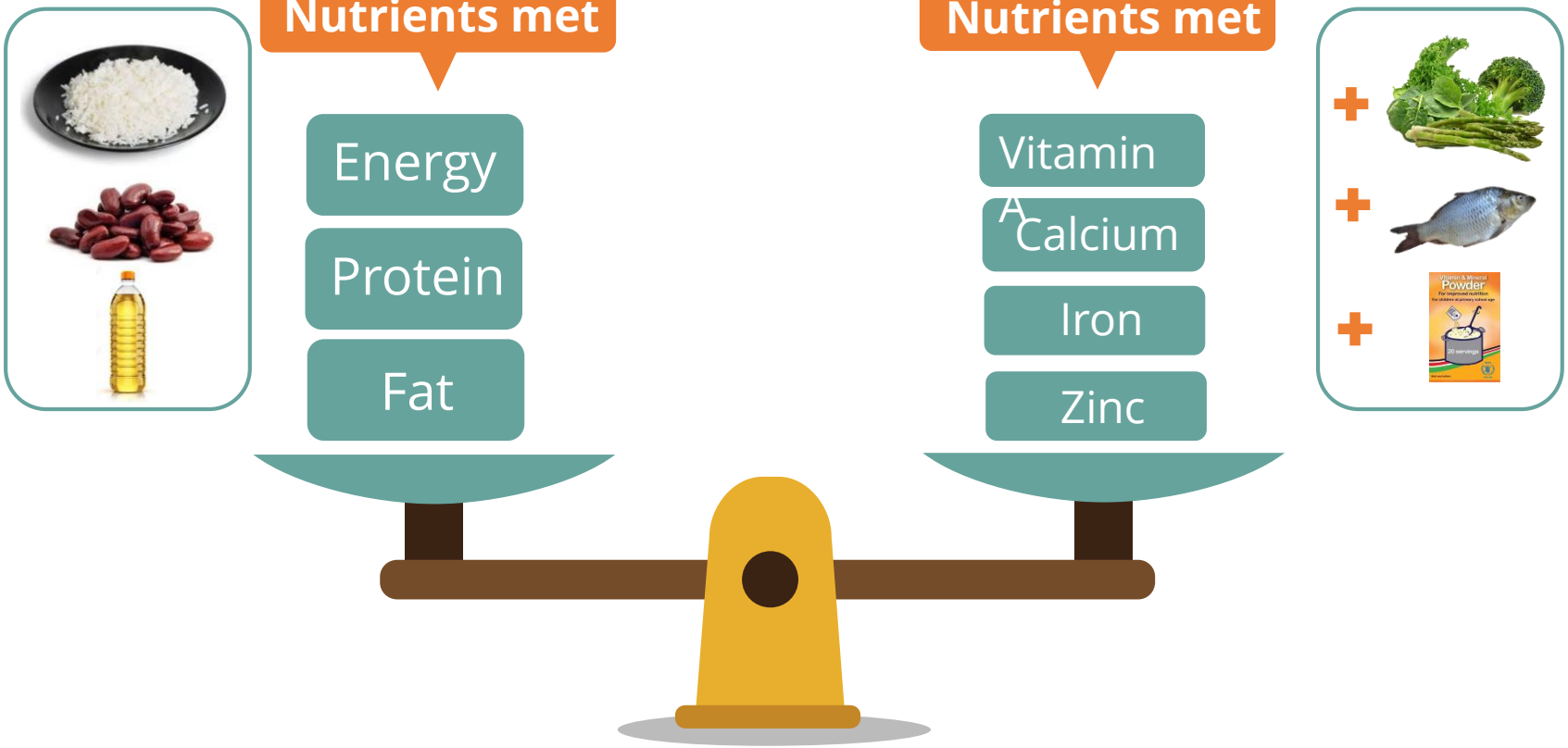
Nutrients met

- Energy
- Protein
- Fat

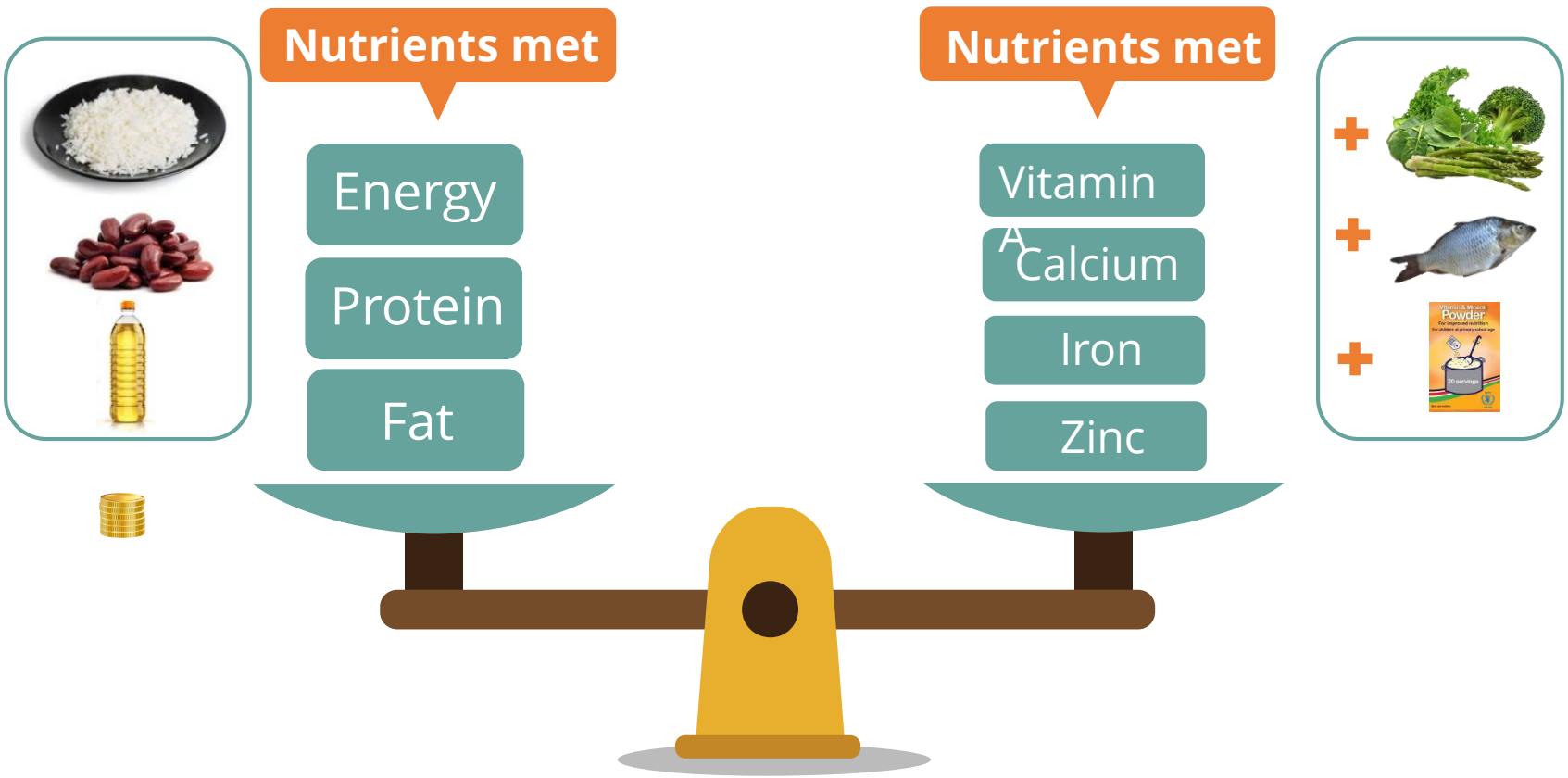
Nutrients missing

- Vitamin A
- Calcium
- Iron
- Zinc

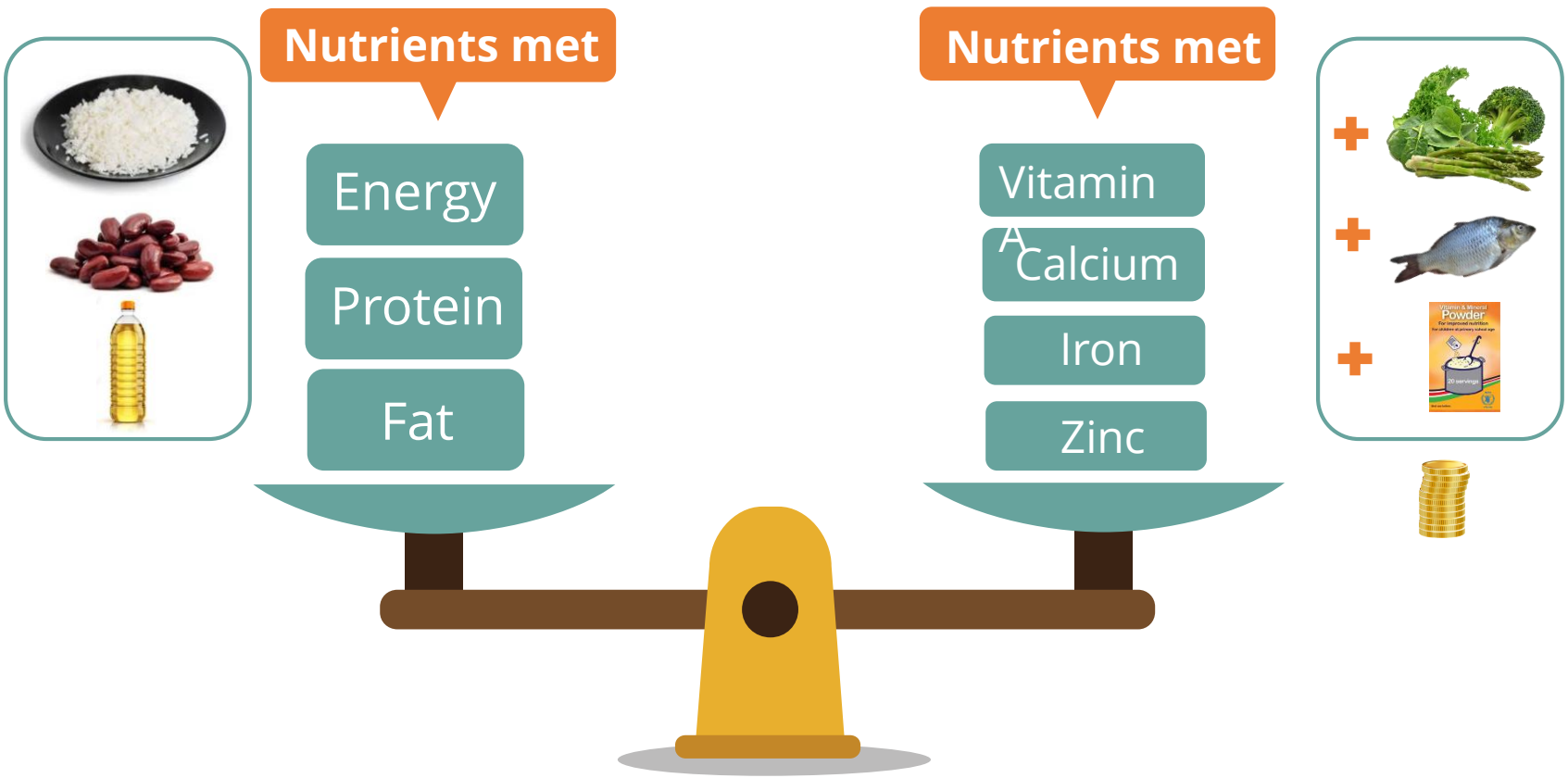
Improved School Meal for a 6-12 year old child



