

## AFTER THE TRANSFERS STOP

Cash transfers directed to female caregivers in Nicaragua led to gains in child-development outcomes that persisted beyond the duration of the program.

Featuring evaluations by Tania Barham, Karen Macours, John A. Maluccio, Norbert Schady, and Renos Vakis

Early childhood is a critical period for investment in human development, the circumstances of which can have lifelong impacts. Physical, cognitive, or behavioral delays in development can result in long-term negative effects on health, educational attainment, labor-market outcomes, and other indicators of well-being.

Conditional cash transfer (CCT) programs are one way to help parents who lack resources invest more in their children. These programs provide families with cash grants as long as they undertake certain activities such as having their children attend regular health check-ups. While there is a large body of evidence on the short-term impacts of CCTs on children's development, there is less evidence on their long-term impacts. To better understand the effects of CCTs later in life, researchers evaluated two distinct CCT programs in Nicaragua.



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In the first evaluation, researchers Tania Barham (University of Colorado Boulder), J-PAL affiliate Karen Macours (Paris School of Economics), and John A. Maluccio (Middlebury College), examined the long-term impacts of CCTs on child development. In this study, they tested whether there is a critical window of time (the first 1,000 days from in utero to age two) for cognitive and physical development by taking advantage of the random assignment of households to receive cash transfers in either an "early" or "late" treatment group. In the second evaluation, Karen Macours, Norbert Schady (Inter-American Development Bank), and Renos Vakis (World Bank) studied a CCT program with three variations to understand the channels through which different program components impacted early childhood development.

**Conditional cash transfers improved children's development.** Overall child-development outcomes were 0.09 standard deviations higher for children in households offered one year of transfers than in comparison households, a result which largely persisted two years after the last transfer.

**Investments made during the first 1,000 days led to larger gains in cognitive development but not in physical development.** Several years after the program ended, ten-year-old boys exposed to CCTs earlier in life had better cognitive development outcomes than those exposed at a later period, but were equivalent in physical development.

**Larger transfers did not lead to better child-development outcomes.** Although households that received larger transfers spent more money, their child-development outcomes were equivalent to households that received smaller transfers. This suggests that program impacts were not solely a function of increased income, but came partly from positive behavioral change among parents.

**Labeling cash transfers as intended for investment in children and targeting them to women may have improved outcomes.** Both programs informed beneficiaries through a social marketing campaign that transfers should be used to improve children's diets and directed transfers to women—two noncash components of the intervention that may help explain gains in children's health and development.

# EVALUATION

In 2000, the government of Nicaragua launched a national CCT program called *Red de Protección Social* (RPS), which provided transfers to low-income households in 42 rural localities. The program offered designated female caregivers bimonthly transfers equivalent to 18 percent of average household expenditures if they met certain requirements, including attending health-education workshops, having children under age five attend regular health check-ups, and enrolling primary school-aged children in school. The program moved to different communities after three years, with communities being randomly assigned to either the “early treatment” or “late treatment” (Figure 1).

**FIGURE 1: BOYS’ AVERAGE AGE DURING THE RPS EARLY OR LATE TREATMENT**



Researchers used an administrative database and a follow-up survey in 2010 to collect data on height, weight, and cognitive test results of ten-year-old boys in both treatment groups. The study focused on boys because they are biologically more vulnerable than girls in early life. By examining outcomes of children born up to one year after the start of transfers, researchers were able to study the impact of being at least partially exposed to the program while in utero. Because assignment to early or late treatment was random, any differences between the two groups can be attributed to whether they were exposed to transfers during or after the first 1,000 days.



PHOTO BY FRANCISCA DE IRUARRIZAGA

In the aftermath of a drought, the government also implemented a second CCT program called *Atención a Crisis* in affected municipalities. In communities randomly selected to participate in the program, the government held a lottery and assigned eligible households to one of three treatment groups. Communities not selected for participation in the program served as a comparison group.

### (1) BASIC CCT

- Cash payment equivalent to 15 percentage of average per capita expenditure

### (2) BASIC CCT + TRAINING

- Cash payment equivalent to 15 percentage of average annual per capita expenditure; plus
- A scholarship to attend vocational training

### (3) BASIC CCT + GRANT

- Cash payment equivalent to 15 percentage of average per capita expenditure; plus
- Cash payment equivalent to 11 percentage of average per capita expenditure to start a nonagricultural business, conditional on developing a business plan

### COMPARISON GROUP

No intervention

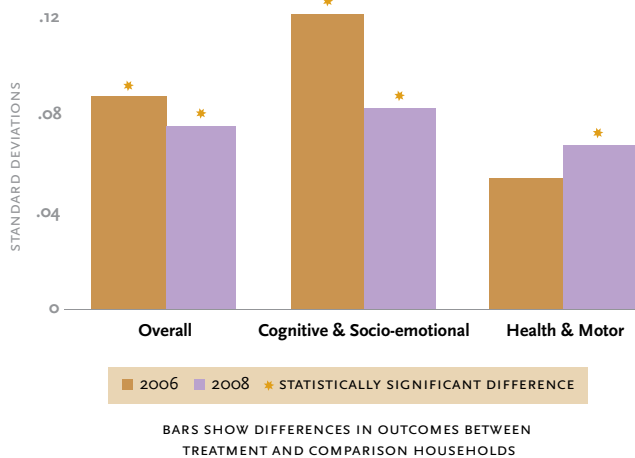
Similar to RPS, *Atención a Crisis* issued transfers to children’s primary caregivers who were almost always women. All beneficiaries received bimonthly transfers for 14 months, conditional on children under age five attending regular health check-ups and primary school-aged children attending school. In practice, however, the government did not monitor children’s check-up attendance. The program also conducted a social marketing campaign to inform beneficiaries of the importance of varied diets, health, and education, and that transfers were intended to improve children’s nutrition and to buy school materials.

