TITLE

The Malawi Social Cash Transfer and the impact of $14 per month on child health and growth

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KEY MESSAGES

1. The Social Cash Transfer Scheme in Malawi appears to have reduced stunting and underweight in children under five years; increased height in 5-18 year olds; and reduced reported illnesses in children and youth aged 0-18 in cash transfer recipient households compared to non-recipient households.
2. Double difference impact estimates for growth and reported illnesses in the Malawi scheme are similar to programmatic impacts from conditional schemes implemented in Latin America.
3. Conditions placed upon cash, which are common in Latin American cash transfer schemes, do not appear to be necessary for children to experience health and nutritional gains, although a randomized control trial that has intervention arms with and without conditions would generate evidence to compare programs.
4. This study provides early evidence that Malawi's SCTS is a tool within the National Social Protection Policy that fights poverty and perhaps the lifelong health impacts of poverty on children.

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The Malawi Social Cash Transfer and the impact of $14 per month on child health and growth

ABSTRACT

Objective: We assessed the impact of the Social Cash Transfer Scheme (SCTS), a monthly cash stipend of approximately US$14, on child health and nutrition in some of the poorest households in Malawi. While conditional cash transfer programs in Latin America have yielded encouraging impacts on child health, there is little evidence on the impact of unconditional cash transfers in Africa.

Data Sources: This mixed methods study, includes a longitudinal household survey with a panel of intervention and control households and qualitative interviews and focus groups. Quantitative data collection occurred before intervention households received the cash transfer at baseline and one year later, at endline, before comparison households became recipients. Qualitative data collection occurred after intervention households had received the cash for at least six consecutive months.

Study Selection: Study households were identified in a community targeting process separate from the evaluation study. Among clusters of 1,000 households, ten percent of households that were ultra poor (in the lowest expenditure quintile) and labor constrained (no able-bodied worker or unfavorable dependency ratio) were targeted to receive the transfer. For the evaluation, we randomly selected the targeted households in four village

clusters as the intervention group and households in another four village clusters as the comparison group.

Results: We present evidence that Malawian children benefit from the cash grant, both nutritionally and through better health with fewer illnesses. The greatest impacts include a 13 percentage point difference in the proportion of underweight 0 to 3-year-olds, a 0.5 centimeter gain in height among 5 to 18-year-olds, and a 10 percentage point reduction in reported illnesses among children aged 0 to 18 years in intervention versus comparison households.

Conclusions: In Malawi, the SCTS appears to have positive impacts on child health and growth, suggesting that conditional transfers may not be necessary for children to experience important gains in health.

Key words:
Cash transfer, social protection, child health, anthropometry, Malawi

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INTRODUCTION

Absolute poverty can have a lifelong impact on children. Without adequate income and food, families make difficult choices about how to use limited resources. As a result, children often embody poverty through malnutrition and poor health.

In Malawi, the draft National Social Protection Policy (2008) calls for programs that confront poverty in order to help families meet their basic needs. Malawi's Social Cash Transfer Scheme (SCTS) is one tool within the Social Protection Policy, and is currently operational in seven districts reaching more than 11,000 households., The scheme was designed to alleviate poverty and reduce malnutrition by delivering reliable monthly cash transfers to ultra poor households that are also labor constrained (Schubert and Kambewa 2006). Additional goals of the scheme include improving school enrolment, reducing child labor, and increasing access to health services. Ultra poor households are defined as those in the lowest expenditure quintile or below the food poverty line and labour constrained households either have no able-bodied adult age 19-64 or have a dependency ratio worse than three so that one adult must care for more than three children, elderly, or chronically ill household members (Schubert and Kambewa 2006). The SCTS is implemented by the Government of Malawi at the level of the District Assembly and utilizes a community based targeting strategy. The SCTS is currently financed through the Global Fund to Fight AIDS, Tuberculosis and Malaria.

Proponents of Social Protection in the form of cash transfers argue that they are a critical tool in helping households meet their basic needs (Barrientos and DeJong 2004), allowing families to purchase food, healthcare, and other necessities, which in turn should improve health outcomes.

