

### This month's theme: INVESTING IN EARLY CHILDHOOD DEVELOPMENT

#### Well-designed early childhood development programs can pay major dividends

Investments in very young children to limit their exposure to disease, ensure adequate nutrition, and stimulate their early learning, yield returns across the lifecycle. Stunting—excessively low height-for-age, caused by extreme nutrient inadequacy and repeated bouts of disease—results in impaired brain development, lower cognitive and socioemotional skills, lower levels of educational attainment, and shortness and illness in adulthood if this window is missed. In this talk, [Emanuela Galasso](#) focused on nutrition and early childhood development interventions. She discussed evidence from developmental science and economics that can buttress policy design of interventions. Finally, she talked about the behavioral change dimension of nutrition and childhood development interventions, including the role of information, beliefs, and agency that the poor have in adopting optimal behaviors.<sup>1</sup>

#### Policies targeted to poor households miss many other hungry women and children

Household data are almost invariably used to measure individual poverty. In other words, a poor household is assumed to contain poor individuals. Also, antipoverty policies in developing countries often assume that targeting poor households will reach poor individuals. This assumption is tested using nutritional status as a proxy for individual poverty for **Sub-Saharan Africa**. According to this assessment undernourished women and children are spread widely across levels of household wealth and consumption. Roughly three-quarters of underweight women and undernourished children are not found in the poorest 20 percent of households, and around half are not found in the poorest 40 percent. Countries with higher overall rates of undernutrition tend to have a lower share of undernourished individuals in non-poor households. The results are consistent with evidence of substantial intra-household inequality. To successfully reach undernourished women and children, policy interventions will either require much more individualized information or broader coverage.<sup>2</sup>

#### Development gaps emerge early for poor children and become larger in school

Low socioeconomic status (SES) puts poor children at risk for lower health and development outcomes (e.g., language, cognition, and behavior). This study examines the magnitude and age profile of SES gradient changes over time by modeling skill formation as a cumulative and

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<sup>1</sup> [Story](#) | [Video](#) | [Presentation](#) | [Blog](#) | [Working Paper](#) | [Research Note](#) | [Infographic](#).

<sup>2</sup> [Are Poor Individuals Mainly Found in Poor Households? Evidence Using Nutrition Data for Africa](#), Caitlin Brown, Martin Ravallion, and [Dominique van de Walle](#), World Bank Policy Research Working Paper 8001, March 2017 | [Blog](#).

dynamic process. A cohort of children in **Madagascar** surveyed between 3–6 and 7–10 years old captures longitudinal patterns that show substantial wealth gradients in receptive vocabulary, cognition, sustained attention, and working memory, even after factoring in lagged outcomes, maternal endowments, measures of child health, and home stimulation. Wealth gradients significant at ages 3–4 widen with age and flatten by ages 9–10. For vocabulary and sustained attention, the gradient grows steadily between ages 3 and 6; for cognitive composite and memory of phrases, the gradient widens between ages 7 and 8 before flattening. These gaps in cognitive outcomes translate into equally sizeable gaps in learning outcomes. Between 12 and 18 percent of the predicted gap in early outcomes is accounted for by differences in home stimulation, even after controlling for maternal education and endowments.<sup>3</sup>

### **Mass deworming remains a sound development investment**

The World Health Organization is reviewing its long-standing recommendation of mass drug administration (MDA) for helminths in areas with more than 20 percent prevalence of hookworm, whipworm, and roundworm. With deworming drugs widely considered safe and effective, the key question is whether their long-term educational and economic benefits exceed their per-treatment cost (\$0.30). A recent meta-analysis from the Cochrane Collaboration claims that while treatment of children known to be infected experience a weight gain of 0.75 kg (1.65 lbs.), there is conflicting evidence about MDA impacts on weight and other child outcomes. This study updates the meta-analysis by including previously omitted studies and adding additional data from included studies, and finds that the average effect of MDA on child weight is 0.134 kg. Since only about half of children in the study settings were infected with worms, the implied average effect of MDA on weight gain in infected children is 0.301 kg (0.66 lbs.). This estimated average weight gain per dollar is 35 times more than that from school feeding programs.<sup>4</sup>

### **A conditional cash transfer program led to fewer sick days for young children**

A cash transfer program in **Tanzania**—tested with a randomized controlled trial—led to nuanced impacts on health investments and outcomes. To receive transfers, children aged 0–5 and those over 60 had to make regular visits to health clinics. Clinic visits surged after 1.5 years, both due to increased visits from people not meeting the conditions at the start of the program, but also from people who were already meeting the conditions. That increase disappeared after 2.5 years, largely due to a drop in above-minimal visits by those who were already complying with conditions when the program began. Health improvements materialized, but this took time: They appeared only after 2.5 years and were concentrated among children aged 0–5 years. Health insurance uptake increased, as did spending on protective footwear for children, which reduces exposure to health risks. The largest reductions in sick days occurred in villages with more

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<sup>3</sup> [Dynamics of Child Development: Analysis of a Longitudinal Cohort in a Very Low Income Country](#), Emanuela Galasso, Ann Weber, and Lia C. H. Fernald, World Bank Policy Research Working Paper 7973, February 2017 | Forthcoming in *World Bank Economic Review*.