Improved School Meal for a 6-12 year old child



Improved School Meal for a 6-12 year old child



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Africa Day of School Feeding

African Union

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Supporting Nutritious School Meals

McGovern-Dole International Food for Education and Child Nutrition Program

Brian V. Guse
Assistant Deputy Administrator
Office of Capacity Building and Development
Foreign Agricultural Service
U.S. Department of Agriculture

Africa Day of School Feeding 2018
U.N. World Food Programme, Rome
March 1, 2018

Schoolchildren in Guinea-Bissau enjoying a nutritious McGovern-Dole lunch through the U.N. World Food Programme

McGovern–Dole International Food for Education and Child Nutrition Program supports education, child development and food security in low-income, food-deficit countries around the globe through:

- Food for education programs for preschool and school children in in these countries improve food security, reduce hunger, and strengthen literacy and primary education, particularly for girls

- Maternal, infant, and young child nutrition programs

Strategic Objectives:

(1) Improved Literacy of School-Age Children

(2) Increased Use of Health and Dietary Practices

USDA Local and Regional Food Aid Procurement (LRP) Program

Program Objectives

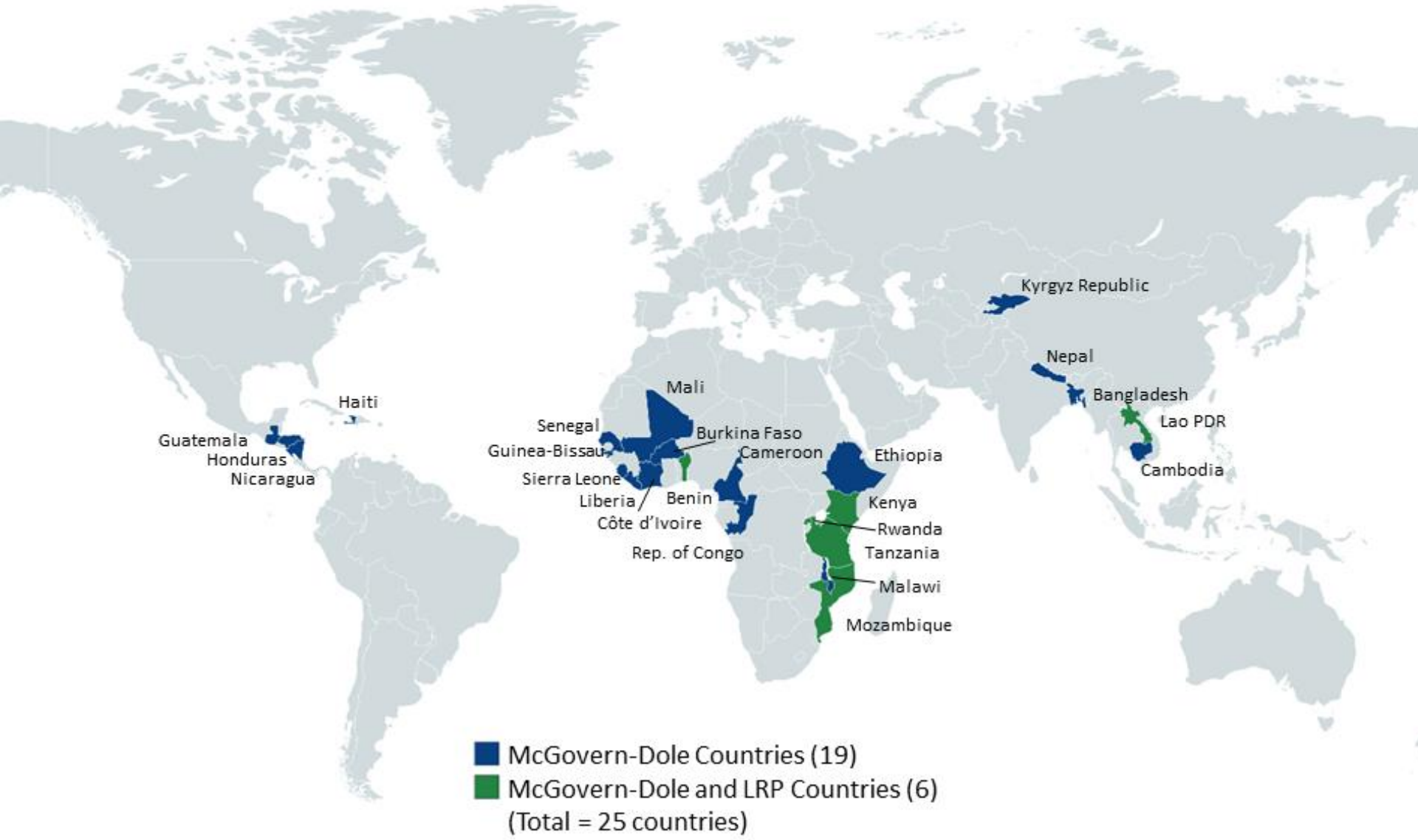
- Increasing the ability of organizations and governments to procure local commodities
- Expedition and cost-effectiveness of food assistance delivery
- Building capacity of farmers and actors along the agriculture value chain

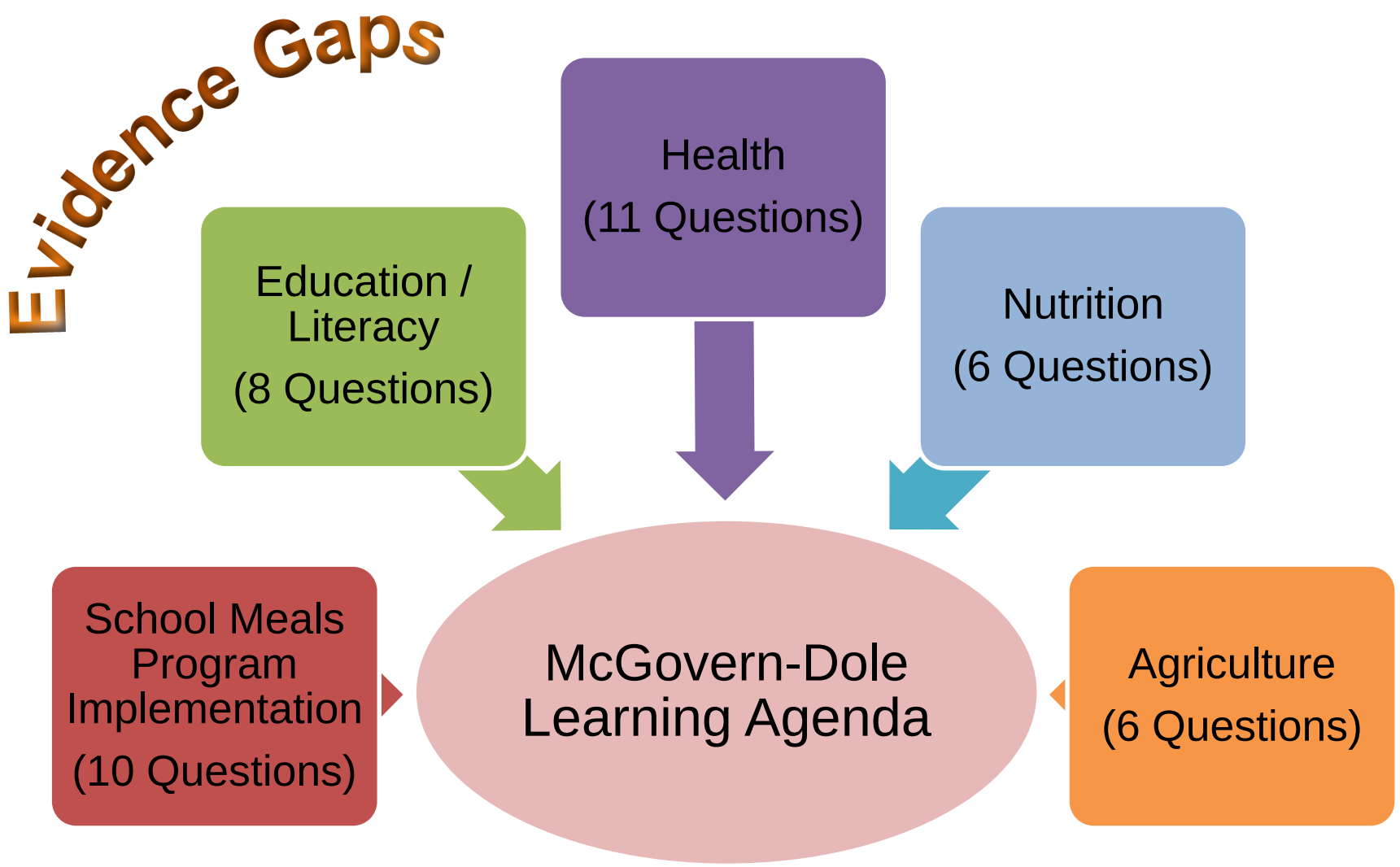
Program Priorities

- McGovern-Dole International Food for Education and Child Nutrition projects
- Development programs
- Emergency programs

LRP-supported local farmers cultivating Orange-Fleshed Sweet Potatoes for school meals in Mozambique, trained in partnership with the International Potato Center (CIP)

McGovern-Dole International Food For Education and Child Nutrition Program and Local and Regional Food Aid Procurement Program





McGovern-Dole Learning Agenda is available at https://apps.fas.usda.gov/fais/public

Africa Day of School Feeding

African Union

Realizing African children's full potential through effective home grown school feeding

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Disease Control Priorities History

- 1993 World Development Report
- *Disease Control Priorities in Developing Countries, Second Edition* 2006 (*DCP2*)
- *Disease Control Priorities, 3rd Edition* 2015-2018 (*DCP3*)

DCP3 Disease Control Priorities
economic evaluation for health

Child and Adolescent Health and Development Volume encompasses:

- Geographic patterns of risk and morbidity
- Long-term consequences of chronic illness and malnutrition on physical and cognitive development
- Effect of interventions and outcomes as well as return on investment at different stages along the life cycle