While there is limited evidence from resource poor countries on the impact of cash transfers, a recent review of conditional cash transfers on child health found positive impacts on growth in some subgroups (Lagarde, Haines and Palmer 2007). For instance, in Mexico, intervention children aged 12 to 36 months grew 0.96 centimeters taller than non-recipient children after one year on the program (Lagarde et. al. 2007). In Nicaragua, the cash transfer scheme is credited for reducing stunting among 0 to 5 year olds from intervention households by 6 percentage points (Lagarde et. al. 2007; Maluccio and Flores 2004). In contrast, children under 7 years from intervention households in Brazil experienced a negative impact on weight for age scores, which is speculated to have been caused by a misunderstanding of program criteria (Lagarde et. al. 2007; Morris, Olinto, Flores, Nilson and Figueiro 2004).

Additionally, the impact of cash on mother's reports of child illnesses has also been examined. In Colombia, children under 4 years had a reduced probability of reported illness while the program had no apparent impact on older children (Attanasio, Gomez, Heredia and Vera-Hernandez (2005). In Mexico, Gertler (2004) found a 22% decrease in the probability of intervention children under 3 years reportedly experiencing an illness in the past month.

The monthly cash grant in these Latin America countries ranges from approximately $13 to $50 per month, depending on the country, and the age and number of children (Lagarde et. al. 2007). Each of these aforementioned cash transfer schemes is 'conditional' requiring that recipients participate in health and nutrition examinations and workshops. Additionally, in Brazil, Nicaragua, and Mexico, children receive nutrition supplements. In contrast to programs from Latin America, Malawi's SCTS is not conditional, nor do recipients receive additional benefits or supplements. Policy advisors argue that in resource poor countries, such as Malawi, it would be too time-consuming to monitor conditions given existing human resource constraints within government (Schubert and Slater, 2006). Moreover, they argue that the public sector

infrastructure for health and education lacks the capacity to provide the services that the cash would be conditioned upon. Beneficiaries are advised to use money for food, agricultural inputs, healthcare and education; but recipients make decisions about cash expenditures without conditions. Until now, there have been limited examples of an unconditional cash transfer in a resource poor setting and thus no real understanding of the potential impact of unconditional transfers within poor households.

In Mchinji Malawi, the government made the first cash transfer payments in June 2006. By April 2008, 2,878 households in the district were receiving transfers on a monthly basis with total program expenditures at MK6.1 million (US$43k)[i] per month. The base range for monthly transfers is MK600 (YS$4.30) for a one person household to MK1800 (US$12.85) for households with four or more members, while on average, beneficiaries receive MK2,000 (US$14). The transfer amount depends on the size of the household and the number of school aged children (a MK200 top-up is paid for primary school aged children and MK400 for secondary school aged youth). The SCTS will cost an estimated US$60 million per year by 2012 when 10% of all households per district are included in the scheme (Government of Malawi, 2009).

We used the natural rolling out of scheme to conduct an independent evaluation of the SCTS from March 2007 to April 2008, in order to begin to fill the research gaps on the impact of cash transfers in resource poor countries. In the longitudinal study, we examined the impact that cash has on intervention households and their members compared to the control group. In this article, we focus on the impact of cash on the health and nutritional status of children.

METHODS

[i] US$1 = MK140 2007

The Boston University Institutional Review Board and the Malawian Health Research Council at the Ministry of Health approved the study protocols submitted for the evaluation.

Sample Selection

Mchinji is a rural district, located about 120 kilometers west of Lilongwe, Malawi's capital city. The population of Mchinji is an estimated 456,558, living in 97,209 households (National Statistics Office, 2004). The District Assembly uses administrative boundaries or village groups to implement the SCTS. Village groups combine multiple villages and contain approximately 1,000 households. By March 2007, the SCTS was operational in 29 village groups within four out of nine Traditional Authorities (TAs) in Mchinji. TAs are larger geographical boundaries containing multiple village groups, each with its own traditional leader. In each village group, community committees select 10% of the poorest households that are also labor constrained (approximately 100 households per VDC) in a multistage process to receive the SCTS (Miller, Tsoka, Reichert, 2009).