<sup>4</sup> [Does Mass Deworming Affect Child Nutrition? Meta-Analysis, Cost-Effectiveness, and Statistical Power](#), Kevin Croke, Joan Hamory Hicks, Eric Hsu, Michael Kremer, and Edward Miguel, World Bank Policy Research Working Paper 7921, December 2016.

baseline health workers per capita, suggesting that cash transfers to increase demand for health services will likely work best where there is a supply of health services to meet the demand.<sup>5</sup>

#### **School readiness programs are more effective when teachers and parents are trained together**

The Sustainable Development Goals call for all children to “have access to quality early childhood development, care, and pre-primary education so that they are ready for primary education.” A government program in **Malawi** aimed to improve quality at community-based childcare centers and complemented these efforts with a group-based parenting support program. Children in the integrated intervention arm (teacher training and parenting support) had higher scores in assessments of language and socio-emotional development than children in centers receiving teacher training alone at the 18-month follow-up. A rich battery of child assessments, conducted 36 months after baseline, showed no treatment effects among the 6-8 year-old children in any treatment arm, indicating a substantial fade-out of program impacts in the integrated intervention arm. Significant improvements at the centers relating to classroom organization and teacher behavior in the teacher-training only arm did not translate into improvements in child outcomes at either follow-up. The findings suggest that, in resource-poor settings with informal preschools, programs that integrate parenting support within preschools may be more effective than programs that simply improve classroom quality.<sup>6</sup>

#### **Giving cash to mothers does not always lead to significantly better child health or education outcomes**

The Nahouri Cash Transfer Pilot Project in rural **Burkina Faso** incorporated a random experimental design to evaluate the role of conditionality in cash transfer and the gender of the transfer recipient. The programs targeted boys and girls up to age 15 to study the impact of the cash transfer modalities on a broad range of education, health, and household welfare outcomes. Conditionality was linked to older children enrolling in school and attending regularly and younger children receiving preventive health check-ups. Compared with the control group, cash transfers improve children’s education and health and household socioeconomic conditions. For school enrollment and most child health outcomes, conditional cash transfers outperform unconditional cash transfers. Giving cash to mothers does not lead to significantly better child health or education outcomes, and there is evidence that money given to fathers improves young children’s health, particularly during years of poor rainfall. Cash transfers to fathers also yield relatively more household investment in livestock, cash crops, and improved housing.<sup>7</sup>

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<sup>5</sup> [Cash Transfers and Health: Evidence from Tanzania](#) [Cash Transfers and Health: Evidence from Tanzania](#), David K. Evans, Brian Holtemeyer, and Katrina Kosec, *World Bank Economic Review*, April 2017 | Available as [World Bank Policy Research Working Paper 7882](#), November 2016.

<sup>6</sup> [Combining Preschool Teacher Training with Parenting Education: A Cluster-Randomized Controlled Trial](#), Berk Özler, Lia C. H. Fernald, Patricia Kariger, Christin McConnell, Michelle Neuman, and Eduardo Fraga, World Bank Policy Research working Paper 7817, September 2016.

<sup>7</sup> [Evidence from a Randomized Evaluation of the Household Welfare Impacts of Conditional and Unconditional Cash Transfers Given to Mothers or Fathers](#), Richard Akresh, [Damien de Walque](#), and Harounan Kazianga, World Bank Policy Research Working Paper 7730, June 2016.

### **Evidence on small-scale health interventions are poor predictors of service delivery at scale**

Unsafe water and inadequate sanitation and hygiene kill over one million people a year. In Sub-Saharan Africa, most of these deaths are children under five. The current evidence on handwashing and sanitation programs finds improved health effects in small-scale researcher- or NGO-led interventions, but limited health effects for at-scale interventions tested in isolation. This work explores potential complementarities from combining sanitation and hygiene interventions. In **Tanzania**, one year after the three treatments and control—sanitation promotion, handwashing promotion, both interventions together, or neither—ownership of improved latrines increased from 50 to 65 percent and open defecation decreased from 23 to 11 percent in sanitation promotion-only wards. Households in handwashing promotion-only wards showed marginal improvements in hygiene awareness and handwashing related to food preparation. The combined intervention did not improve diarrhea, anemia, stunting and wasting in children. The contrast in results between small-scale, tightly controlled experiments and large-scale effectiveness studies suggest the importance of unpacking the determinants of effective delivery before going to scale. The biological reasoning behind promoting sanitation and hygiene interventions is theoretically sound, but closing the gap between objectives, intervention design and delivery, particularly when working at scale, should be taken into account by researchers, policymakers, and implementers.<sup>8</sup>

### **Deworming in early childhood can benefit younger siblings and the community**

Health shocks can have lasting repercussions during early childhood. For example, intestinal worms, while rarely fatal, infect more than one billion people, predominantly young children in Asia and Sub-Saharan Africa. Although community-based deworming programs are usually aimed at school-age children, they can have large beneficial spillovers on others in the community. How big are the spillovers? A large-scale randomized deworming intervention aimed at primary school pupils in western **Kenya** had long-term effects on younger children who were not directly treated. Even ten years after the intervention, large cognitive effects—comparable to between 0.5 and 0.8 years of schooling—are evident in children who were less than one-year-old when their communities received school-based mass deworming treatment. Cognitive effects are nearly twice as large for children with an older sibling who received treatment directly.<sup>9</sup>

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<sup>8</sup> [Promoting Handwashing and Sanitation: Evidence from a Large-Scale Randomized Trial in Rural Tanzania](#), Bertha Briceño, [Aidan Coville](#), Paul Gertler, and Sebastian Martinez, World Bank Policy Research Working Paper 7164, January 2015 | [Questionnaires](#) | [Data](#) | Revise and resubmit to *PLOS ONE*.

<sup>9</sup> [Exploiting Externalities to Estimate the Long-Term Effects of Early Childhood Deworming](#), [Owen Ozier](#), World Bank Policy Research Working Paper 7052, October 2014 | Revise and resubmit to *American Economic Journal: Applied Economics*.