DCP3 Disease Control Priorities

economic evaluation for health

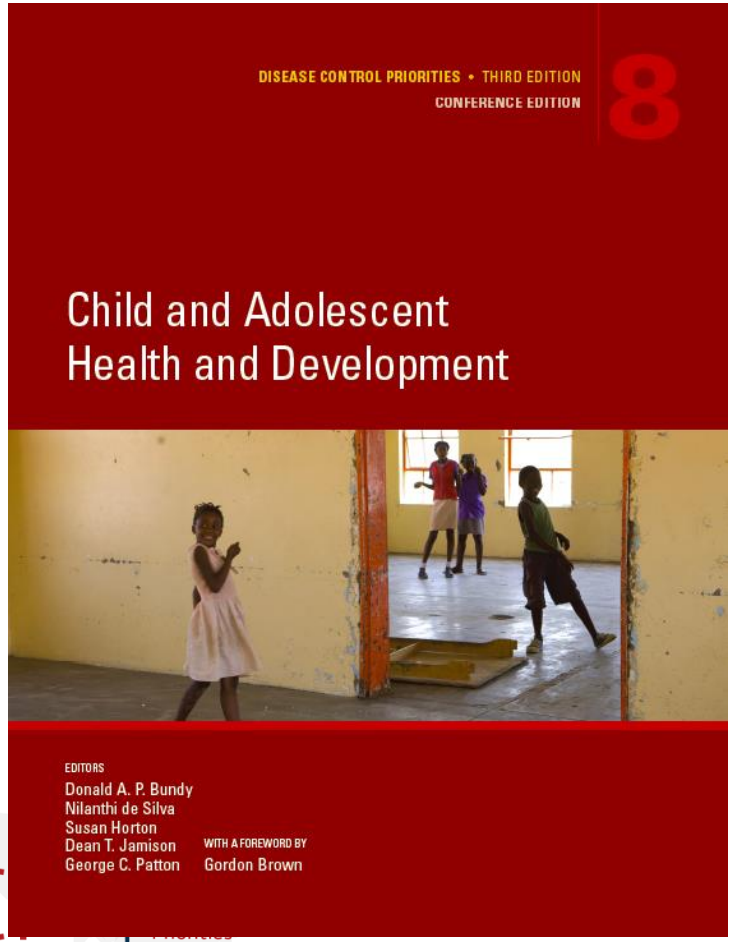
DCP3 by the Numbers

9	→	Volumes
7	→	Years
33	→	Editors
170+	→	Chapters
500+	→	Authors

DCP3 Disease Control Priorities

economic evaluation for health

Volume 8:
Child and Adolescent Health and Development



Editors:

Donald A.P. Bundy
Nilanthi de Silva
Susan Horton
Dean T. Jamison
George C. Patton

Published November 2017

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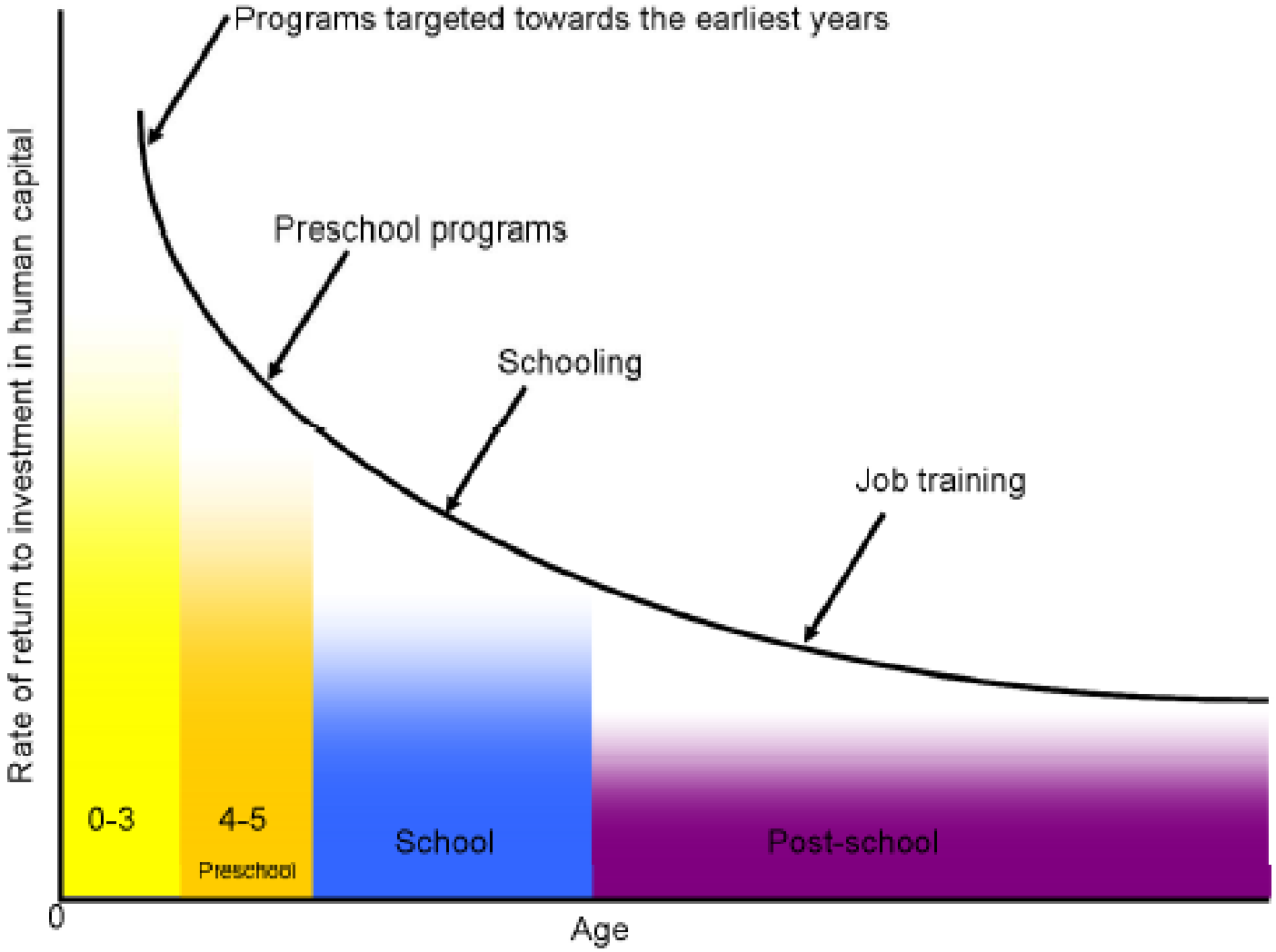
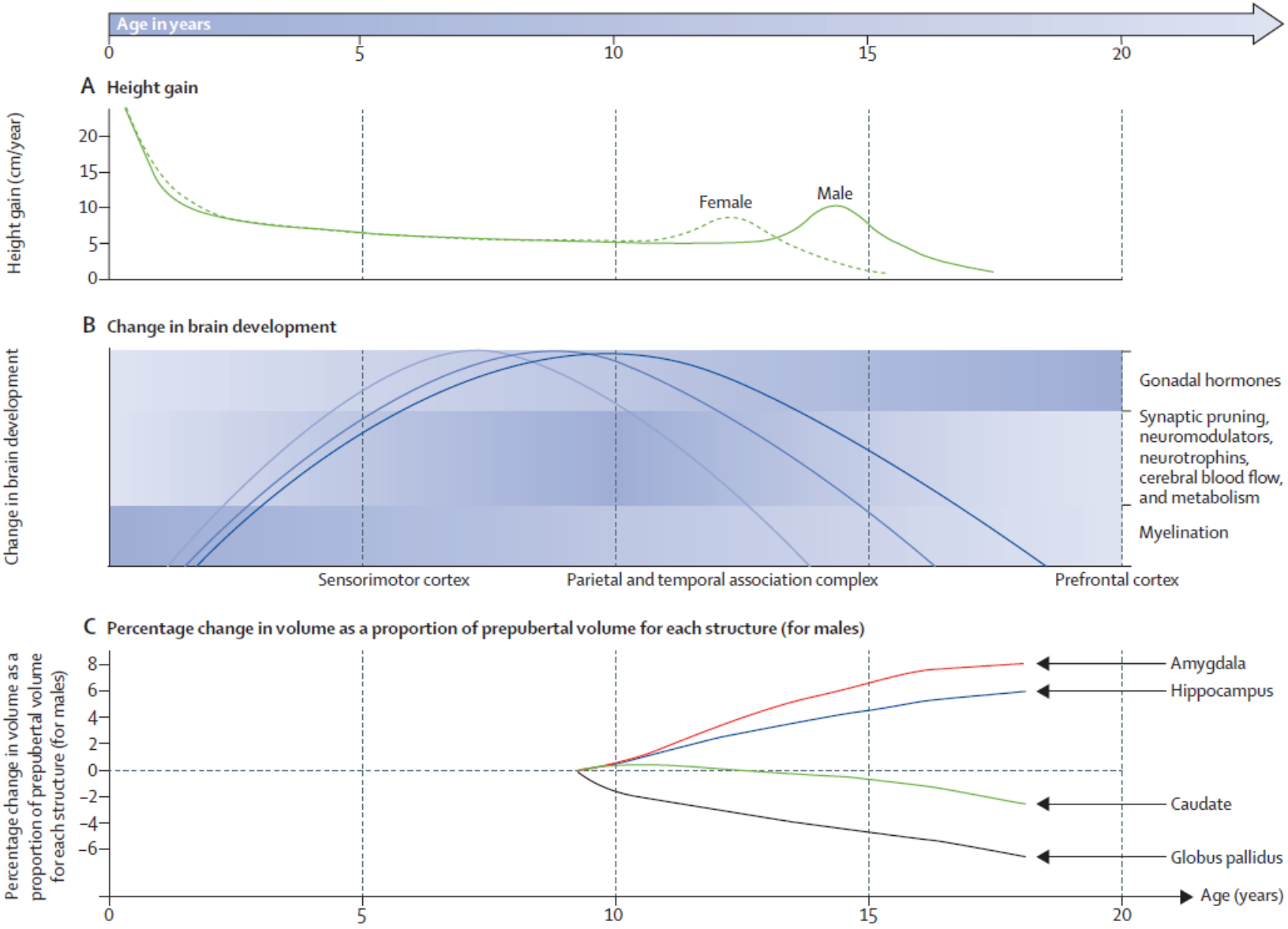
Returns to a unit dollar invested



Source: Heckmann JJ. Effective Child Development Strategies. In: Zigler E, Gilliam WS, Barnett WS, eds. In The Pre-K Debates: Current Controversies and Issues. Baltimore, MD: Paul H. Brookes Publishing; 2011.