In February 2007, the District Assembly identified the next eight village groups eligible for the SCTS according to the scale-up plan to reach all eligible households in the district by 2009. The staggered roll-out of the SCTS allowed for an evaluation in which we could identify intervention and control groups, collect baseline data, and follow both groups for one year until the comparison group of eligible households began to receive the cash transfer. The scheme's multi-stage, community participatory targeting process was implemented in order to select 100 eligible SCTS beneficiaries per VDC. In the SCTS targeting process, community committees may use slightly different criteria for targeting beneficiaries in their respective village groups (e.g. prioritizing households with orphans in one group and households with elderly in another) (Miller, Tsoka and Reichert 2008a). Indeed, during observations, we found that the criteria for

choosing beneficiaries varied (Miller et. al. 2009). Still, in order to evaluate the SCTS, we randomly assigned four village groups to the intervention and the remaining four to the comparison group. The sampling frame is a roster of all SCTS approved households in the four intervention (408 households) and the four comparison village groups (411 households).

We visited all respondents at their homes and interviewed the head of household registered to receive the grant, or his/her deputy head. One challenge we encountered was that the SCTS created the incentive for households to exaggerate the number of adults or children living in the house in order to receive more money (Miller et. al. 2008a; Miller, Tsoka and Reichert 2008b). We found that 'ghost' members in both intervention and comparison households were listed for the purpose of increasing the monthly allotment from the SCTS, while 'ghosts' did not actually live in the house. We identified and removed 110 ghosts from the panel (in 53 households) before the analysis. Based on extensive fieldwork and RA training, we are reasonably confident that we removed most of the 'ghosts' from the sample (Miller et. al. 2008b). It is unlikely that information, such as age and date of birth, for made-up children would have been consistent between rounds, that 'ghost' children would be available for measuring at multiple time points, and that RAs would not have noticed the inconsistencies within these households.

Food Bucket for Comparison Households

In September 2007, UNICEF gave control households a plastic bucket valued at MK1,230, (US$8.80) containing oil, sugar, tea, salt, soap, and beans. Intervention households were not given the bucket because of resource constraints. Still, we concluded that the benefits of recognizing the dire situation of comparison households outweighed the minimal risk of biasing results. It is unlikely that the bucket biased findings given that six months passed from when households received buckets and endline data collection.

Data Sources for the Impact Evaluation

This mixed method study included a longitudinal household survey with a panel of randomized intervention and control households; and qualitative key informant interviews with community stakeholders and focus group discussions with recipient children. Quantitative data collection occurred in March 2007 (baseline) and one year later in April 2008 (endline) and qualitative data collection occurred in October and November of 2007 and March of 2008.

First, we developed structured questionnaires based on existing national surveys used in Malawi such as the Integrated Household Survey (World Bank), Demographic Health Surveys (USAID) and Multiple Indicator Cluster Surveys (UNICEF). The surveys were developed in English, translated into Chichewa, and back translated into English. We trained the team of research assistants (RAs) and surveys were pilot tested and revised. The survey captured a range of demographic, economic, and health information along with anthropometric data for all children.[ii] Surveys were checked daily during data collection and entered into the Census and Survey Processing System (CSPRO). The CSPRO database was exported to Statistical Analysis Software (SAS 9.1) for cleaning and analysis.

We used the World Health Organizations' Child Growth Standards to convert age, height, and weight scores into height-for-age, weight-for-height, and weight-for-age z-scores that measure how far children are from the average for their age and gender with regard to stunting, wasting, and underweight (World Health Organization 2008). We removed implausible data points that were plus or minus four standard deviations from the mean and coded remaining scores that were minus two standard deviations from the mean as stunted, wasted or underweight. In total, 148 children were removed from the analysis, with no differences between intervention and

[ii] 87% of intervention and 87% of comparison children were measured in both rounds. Children who were not measured were either not home during data collection or call backs or refused because measuring height/length is associated with purchasing a coffin.

comparison children. One challenge during data collection was that caregivers, particularly for orphaned children, did not always know children's ages. If age reports were not consistent between rounds, children were removed from the analysis because of implausible z-scores.

For older children, we used the WHO macro for 5 to 18 year olds to get BMI scores and BMI z-scores (World Health Organization 2008). Children and youth with scores less than two standard deviations from the mean were coded as underweight.