Researchers collected baseline data for the evaluation of *Atención a Crisis* in 2005 and conducted follow-up surveys in 2006 and 2008. Surveys included data on several indicators of physical, cognitive, and behavioral development as well as household consumption and purchasing habits.

# RESULTS

**Overall, conditional cash transfers improved child health and development.** Take-up of both CCT programs was high: 99 and 93 percent for the early- and late-treatment groups in RPS, respectively, and 95 percent for all treatment households in Atención a Crisis. Two years after the transfers ended, households exposed to Atención a Crisis still had a 0.08 standard deviation higher level of child health and development outcomes relative to the comparison group (Figure 2). The effect size, while modest, is not trivial: the observed gains were similar to what could be expected from a 37.5 percent increase in mothers' education from the average educational attainment of four years among study participants. The positive impact on child health despite lack of enforcement of the health condition suggests that "labeling" the cash for investments in child development may help change parental behavior.

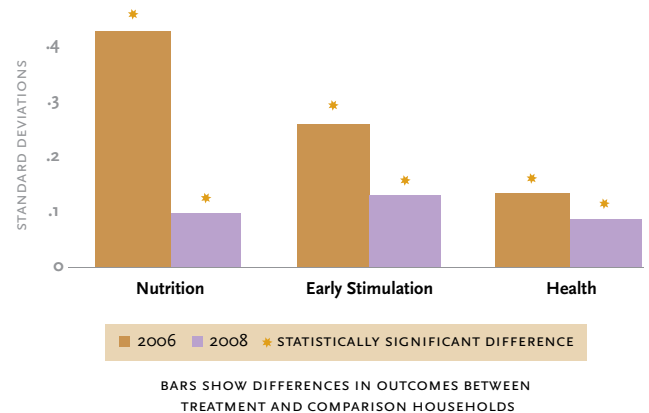
**FIGURE 2: IMPACTS OF ATENCIÓN A CRISIS ON EARLY CHILDHOOD DEVELOPMENT DURING AND TWO YEARS AFTER THE PROGRAM**



**The first 1,000 days represent a critical window for long-term cognitive development.** Seven years after the RPS transfers ended in the early-treatment group, boys had better cognitive development outcomes than their peers in the late-treatment group. Exposure to RPS in the first 1,000 days led to a 0.15 standard deviation increase in cognitive development compared to exposure at a later age. In terms of physical development, an initial height difference observed in 2003, when the early-treatment group had received three years of the cash transfers and the late-treatment group had just begun receiving transfers, had disappeared completely by 2010. This finding indicates that, over time, boys in the late-treatment group had physically caught up with their peers in the early-treatment group.

**Conditional cash transfers had a large effect on parental inputs into child development.** The Atención a Crisis program, regardless of treatment group, had a positive effect on inputs into child development both during the program and two years after it ended. Program-eligible households provided more nutritious food to their children, more cognitive and social stimulation, and exhibited a higher use of preventive healthcare (Figure 3). Households eligible for higher transfer amounts spent more but did not show an additional increase in inputs into child development, suggesting that the effects came at least in part from changes in household decision-making rather than simply increased income from the cash transfers.

**FIGURE 3: IMPACTS OF ATENCIÓN A CRISIS ON INVESTMENTS IN CHILDREN DURING AND TWO YEARS AFTER THE PROGRAM**



**Cash transfers alone may not account for overall program impact on child development.** While beneficiaries in the Basic CCT+Grant group of Atención a Crisis received larger transfers and had higher expenditures than those in the Basic CCT group, they did not have better child-development outcomes. This finding, together with a continued program impact two years after transfers ended, strongly suggests that noncash components of the program also contributed to improved child-development outcomes. For example, the social marketing campaign or directing transfers to women could have contributed to the observed change in household decision-making that lasted beyond the program.

# POLICY LESSONS



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**CCTs can be an effective tool to improve child-development outcomes.** The Atención a Crisis program resulted in positive impacts on cognitive, physical, and behavioral development, which persisted two years after the transfers ended.

**Investments made early in life can lead to long-term cognitive benefits.** Ten-year-old boys in households exposed to CCTs in utero and during the first two years of life had better cognitive outcomes several years later than those exposed after age two. This suggests that the first 1,000 days provides a critical window of time for making long-term investments in children's cognitive development.

**While investing early in life is important for physical growth, catching up is possible.** Boys who were exposed to CCTs after age two caught up in height to boys who were exposed in the first 1,000 days. This is consistent with the larger body of evidence of catch-up in physical growth, and suggests that while it is important to invest early, investments made outside the critical window can still result in positive outcomes.

**Noncash components may be important in determining the effectiveness of CCT programs.** Households eligible for larger transfers had higher expenditures but did not realize better child-development outcomes. Noncash components of CCTs, for example social marketing or directing transfers to women, might encourage sustained behavioral changes by parents that are important to achieving long-term gains in child development. In thinking about CCT program design, policymakers may want to consider features aimed at improving parental decision-making about investment in their young children in addition to identifying the optimal amount to transfer.

**Featured Evaluations:** Macours, Karen, Norbert Schady, and Renos Vakis. 2012. "Cash Transfers, Behavioral Changes, and Cognitive Development in Early Childhood: Evidence from a Randomized Experiment." *American Economic Journal: Applied Economics* 4(2): 247-273.

Barham, Tania, Karen Macours, and John A. Maluccio. 2013. "Boys' Cognitive Skill Formation and Physical Growth: Long-Term Experimental Evidence on Critical Ages for Early Childhood Interventions." *American Economic Review: Papers & Proceedings* 103(3): 467-471.

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