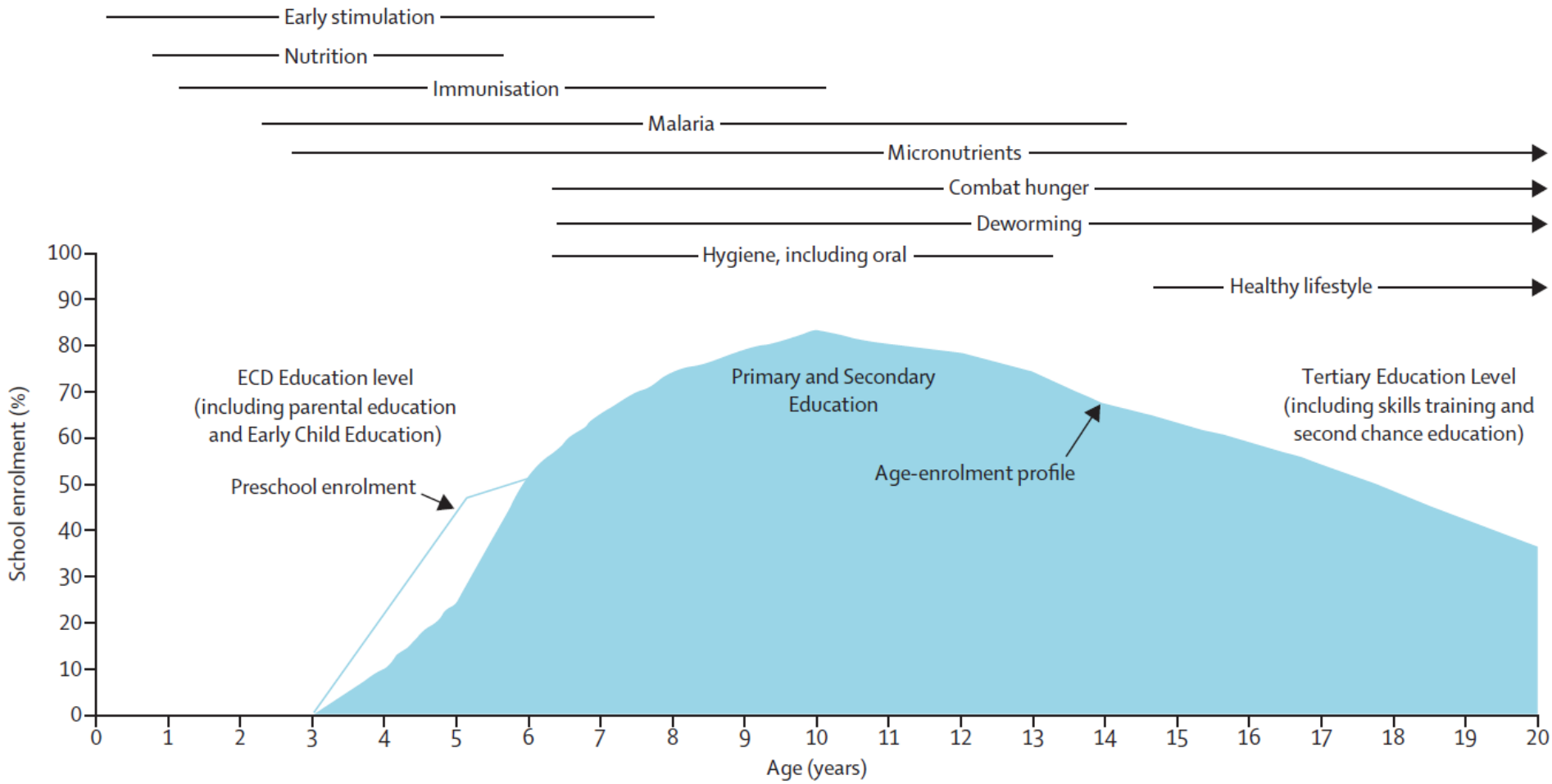
Human development to 20 years of age



Key phases of child and adolescent health and development

Phase	Period	Developmental Importance	Examples of Interventions
First 1000 days	Ages -9 months to age 2	Most rapid growth of body and brain	Responsive stimulation
Middle childhood growth and consolidation	Ages 5 to 9 years	Steady physical growth of body while sensorimotor brain function develops	Infection control, diet quality, and promotion of healthy behaviors
Adolescent growth spurt	Ages 10 to 14 years	Rapid physical growth and rapid growth of centers for emotional development	Vaccination, physical exercise, and promotion of healthy emotional development
Adolescent growth and consolidation	Ages 15 to 19 years	Consolidation of physical growth and especially of links in the brain	Reproductive health, incentives to stay in school, protection from excessive risk taking, and early identification of mental health issues

Indicative rate of school enrollment in low- and lower-middle-income countries



Programs in China Across the 8,000 Days

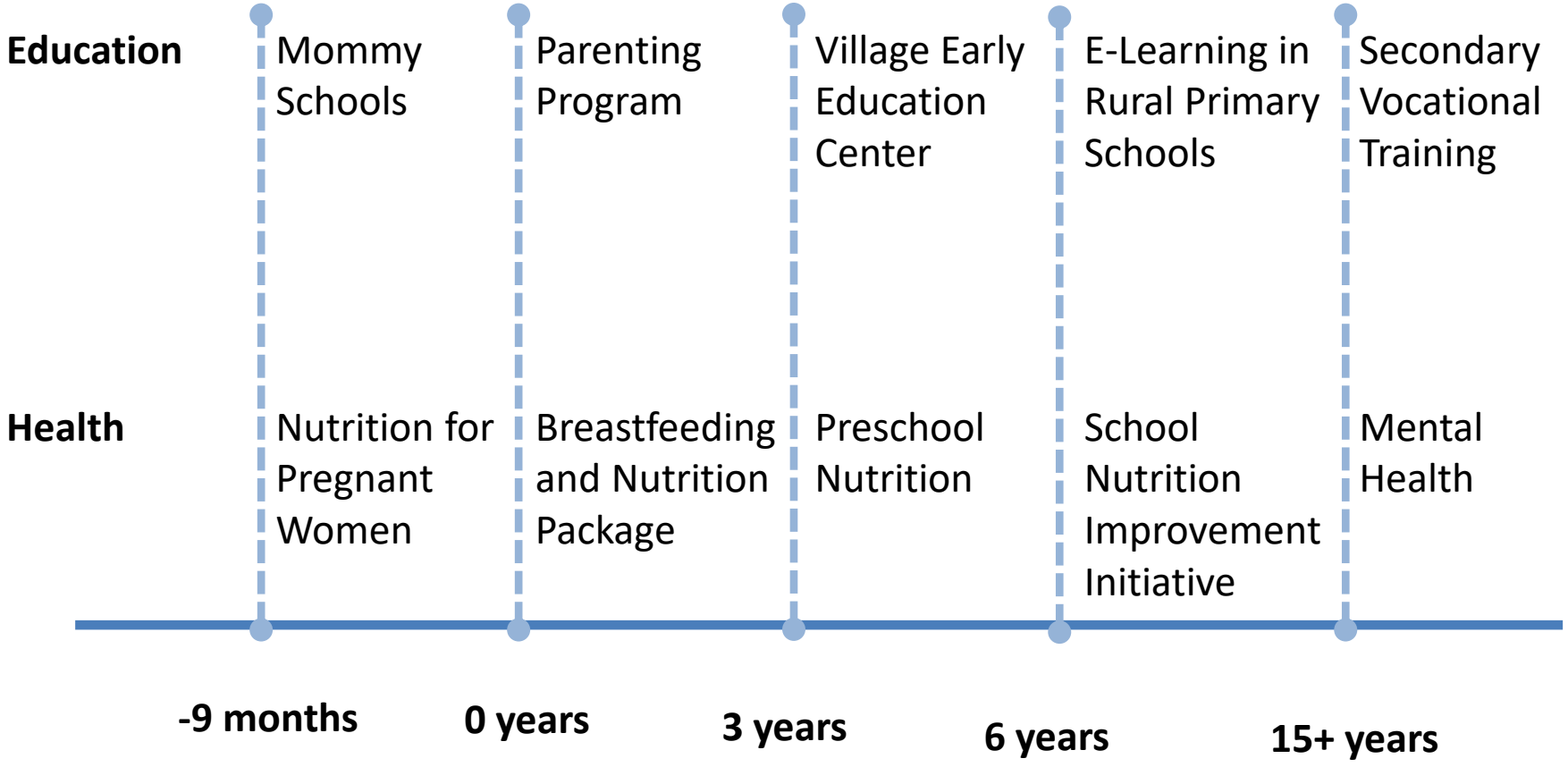
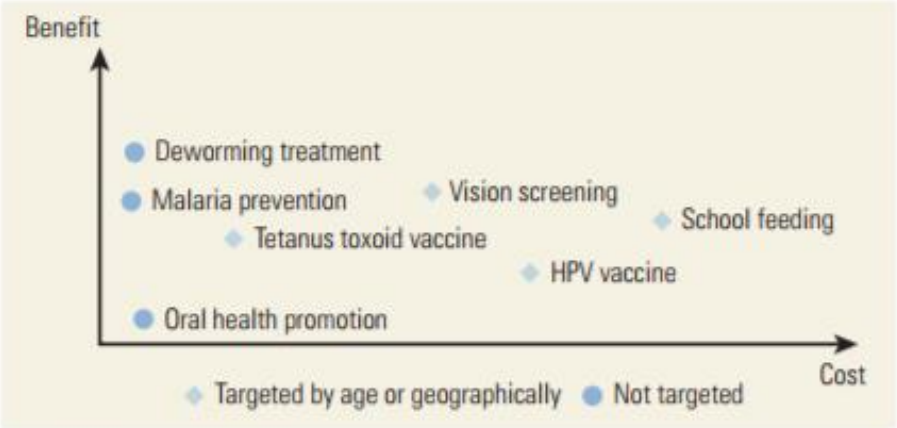


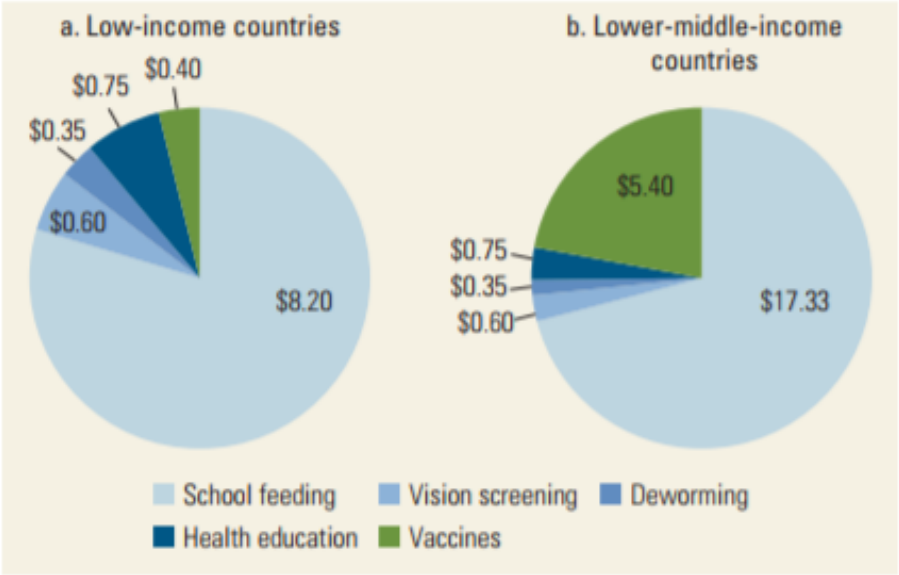
Figure 25.2 Indicative Mapping of Benefits and Costs of Essential Package Interventions



Note: HPV = human papillomavirus.