Next, we created a dummy variable for acute illnesses for all children (Attanasio et. al. 2005; Gertler 2000). If the household head reported that a child had experienced any symptom or illness in the past 30 days including vomiting, fever, coughing, diarrhea, eye, ear or mouth infections, headache or abdominal pains, the child was coded as having experienced an acute illness.

Quantitative Statistical Analysis

We calculated univariate and bivariate statistics to examine the differences in anthropometric measurements and acute illnesses among children depending on their age and intervention status. Next, we computed difference-in-differences estimates, which is a standard method for estimating program impacts in randomized community control trials (Ravallion 2003). We calculated the mean difference between outcome values in the intervention and comparison groups at baseline in March 2007, prior to the transfer in both groups, and in April 2008, when intervention households received the transfer for one year. We used ordinary least squares regression in SAS to estimate the program impact, and its associated p-value, which is the difference between the two mean differences for the given outcome. The double difference methodology accounts for any observable or unobservable between-group differences at baseline by subtracting out existing differences from the equation (Maluccio and Flores 2004). This double

difference is the estimate of the program impact (i.e. the difference-in-differences impact estimate, which is reported in percentage points).

Qualitative Data Collection and Analysis

We also conducted key informant interviews with all health extension workers in the intervention villages (n= 8) and focus group discussions with children from intervention households (17 focus groups and 170 children). Focus groups were held in villages, in locations conducive to confidential discussions. All children from SCTS households aged 8-15 within a 15 minute walking distance were invited to participate. Research assistants (RAs) were trained in qualitative methods before piloting the instruments and collecting data. RAs transcribed notes and recordings from Chichewa into English and then transcripts were typed. Field supervisors observed RAs and reviewed all Chichewa and English reports to ensure accuracy and consistency between transcripts, as well as verified translations, obtained clarifications as needed, and identified emerging themes. We read and reread transcripts, developed codes for categorizing data, and coded transcripts using NVIVO 8 software. We examined coded text for common themes and the frequency with which they appeared, and then selected typical quotes to illustrate the phenomena.

RESULTS

Quantitative Results

Household Characteristics

On average, intervention households were larger, more likely to contain children, and cared for more children than comparison households (Table 1). The heads of intervention households were more likely to have completed at least some primary schooling than the heads in comparison households. Nevertheless, at baseline, there were few socioeconomic differences between intervention and comparison households (Table 2) and no differences in food expenditures per

capita. All households owned few assets, but more intervention than comparison households owned sickles at baseline (25% vs. 15%, p<.01).

[Table 1 about here]

By the one year follow up, given the cash transfer, there were significant differences in food expenditures and asset ownership between intervention and comparison households. In addition to food, intervention households spent cash transfers on a range of household goods, housing improvements, agricultural inputs, and livestock.

[Table 2 about here]

Demographics of all children

In April 2008, 76% of the 766 households in the evaluation sample contained children. The majority of children were over age five, with 12-15 year olds as the largest age group (Table 3). More than 60% of intervention and comparison children had survived their mother, father or both parents.

[Table 3 about here]

Child Anthropometry

At baseline, children and youth aged 12-18 years were more likely than younger children, ages 5 to 11, to be underweight (*or less than two standard deviations below the average for body mass index (BMI) for their age and gender*.) Also at baseline, there were more underweight 5 to 18 year olds from intervention than comparison households (11% vs. 7.6%, p=.06).

The proportion of all underweight under-five year old children decreased from 31.7% in March 2007 to 18.8% in April 2008. This can largely be attributed to the decline in the percentage of underweight 0 to 3 year olds in intervention households, from 30.3% in 2007 to 10.6% in 2008, but also from the decline among comparison children from 36.5% to 27%. The gap at baseline in

the percentage of underweight 5 to 18 year olds between intervention and comparison children disappeared by endline data collection such that intervention and comparison children had similar rates of being underweight (7.1% vs 6.5%).

[Table 4 about here]

The difference-in-differences impact estimates suggest that the 12 percentage point difference in stunting and 13.2 percentage point difference in underweight among under three year olds is related to the SCTS (Table 5).

[Table 5 about here]

Among all 5 to 18 year olds, intervention children grew by 0.5 centimeters more than comparison children from 2007 to 2008 ($p<.01$). This was driven by 5 to 8 year olds in intervention households who grew, on average, 6.4 centimeters versus comparison children who gained on average 5.9 centimeters from March 2007 to April 2008 ($p=.02$) (Table 6). Twelve to 18 year olds in intervention households grew on average 5.1 centimeters between 2007 and 2008, which was 0.4 centimeters more than comparison children. The difference between 16 to 18 year olds, rather than among 12 to 15 year, drives this finding.

[Table 6 about here]

Acute Illnesses

In March 2007, there were no significant differences in the percentage of intervention or comparison children who reportedly suffered from any acute illness (such as a cough, diarrhea, eye, ear or mouth infections, fever, or vomiting) in the past 30 days (Table 7). Among 0 to 3 year olds, three out of four children were reported to have experienced some illness, while the percentage of children with illnesses in the previous month ranged from 58% to 70% among three to eighteen year olds. All groups experienced a decline in reported acute illnesses between 2007

and 2008. However, the percentage of children that experienced acute illnesses in the past 30 days was significantly lower in intervention versus comparison children in the following age groups: 5 to 8 years, 12 to 15 years, and 16 to 18 years.

[Table 7 about here]

In an analysis of all children, the estimate of the impact of the cash transfer is a 10-percentage point difference between intervention and comparison children in reported acute illnesses such that intervention children had the greatest decline in acute illnesses (Table 8). Disaggregated by age, among 5 to 8 year old children, there was nearly a 14 percentage point impact from the cash transfer among intervention children (p=.08) and an 11 percentage point impact among 12 to 15 year olds (p=.07). The near 12-percentage point difference between intervention and comparison children from baseline to April 2008 among children aged 37 to 59 months was not significant, but likely due to the small sample size in that age group.

[Table 8 about here]

Qualitative Results

Of the 17 focus groups that we conducted with children and youth, there was consensus in 14 (82%) groups that children ate more since receiving the cash. Typical quotes follow:

> *They [caregivers] make good decisions because they buy food for the family and we are having a health life. We are now eating three times a day, which is very different with the past when we were only eating once, or sleeping without taking food.*

> *They [caregivers] are now managing to buy food everyday, and we eat porridge every morning when going to school. …*

In 13 or 76% of focus groups, children reported increased food diversity in their households, so that since receiving the transfer, household members consumed proteins, rice, relish, cooking oil, tea, sugar, spices, and salt. Typical quotes include:

> *Now we don't frequently get ill since we are eating different types of food that make our bodies strong.*

> *My parents are now able to buy food and we are eating nutritious food, e.g., fish, meat, and sometimes chickens.*

Furthermore, children in 12/17 focus groups reported that health status had improved while in 1/17 groups, children reported that health had stayed the same.

> *The children are now looking good, healthy …because of nice food. There are no frequent sicknesses now.*

> *We used to lack things. Now when we get sick we can go to the hospital properly. We can even buy medicine. We are healthier.*

Finally, each of the health extension workers from the four Traditional Authorities also reported witnessing an improvement in child growth and health status.

> *There is some change. Before the scheme started, three-quarters of the malnourished children that were coming to [local health center] were coming from [Traditional Authority]… I was busy following up such malnutrition cases. These days, it has changed; there are few malnourished children from this area. In fact, I rarely make follow up visits these days. The children are now healthy. Their families are now buying good food. They at least eat meat, fish, as well as vegetables. [Health Worker]*

From another Traditional Authority:

> *Before the SCTS, we used to have a lot of malnourished children. These days, there are very few malnourished children. The parents and grandparents were not coming for treatment at the clinic because of poor health and lack of money to pay for transport. These days, they are coming to the clinic.*
>
> *Health status has greatly improved. Since they [recipients] take enough nutritious food. …I predict a healthy Malawi in the future.*

Discussion

Dialogue on cash transfers inevitably involves a debate on how families choose to spend grants and whether children benefit from household-level transfers. Throughout Latin America, cash transfers are conditional requiring that families fulfill certain requirements. In contrast, the Social Cash Transfer Scheme in Malawi does not condition transfers on any specified behaviors. The Malawi SCTS does not provide nutritional supplements to children, nor require growth-monitoring visits, attendance at health talks or supply side benefits to health care centers. Once again, opponents of conditional requirements in Africa argue that they are unfair in resource poor settings where health care worker shortages and inadequate infrastructure may undermine the ability of recipients to fulfill conditions and where governments lack the resources to monitor adherence (Schubert and Slater 2006).