Figure 25.3 Cost Shares of the Essential Package, by Country Income Level

U.S. dollars



Authors: Lesley Drake, Meena Fernandes, Elisabetta Aurino, Josephine Kiamba, Boitshepo Giyose, Carmen Burbano, Harold Alderman, Lu Mai, Arlene Mitchell, Aulo Gelli

Chapter 12

School Feeding Programs in Middle Childhood and Adolescence

Lesley Drake, Meena Fernandes, Elisabetta Aurino, Josephine Kiamba, Boitshepo Giyose, Carmen Burbano, Harold Alderman, Lu Mai, Arlene Mitchell, and Aulo Gelli

INTRODUCTION

Almost every country in the world has a national school feeding program to provide daily snacks or meals to school-attending children and adolescents. The interventions reach an estimated 368 million children and adolescents globally. The total investment in the intervention is projected to be as much as US$75 billion annually (WFP 2013), largely from government budgets.

School feeding may contribute to multiple objectives, including social safety nets, education, nutrition, health, and local agriculture. Its contribution to education objectives is well recognized and documented, while its role as a social safety net was underscored following the food and fuel crises of 2007 and 2008 (Bundy and others 2009). In terms of health and nutrition, school feeding contributes to the continuum of development by building on investments made earlier in the life course, including maternal and infant health interventions and early child development interventions (see chapter 7 in this volume, Alderman and others 2016). School feeding may also help leverage global efforts to enhance the inclusiveness of education for out-of-school children, adolescent girls, and disabled persons, as called for in the Sustainable Development Goals (see chapter 17 in this volume, Graham and others 2016).

Although the *Disease Control Priorities* series focuses on low- and middle-income countries (LMICs), evidence from high-income countries (HICs) is included because of the near universality of school feeding and the insights that inclusion can provide as economies develop. For example, the design of school feeding in countries undergoing the nutrition transition[1] may provide some lessons on how to shift from providing access to sufficient calories to promoting healthful diets and dietary behaviors for children and adolescents (WFP 2013).

Agricultural development has increasingly gained attention. It is clear that to enable the transition to sustainable, scalable government-run programs, the inclusion of the agricultural sector is essential (Bundy and others 2009; Drake and others 2016). Accounting for the full benefits of school feeding through cost-effectiveness and benefit-cost analysis is challenging, similar to other complex interventions, but undertaking this accounting is critical for assessing the tradeoffs with competing investments.

This chapter reviews the evidence about how school feeding meets these objectives and provides some indication of costs in relation to benefits. The costs of the intervention are well established; estimates that encompass all the benefits of school feeding are more challenging. The benefits must be quantified and translated to the same unit to allow for aggregation. Moreover, how school feeding interventions are designed and implemented varies significantly across

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DCP3 Disease Control Priorities
economic evaluation for health

Social Protection
Social Safety Nets
*****

Health and Nutrition
Diet, Growth, Development
***

Rural Economies
Small-holder Agriculture
****

Education
Enrolment, Learning, Girls' Education
****

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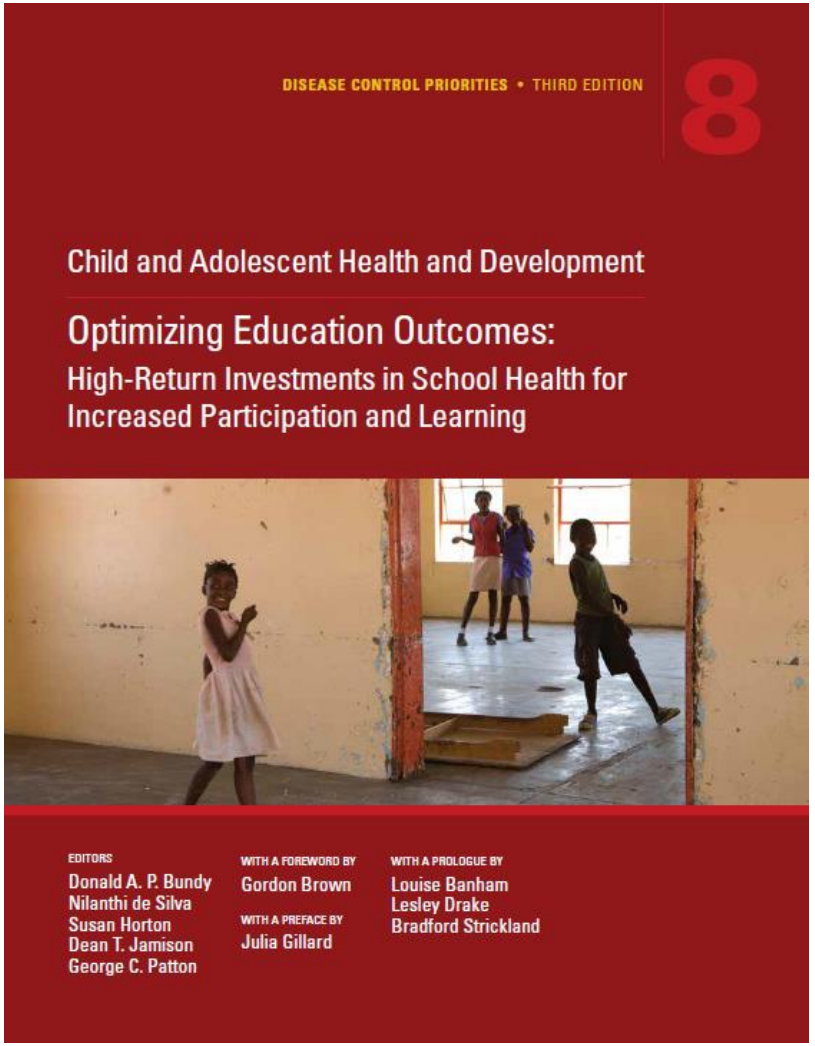

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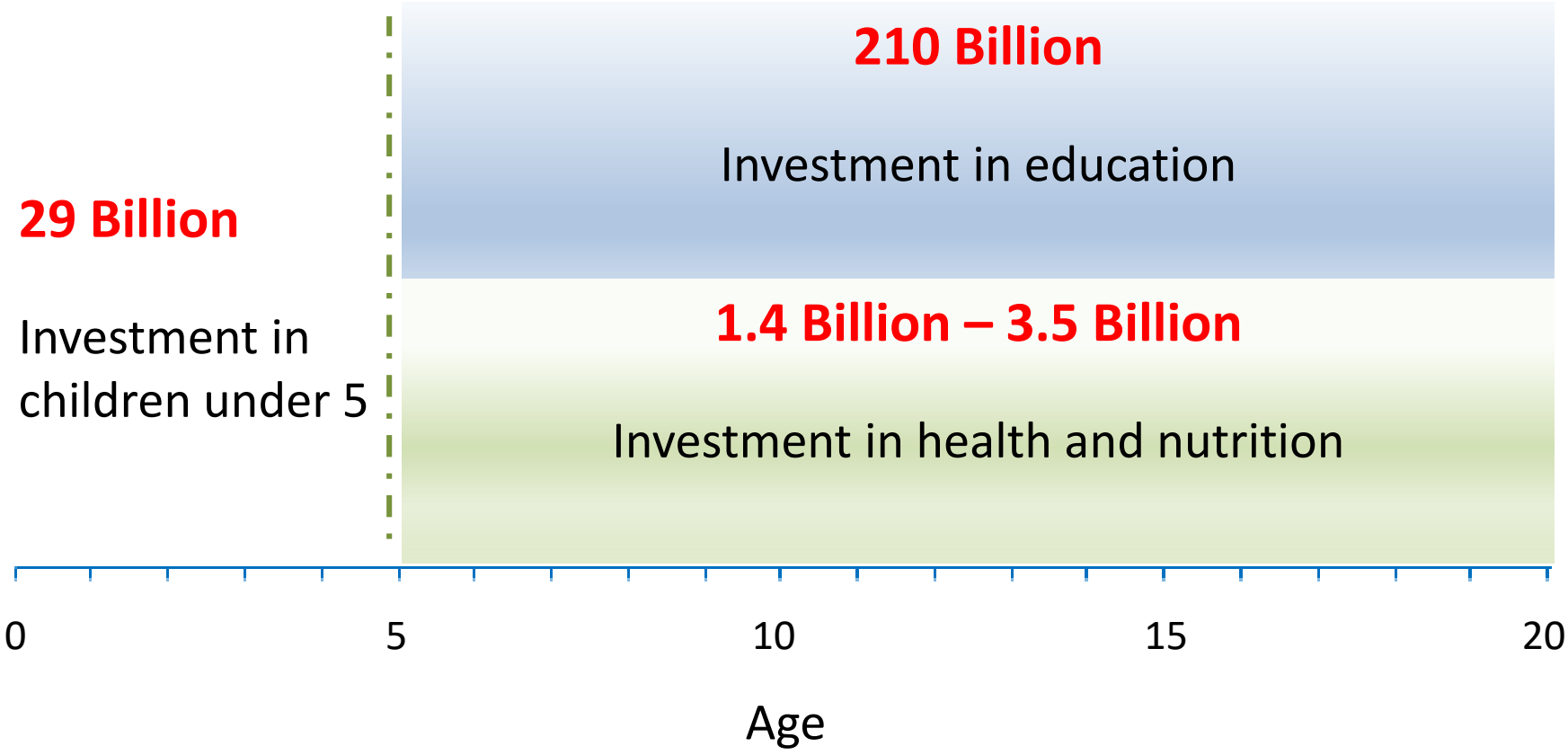
economic evaluation for health

Estimates of public spending on children and adolescents in LLMICs (US$ billion per year)



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, and age-appropriate support is required if a child is to achieve full potential as an adult.
- School feeding is a part of this as a cost effective intervention with multi-sectoral impacts.