We do not compare conditional and unconditional schemes in this study give that we only evaluated the existing government-led intervention. Nevertheless, we present evidence that Malawian children benefit from the cash grant even without conditions, both nutritionally and from better health with fewer illnesses, with effect sizes similar to those reported from the conditional schemes in Latin America. At baseline, the percentage of children under-five years that were stunted, wasted and underweight from ultra poor and labor constrained households is

similar to the percentage of malnourished children in the poorest economic quintile from the 2004 Demographic and Health Survey (DHS) (stunted 51%, 54%; wasted 6%, 6%; underweight 32%, 28% respectively) (Table 4) (National Statistics Office and ORC Macro 2005). By endline, rates of stunting (47%) and underweight (14%) among children in intervention households were far below the national average.

However, these impact estimates are not significant, which is likely due to the small sample size of under-five year olds. Unfortunately, the sample of children under five was smaller than expected, which is not completely surprising in these ultra poor and labor constrained households where there was no existing estimate of the number of under five year olds per household available. The age pattern of children, and small percentage of under-five year olds, stems from demographic changes whereby 25% of these households are skip-generation households, containing children and grandparents without the middle, adult generation. Nevertheless, power to detect a 10 percentage point difference with a sample of 209 (stunting) or 216 (underweight) children is below the standard 80% level. Despite the fact that disaggregating children by ages reduces the sample size and power, we believed the differences between age groups were important to present as they require further investigation as the evidence base on the impact of cash transfers on child health and nutrition in resource poor countries is developed.

Additionally, while there were no significant program impacts on the percentage of children aged 5 to 18 years classified as underweight, there were significant differences in height so that intervention children gained more height than comparison children, which is likely a result of greater and higher quality nutritional intake.

The cash transfer also appeared to have an important impact upon acute illnesses resulting in a 10 percentage point difference between intervention and comparison children between 2007 and

2008. Future studies, including intervention arms with and without conditionality would be useful to determine if there could be greater impacts, such as a further reduction in illnesses and the percentage of stunted or underweight children, and greater gains in height with conditions, as well as test whether conditions are actually feasible.

Strengths and weaknesses

In contrast to some evaluations, which rely on large, national datasets, data for this study were collected solely to evaluate the impact of the SCTS. As a result, we were able to visit households repeatedly to collect high quality data, return to households to fill in or confirm data points, observe households and communities over multiple months, and identify inconsistencies (i.e. ghost members). While the demographic differences between study groups may be indicative of variations between villages, more likely, they result from biases in the targeting process towards households with children or elderly-only households (Miller et. al. 2009). Despite these differences, again, the double difference analysis accounts for the characteristics that may influence estimates of the impact of the cash transfer. While we can be confident in the validity of the double difference estimates of the program impact, still future beneficiaries who are very different from the intervention group may behave somewhat differently from this intervention group when given the cash transfer.

In this study, we were constrained by the resources needed to implement a large epidemiological field study, and were not able to include more households when we found, for example, that the number of under-five year olds was less than expected.

Moreover, it is possible that the above findings are slightly biased towards the null because the food buckets were given only to the comparison groups. While resource limitations prevented all households from receiving the bucket, field staff felt strongly that the extreme level of destitution

found in comparison households (some of Malawi's poorest families) required a small acknowledgement of their hunger.

Way forward

In Malawi, our findings suggest that conditions do not appear to be necessary for children to experience some gains, although a randomized control trial that has intervention arms with and without conditions would generate evidence to compare programs. Furthermore, additional and longer-term studies are needed to confirm or refute this study's findings as Malawi scales up and additional resource poor countries implement a SCTS. It is still unclear how households prioritize spending monthly transfers and divide resources between food, education, healthcare, assets, and other expenditures. It appears as though intervention households with stunted and underweight children prioritized reducing malnourishment in these children. The under three-year-old subgroup was most likely to experience reductions in the percentage of stunted or underweight children. While all 5 to 18 year olds had gains in height, it was the 5 to 8 year old subgroup that had the greatest gains. It is unclear however, whether the greater gain in these groups is because households prioritized feeding them, or because they had the greatest access to food. Future studies can help explain differences in outcomes among subgroups.

It should be noted that during this study, the SCTS had not yet been adopted as part of the national policy, the long-term sustainability of the SCTS was unclear, and recipients were not told how long they would remain as beneficiaries. Consequently, recipients made decisions with a high level of uncertainty about how long they would be SCTS beneficiaries. It is possible that as families remain on the SCTS for consecutive years, children will increasingly benefit once families improve their housing and purchase farming tools and livestock. Still after one year and considerable uncertainty around the SCTS, this study provides early evidence that Malawi's

SCTS is a tool within the National Social Protection Policy that fights poverty and perhaps the lifelong health impacts of poverty on children.

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Tables

Table 1. Intervention and comparison households

	Baseline			Endline		
	C	I	p-value ~	C	I	p-value ^
Total number of households in study N=818 / 767	410	407		393	373	
Number of households with children N=613 / 589	285	328		284	305	
Percentage of all households with children	70%	81%	.00	72%	82%	.00
Total number of children	819	1248		787	1058	
Average number of children per household	2.9	3.8	.06	2.8	3.5	.03
Household size	4.2	5.3	.00	4.4	5.2	.00

C = Comparison, I = Intervention
P value compares Intervention and Comparison groups at baseline (~) and endline (^)

Table 2. Characteristics of households with children

Household characteristics	C *n=285*	I *n=328*	p-value ~	C *N=281*	I *n=304*	p-value ^
Household head						
Level of education of HH						
No schooling	63.6	44.4	.00	61.8	47.5	.00
Some primary schooling	35.4	53.6		37.7	49.7	
Some secondary schooling	1.0	2.0		0.5	2.7	
Female headed	65.4	62.3	.49	66.8	63.3	.31
Household characteristics						
Annual food expenditures per capita	1343	1279	.74	1446	10565	.00
Assets Owned						
Hoe	90.5	89.0	.54	83.3	96.7	.00
Axe	26.3	32.3	.10	17.1	53.0	.00
Sickle	14.7	25.9	.00	17.1	56.6	.00
Chickens	11.6	13.4	.49	11.0	76.0	.00
Goats	1.8	1.2	.58	1.1	58.2	.00

C = Comparison, I = Intervention
P value compares Intervention and Comparison groups at baseline (~) and endline (^)

Table 3. All children at Baseline (n=1,582)

Basic demographics	C n=673	I n=909	p-value~
Gender (boy)	52.9	49.6	.19
Age			
0-36 months	10.1	8.3	
37-59 months	9.2	8.0	
5-9 years	17.7	20.7	
9-11 years	22.1	21.1	
12-15 years	30.9	31.1	
16-18 years	10.0	10.7	.46

C = Comparison, I = Intervention
P value compares Intervention and Comparison children at baseline (~)

Table 4. Percentage of children stunted, wasted, and underweight by age

	Baseline March 2007			Endline April 2008		
Indicator by age of child	C %	I %	p-value ~	C %	I %	p-value^
Stunting (height for age z score <-2)						
0-36 months n=118	45.5	49.2	.68	56.4	49.2	.44
37-59 months n=71	60.0	55.6	.70	48.6	44.4	.73
All under- fives n=189	51.1	51.5	.96	53.3	47.5	.42
Wasting (weight for length / height z score <-2)						
0-36 months n=120	10.5	4.8	.23	1.8	3.2	.62
37-59 months n=67	0.0	6.1	.15	2.9	6.1	.54
All under-fives n=187	6.6	5.2	.68	2.2	4.2	.44
Underweight (weight for age z score <-2)						
0-36 months n=129	36.5	30.3	.45	27.0	10.6	.02
37-59 months n=75	31.4	27.5	.71	20.0	20.0	1.0
All under-fives n=204	34.7	29.3	.40	24.5	14.2	.06
Underweight (BMI *z score <-2*)						
5-8 n=252	2.0	5.8	.15	0	2.0	.16
9-11 n=291	3.9	6.8	.28	4.7	4.9	.91
12-15 n=418	10.9	16.2	.11	11.4	11.5	.97
16-18 n=119	16.3	14.3	.76	6.1	8.6	.62
All 5-18 year olds n=1080	7.6	11.0	.06	6.5	7.1	.71