THANK YOU

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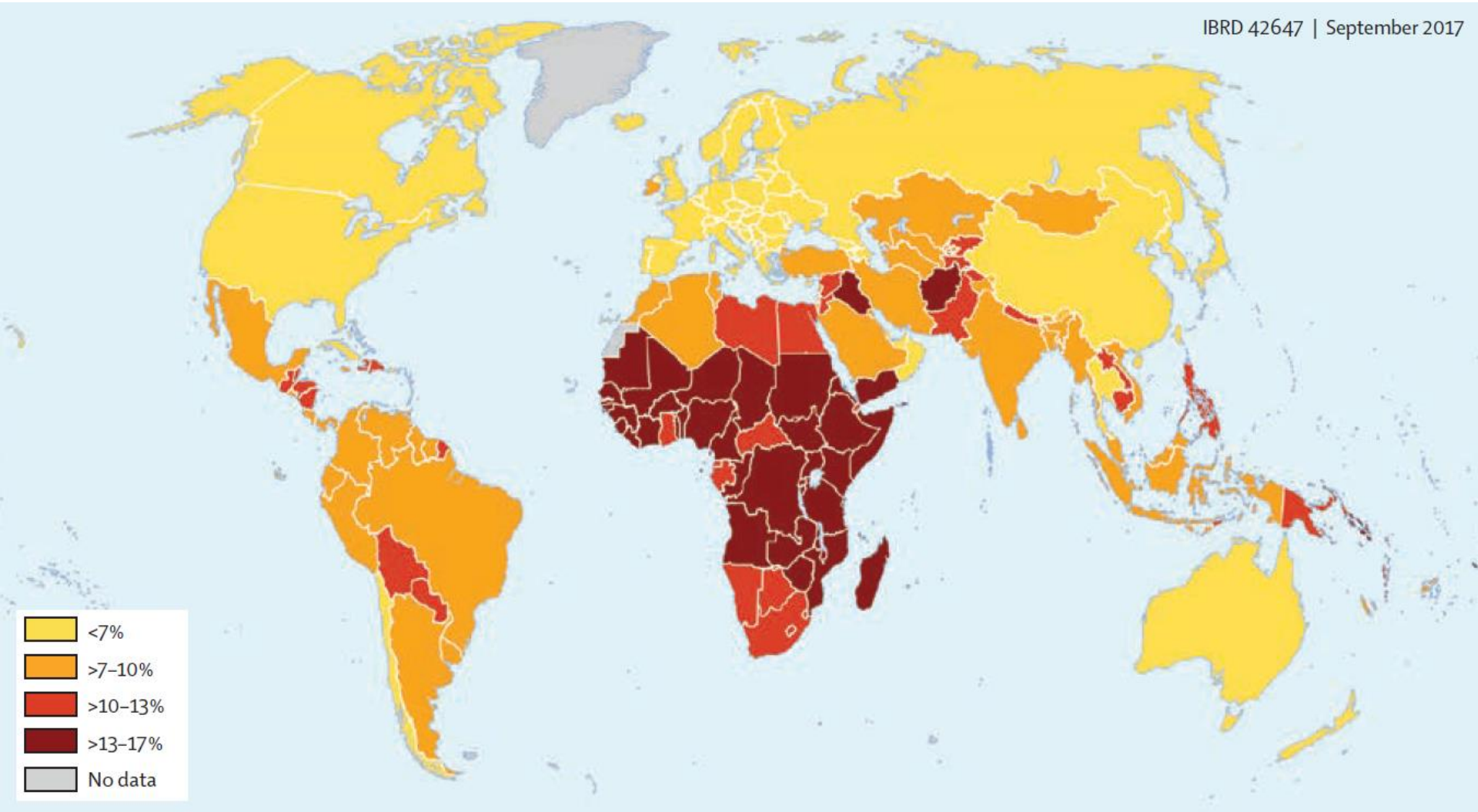
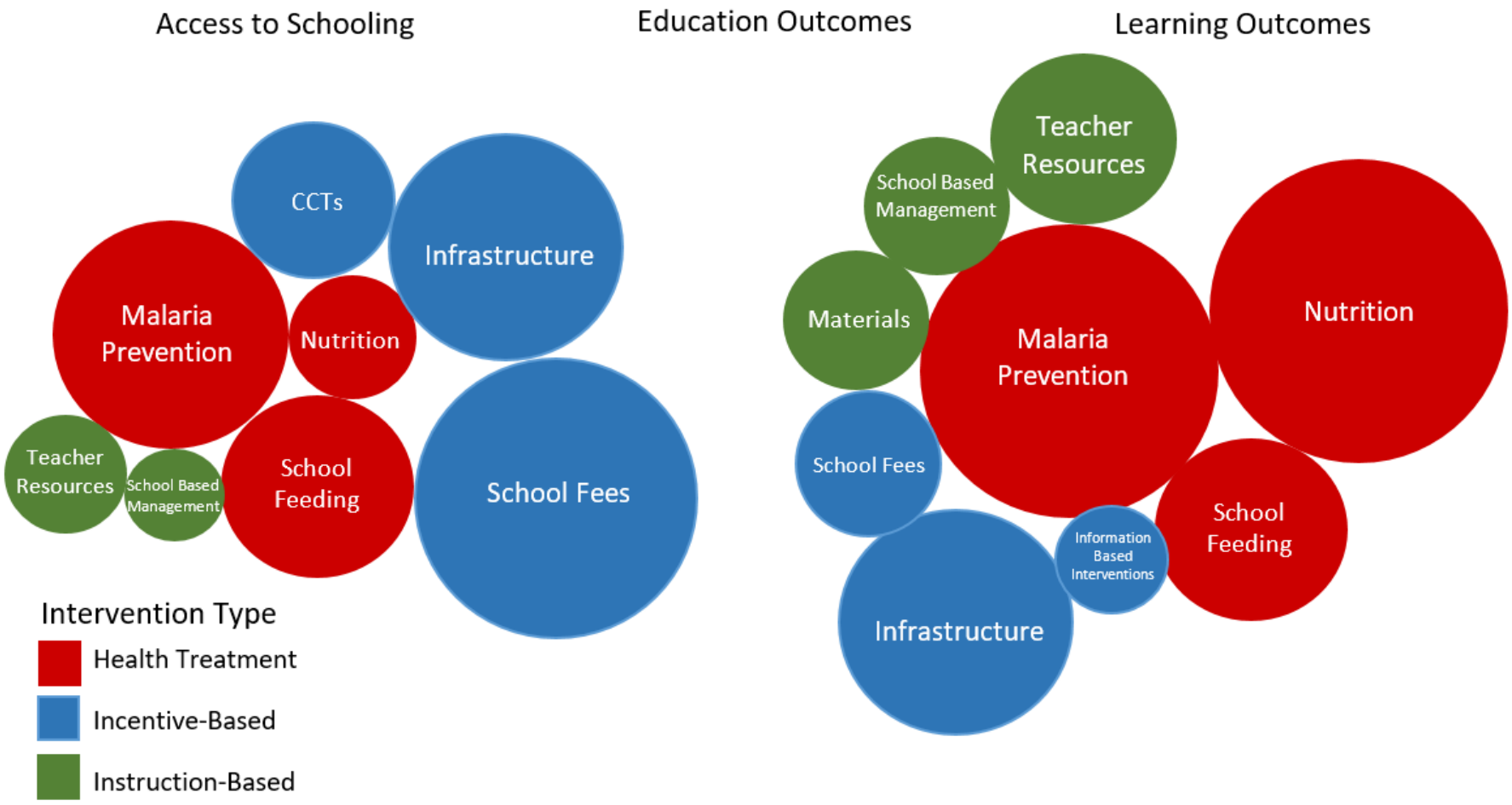
Proportion of country population composed of children in middle childhood (ages 5 to 9 years)



Median significant effect sizes on education outcomes



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.

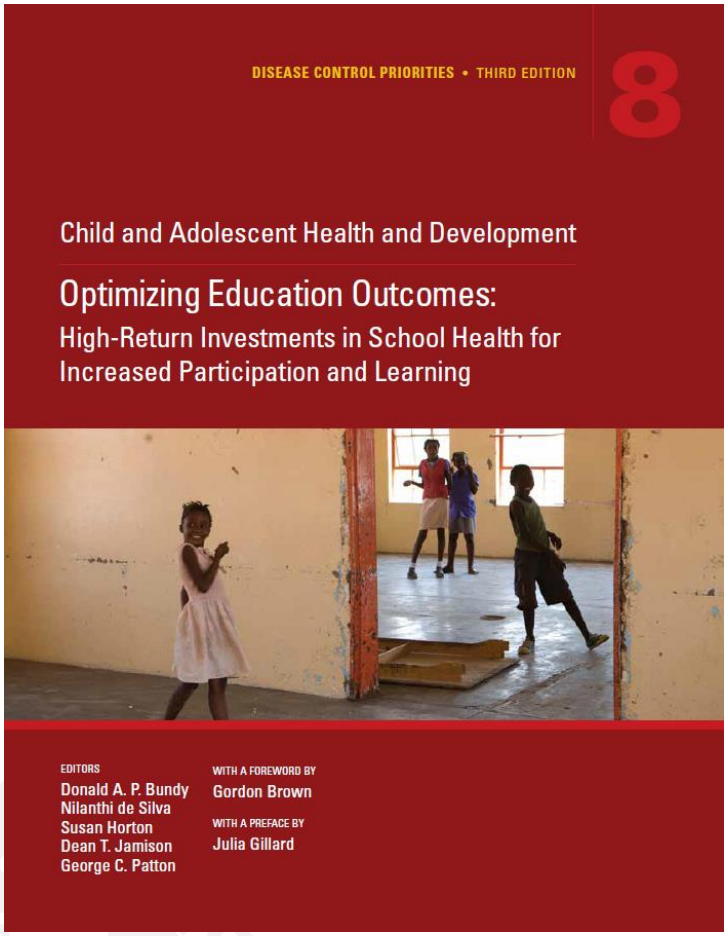
Research disparity in health and development after age 5

	Google Scholar						PubMed					
	Mortality		Cause of death		Health		Mortality		Cause of death		Health	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
<5 years*	939 400	98·81	55 900	94·62	2 705 100	99·17	59 836	93·95	8374	94·29	129 332	95·33
5–9 years	1520	0·16	405	0·69	3240	0·12	3262	5·12	383	4·31	4751	3·50
10–14 years	2760	0·29	784	1·33	6120	0·22	333	0·52	65	0·73	750	0·55
15–19 years	7050	0·74	1990	3·37	13 300	0·49	261	0·41	59	0·66	829	0·61
Total	950 730	100	59 079	100	2 727 760	100	63 692	100	8881	100	135 741	100

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

Optimizing Education Outcomes: High Return Investments in School Health for Increased Participation and Learning



Editors:

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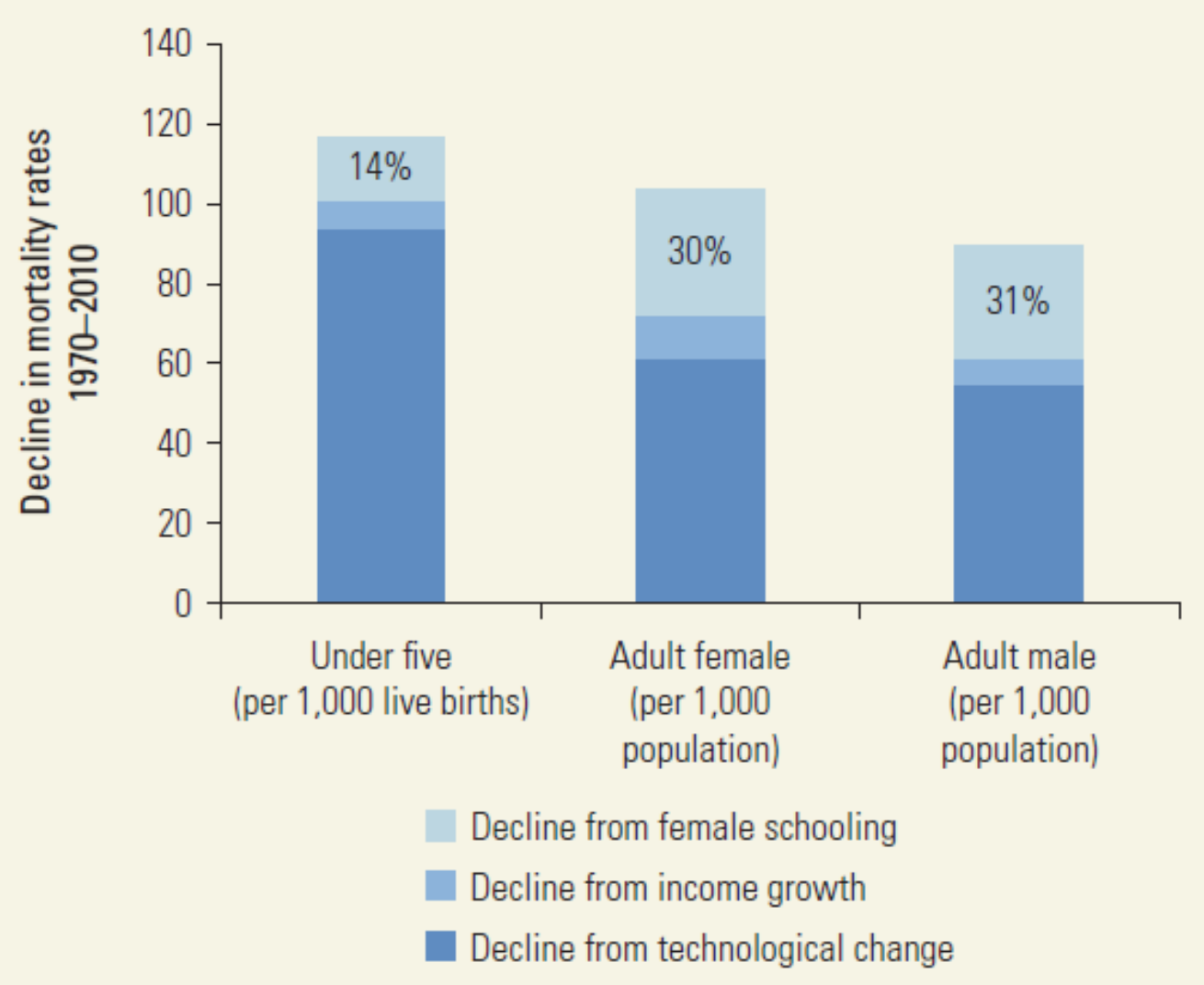
George Patton

Forthcoming: March 2018

Decline in mortality attributable to increases in female schooling, 1970-2010



Key message about research

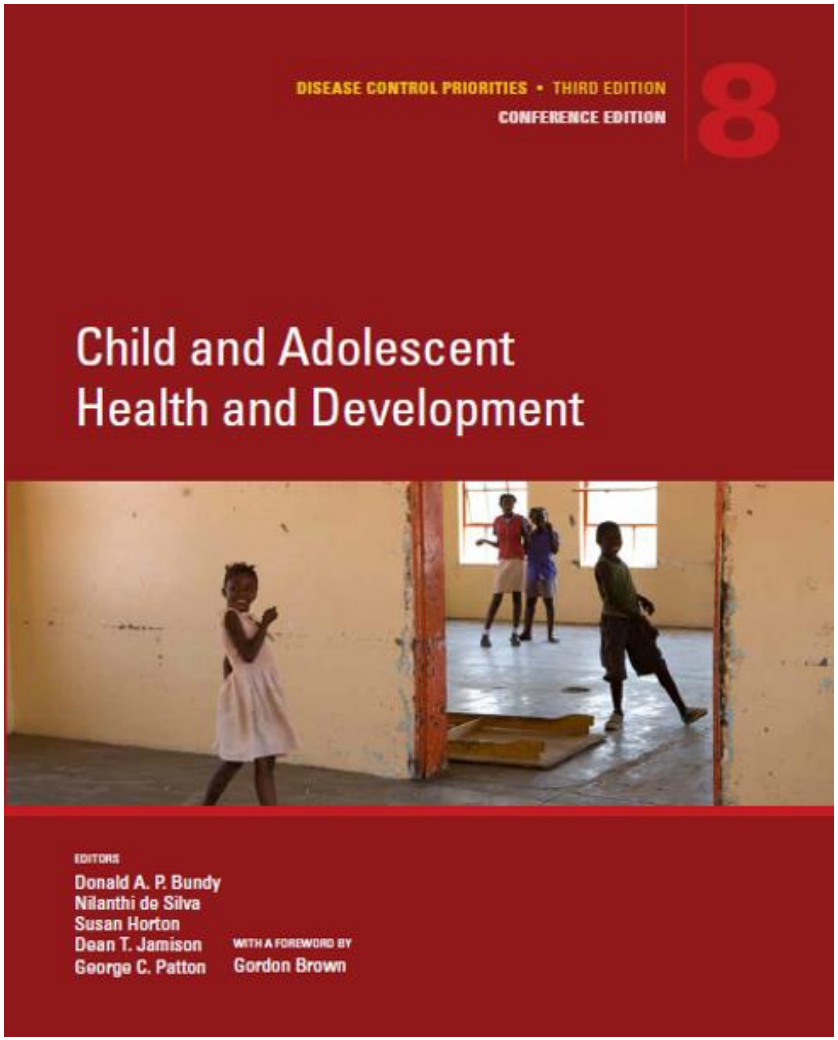
- There is asymmetry in research, policy and intervention, with 95% of publications on young people focusing on children under 5 years of age
- Current policy on health and development has substantially neglected and under-served children in the 5-19 age range
- Children between ages 5-9 are the least researched group

Policy Forums with WHO EMRO, China Development Research Foundation, and the African Union

Who is DCP3 for?

- Policymakers
- Researchers and Academics
- Professional bodies and practitioners
- Students
- Global health funders and program implementers

Strengthening Evidence on Child and Adolescent Health and Development



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Investment in child and adolescent health and development: key messages from Disease Control Priorities, 3rd Edition

*Donald AP Bundy, Nilanthi de Silva, Susan Horton, George C Patton, Linda Schultz, Dean T Jamison, for the Disease Control Priorities-3 Child and Adolescent Health and Development Authors Group**

The realisation of human potential for development requires age-specific investment throughout the 8000 days of childhood and adolescence. Focus on the first 1000 days is an essential but insufficient investment. Intervention is also required in three later phases: the middle childhood growth and consolidation phase (5–9 years), when infection and malnutrition constrain growth, and mortality is higher than previously recognised; the adolescent growth spurt (10–14 years), when substantial changes place commensurate demands on good diet and health; and the adolescent phase of growth and consolidation (15–19 years), when new responses are needed to support brain maturation, intense social engagement, and emotional control. Two cost-efficient packages, one delivered through schools and one focusing on later adolescence, would provide phase-specific support across the life cycle, securing the gains of investment in the first 1000 days, enabling substantial catch-up from early growth failure, and leveraging improved learning from concomitant education investments.

Lancet 2017; 390

*Members listed in appendix
Bill and Melinda Gates Foundation, London, UK (Prof Donald A P Bundy PhD); University of Kelaniya, Ragama, Sri Lanka (Prof Nilanthi de Silva MD); University of Waterloo, Waterloo, Canada (Prof Susan Horton PhD); The Murdoch Children's Research Institute, University of Melbourne, Melbourne, VIC, Australia (Prof George C Patton MD); Health, Nutrition and Population, World Bank, Washington, DC, USA (Linda Schultz MPH); and University of California,

Introduction

Society and the common legal definition seem to have defined maturity correctly: it takes around 18–21 years for a human being to reach adulthood. The evidence shows a need to invest in the crucial development period from conception to 2 years (the first 1000 days) and during important phases over the next 7000 days. Similar to the fact that babies are not merely small people (ie, they need special and different types of care), growing children and adolescents are also not merely short adults—they too have crucial phases of development that require specific interventions. To ensure that life's journey begins right is essential, but provision of support to guide development during the next 7000 days is also essential to achieving full potential as an adult. Our thesis is that research and action on child health and development should evolve from a narrow emphasis on the first 1000 days (an age-siloed approach) to holistic concern over the first 8000 days (an approach that embraces the needs across the life cycle).

We present an overview of the analyses from volume 8 of Disease Control Priorities, 3rd edition, published by the World Bank, entitled Child and Adolescent Health and Development.[1] This volume identifies cost-effective, scalable health interventions during middle childhood (5–9 years) and adolescence that can promote physical, cognitive, and intellectual development. In 30 chapters, the volume explores the health and developmental needs of individuals in middle childhood and adolescence and presents evidence for a package of investments to address priority health needs, expanding on other work in this area, such as the Lancet Commission on adolescent health and wellbeing.[2,3] The analyses suggest that modest health investments are essential to attain maximum benefit from investments in schooling for individuals aged 5–19 years, such as those proposed by the International Commission on Financing Global Education Opportunity.[3] Volume 8 shares contributors to both Commissions, and complements volume 2 in the DCP-3 series, Reproductive, Maternal, Newborn and Child Health,[4,5] which focuses on health in children under 5 years. Figure 1 sets out the sequential phases of development and proposes a standardised age nomenclature; the current absence of which serves to emphasise the neglect of some age-groups.

This Review summarises the main conclusions of volume 8 and is intended to map the evidence and

Key messages

- It takes some 8000 days for a child to develop into an adult. 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.
- Investment in health during the first 1000 days is widely recognised as a high priority, but investments are often neglected in the following 7000 days of middle childhood and adolescence. This neglect is also reflected in the investment in research on these age groups.
- At least three phases are crucial to health and development during the next 7000 days, each requiring a condition-specific and age-specific response: middle childhood growth and consolidation phase (5–9 years) when infection and malnutrition remain key constraints on development, and mortality rates are higher than previously realised; adolescent growth spurt (10–14 years) when body mass increases rapidly and substantial physiological and behavioural changes associated with puberty occur; and adolescent growth and consolidation phase (15–19 years), which brings further brain restructuring, linked with exploration, experimentation, and initiation of behaviours that are lifelong determinants of health.
- Broadening of investment in human development to include scalable interventions during the next 7000 days can be achieved cost-effectively. Two essential packages were identified: the first package addresses the needs in middle childhood and early adolescence through a school-based approach; the second focusses on older adolescents (15–19 years) through a mixed approach also involving the community, media and health systems. Both packages offer high cost-effectiveness and benefit-cost ratios.
- Well designed health interventions in middle childhood and adolescence can leverage the current substantial investment in education, and improved design of educational programmes can improve health. The potential synergy between health and education is undervalued and the returns on co-investment are rarely optimised.