C = Comparison, I = Intervention
P value compares Intervention and Comparison children at baseline (~) and endline (^)

Table 5. Difference in differences impact estimates for anthropometry among under five year olds

Indicator by age of child	Time of data collection	C %	I %	Difference in differences (percentage points)	p-value
Stunting (height for age z score <-2)					
0-36 months	*Baseline*	52%	51%		
n=134	*Endline*	59%	48%	-12.0	0.33
37-59 months	*Baseline*	60%	58%		
n=75	*Endline*	49%	43%	-3.6	0.82
All under fives	*Baseline*	55%	55%		
n=209	*Endline*	55%	46%	-9.1	0.34
Wasting (weight for length / height z score <-2)					
0-36 months	*Baseline*	21%	15%		
n=140	*Endline*	9%	7%	3.4	0.66
37-59 months	*Baseline*	0%	18%		
n=73	*Endline*	3%	8%	-13.2	0.12
All under fives	*Baseline*	14%	16%		
n=213	*Endline*	7%	7%	-2.1	0.72
Underweight (weight for age z score <-2)					
0-36 months	*Baseline*	38%	36%		
n=139	*Endline*	29%	14%	-13.2	0.21
37-59 months	*Baseline*	31%	29%		
n=77	*Endline*	20%	21%	4.2	0.76
All under fives	*Baseline*	36%	33%		
n=216	*Endline*	27%	17%	-6.9	0.42

C = Comparison, I = Intervention

Table 6. Average gain in height in centimeters for 5-18 year olds

Age of child	C	I	Difference between groups in centimeters	p-value
5-8 years n=251	5.9	6.4	0.5	.02
9-11 years n=273	5.3	5.4	0.1	.68
12-15 years n=396	5.2	5.5	0.3	.14
16-18 years n=109	2.9	3.6	0.7	.12
All children 5-18 years old n=1029	5.1	5.5	0.5	.01

C = Comparison, I = Intervention

Table 7. Percentage of children with acute illnesses in the past 30 days

	Baseline March 2007			Endline April 2008		
Age of child	C %	I %	p-value	C %	I %	p-value
0-36 months n=148	75.4	76.0	.93	60.9	62.0	.88
37-59 months n=140	62.5	69.7	.37	62.5	57.9	.58
5-8 years n=306	68.6	65.4	.56	60.2	43.1	.00
9-11 years n=350	64.9	63.2	.73	50.3	41.5	.10
12-15 years n=499	67.9	65.5	.57	50.0	36.2	.00
16-18 years n=177	61.6	57.7	.60	45.2	28.9	.03
All children n=1620	67.0	65.4	.50	53.5	41.9	.00

C = Comparison, I = Intervention

Table 8. Difference in Differences impact on acute illnesses in the past 30 days

		Difference in differences			
Age of child	Time of data collection	C %	I %	Difference in differences (percentage points)	p-value
0-36 months	*Baseline*	75%	76%	0.5	.96
n=148	*Endline*	61%	62%		
37-59 months	*Baseline*	63%	70%	-11.6	.31
n=140	*Endline*	63%	58%		
5-8 years	*Baseline*	69%	65%	-13.9	.08
n=306	*Endline*	60%	43%		
9-11 years	*Baseline*	65%	63%	-7.1	.34
n=350	*Endline*	50%	41%		
12-15 years	*Baseline*	68%	66%	-11.3	.07
n=499	*Endline*	50%	36%		
16-18 years	*Baseline*	62%	58%	-10.4	.24
n=177	*Endline*	45%	29%		
All children	*Baseline*	67%	65%	-10	.00
n=1620	*Endline*	54%	42%		

C = Comparison, I = Intervention