School-age essential package (5-14 years)

	Primary health centre	School	Benefit of intervention delivery in schools
Physical health			
Deworming	Deworming	Deworming	In endemic areas, regular deworming (following WHO guidelines) can be done inexpensively in schools since most deworming drugs are donated; benefits in school attendance has been reported as a result
Insecticide-treated net promotion	Insecticide-treated net promotion	Insecticide-treated net promotion	Education about the use of insecticide-treated nets in endemic areas is important because schoolchildren tend to use nets less often than mothers and small children.
Tetanus toxoid and HPV vaccination	Tetanus toxoid and HPV vaccination	Tetanus toxoid and HPV vaccination	Schools can be a good venue for administration of tetanus boosters, which benefit young people and babies born to those young women.
Oral health promotion	Oral health promotion and treatment	Oral health promotion	Education on oral health is important; poor households generally cannot afford dental treatment.
Correcting refractive error	Vision screening and provision of glasses	Vision screening and provision of glasses	Vision screening and provision of inexpensive ready-made glasses boost school performance
Diet			
Micronutrient supplementation	..	Micronutrient supplementation	Supports learning
Multifortified foods	..	Multifortified foods	Supports learning
Food provision	..	School feeding	School meals promote attendance and education outcomes

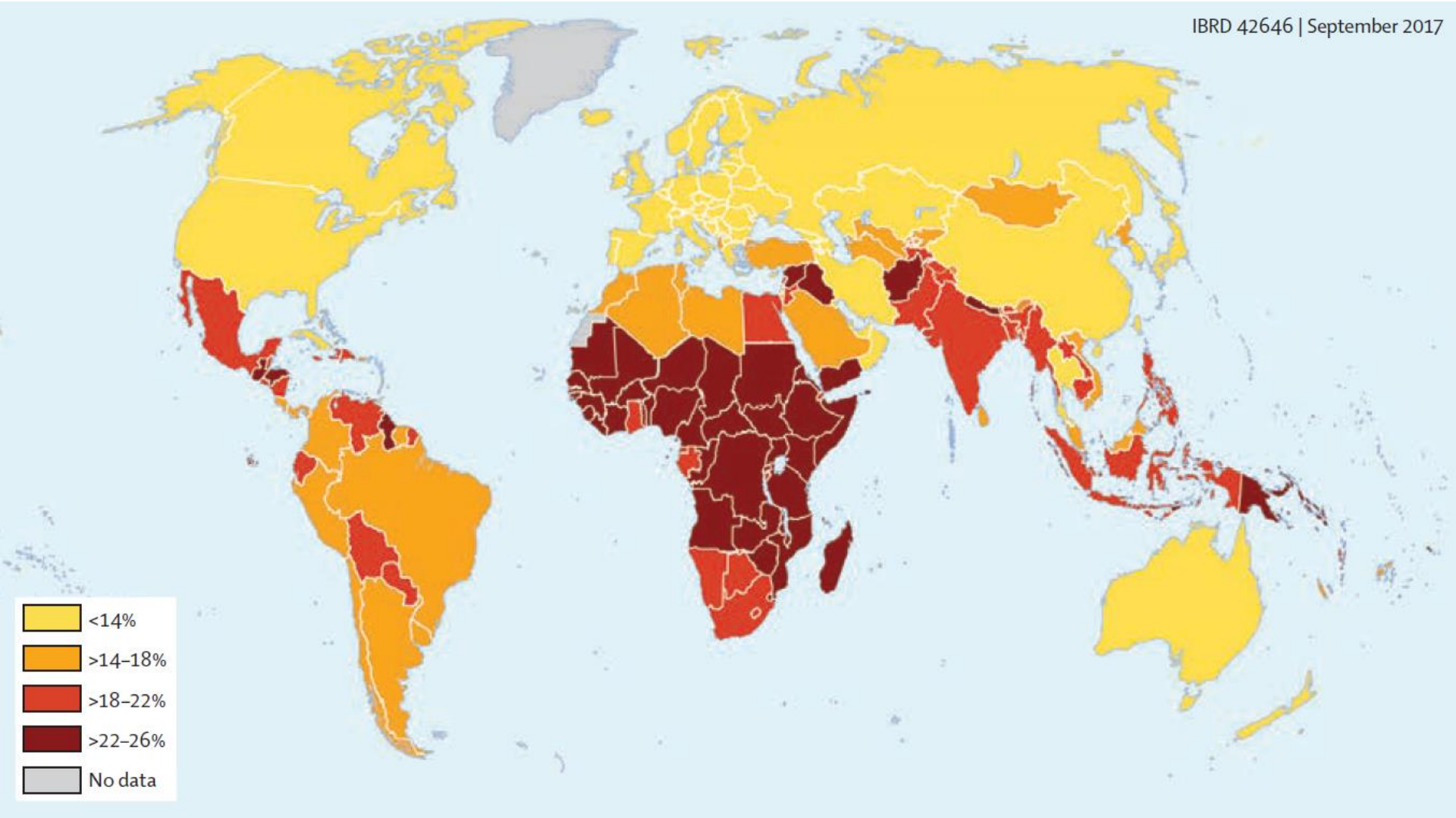
Adolescent essential package (10-19 years)

	Population	Community	Primary health centre	School	Benefit of intervention delivery in schools
Physical health	Healthy lifestyle messages: tobacco, alcohol, injury, and accident avoidance and safety	Adolescent-friendly health services	Adolescent-friendly health services: provision of condoms to prevent STIs; provision of reversible contraception; treatment of injury and abuse; and screening and treatment of STIs	Healthy lifestyle education including accident avoidance and safety	National media messages on healthy life choices designed to appeal to adolescents, combined with national policy efforts to support healthy choices (ie, limit adolescent access to products most harmful to their health)
	Sexual health messages	..	..	Sexual health education	Additional health education in schools aimed at issues relevant to older ages (15–19 years) in countries with higher levels of secondary completion, intended to supplement earlier messages for children aged 10–14 years in the school-age package
		..	..	Adolescent-friendly health services	Provision of adolescent-friendly health services within schools or health-care facilities that respect adolescent needs
Nutrition	Nutrition education messages	..	..	Nutrition education	..
Mental health	Mental health messages	..	Mental health treatment	Mental health education and counselling	..

Disease Control Priorities, 3rd Edition

DCP3 Volume Topics
1. Essential Surgery - 2015
2. Reproductive, Maternal, Newborn and Child Health -2016
3. Cancer - 2015
4. Mental, Neurological, and Substance Use Disorders - 2015
5. Cardiovascular, Respiratory, Renal and Endocrine Disorders - 2017
6. HIV/AIDS, STIs, Tuberculosis and Malaria - 2017
7. Injury Prevention and Environmental Health - 2017
8. Child and Adolescent Health and Development - 2017
9. Disease Control Priorities: Improving Health & Reducing Poverty - 2018

Proportion of country population composed of adolescents (ages 10 to 19 years)



Cost of components of essential packages to promote health of school-age children in LLMICs

Intervention	Mode of delivery	Approximate cost per child who benefits (US$) in LLMICs	Approximate cost per child (US$) in relevant age group	Aggregate cost in low-income countries (US$, millions, per year)	Aggregate costs in lower-middle-income countries (US$, millions, per year)
School-age children					
School feeding	Meals (fortified with micronutrients) provided at school	41 (targeted to 20% of population in most food-insecure or poor areas)	8·20 per child aged 6–12 years	340	2400
Health education (oral health, reproductive health, and ITN use)	ITN education delivered only in endemic areas	0·50 per educational message (ITN message delivered only in endemic areas; assumed 50% of children in LLMICs)	0·75 per child aged 6–12 years	31	110
Vision screening	Pre-screening by teachers and vision tests and provision of ready-made glasses on-site by eye specialists	3·60 per child to screen and provide glasses to the fraction of the age group needing glasses	0·60 per child aged 6–12 years	25	90
Deworming	Medication for soil-transmitted helminths or schistosomiasis delivered by teachers once a year in endemic areas	0·70 per child in endemic areas; 50% of areas endemic	0·35 per child aged 6–12 years	14	52
Tetanus toxoid booster	Single-dose booster administered to all children in one grade by nurse or similar	2·40 per child	0·40 per child aged 6–12 years	16	59
HPV vaccine	Part of the cancer essential package	10 per fully vaccinated girl (Gavi-eligible countries)	0·83 per child aged 6-12 years	43	74
Aggregate costs without HPV vaccine	..	48	10	430	2700
Aggregate costs without school feeding And HPV vaccine	..	17	2	130	390

Cost of components of essential packages to promote health of adolescents in LLMICs

Intervention	Mode of delivery	Approximate cost per child who benefits (US$) in LLMICs	Approximate cost per child (US$) in relevant age group	Aggregate cost in low-income countries (US$, millions, per year)	Aggregate costs in lower-middle-income countries (US$, millions, per year)
Adolescents					
Media messages or national policy regarding health	Messages concerning use of tobacco, alcohol, and illicit drugs; sexual and reproductive health; mental health; healthy eating or physical activity	1 per adolescent	1 per adolescent aged 10–19 years	..	..
Health education in schools	Education for targeted age group	9 per year per adolescent aged 14–16 years	3 per adolescent aged 10–19 years	90	450
Adolescent-friendly health services	Health services offering respectful and confidential access for adolescents	5 per adolescent	5 per adolescent aged 10–19 years	790	2300
Aggregate costs	..	15 per adolescent aged 10–19 years	9 per adolescent aged 10–19 years	880	2700

Benefit-cost ratios of one additional year of schooling in LICs, LMICs, and UMICs

Income group		Earnings-only BCR	Health-inclusive BCR	% difference (health-inclusive versus earnings-only)
LICs		5.2	9.9	92
Lower-middle-income countries		2.5	3.7	44
UMICs		1.0	1.5	47
Benefits and costs included	Health benefits	No	Yes	
	Earnings benefits	Yes	Yes	
	Direct cost	Yes	Yes	
	Opportunity cost	Yes	Yes	

Note: BCR = benefit-cost ratio; LICs = low-income countries; UMICs = upper-middle-income countries.

In conclusion…

…investment in the first 1000 days alone is not sufficient

- Research and action on child health and development should evolve from a narrow emphasis on the first 1000 days (an age-siloed approach) to holistic concern over the first 8000 days (an approach that embraces the needs across the life cycle)

DCP3 Disease Control Priorities

economic evaluation for health