

# **From Cash Transfers to Health Outcomes: Assessing the Significance of Female-focussed Impact Pathways on Programme Success in the Latin American Context**

**Sarah Lane  
Jolene Skordis-Worrall**

EGHD Working Paper No 2

April 2014

Economics for Global Health and Development Research Group  
Institute for Global Health, UCL,  
30 Guildford Street, London WC1N 1EH

From Cash Transfers to Health Outcomes: Assessing the Significance of Female-focussed Impact Pathways on Programme Success in the Latin American Context

Sarah Lane, Jolene Skordis-Worrall

First published by Economics for Global Health and Development Research Group

© Economics for Global Health and Development Research Group 2014

All rights reserved. Reproduction, copy, transmission, or translation of any part of this publication may be made only under the following conditions:

- with the prior permission of the publisher;
- under the terms set out below.

This publication is copyright, but may be reproduced by any method without fee for teaching or non-profit purposes, but not for resale. Formal permission is required for all such uses, but normally will be granted immediately. For copying in any other circumstances, or for re-use in other publications, or for translation or adaptation, prior written permission must be obtained from the publisher and a fee may be payable.

Available from:

Economics for Global Health and Development (EGHD) Research Group  
Institute for Global Health  
University College London  
30 Guildford Street, London WC1N 1EH  
Tel: +44 (0)20 7905 2299  
Web: [www.ighe.org](http://www.ighe.org)

Citation suggestion:

Lane, S. & Skordis-Worrall, J. (2014). From Cash Transfers to Health Outcomes: Assessing the Significance of Female-focussed Impact Pathways on Programme Success in the Latin American Context. *EGHD Working Paper No 2*, available at <<http://www.ighe.org/papers/>>

## **Abstract**

Conditional cash transfer programmes (CCTPs) are increasingly being used worldwide as an effective poverty alleviation strategy (Lomeli 2008). By incentivising the uptake of health and nutrition services, they also aim to instigate fundamental behaviour change in order to create healthier societies (Ranganathan & Lagarde 2011).

With current evidence proving inconclusive as to the impact of CCTPs on health outcomes, there is growing interest in the evaluation of hypothesised pathways of impact as researchers attempt to isolate factors that contribute to or detract from programme success.

This review aims to assess the extent to which female-focussed impact pathways influence the achievement of positive health outcomes through CCTPs in Latin America. Evidence suggests that, in addition to independent effects on health outcomes and health care quality, pathways focussing on the education and empowerment of women have crucial interactions with other programme inputs. Not only do they appear to enhance the impact of other pathways, rendering them more effective, they also mediate potentially negative programme effects on health.

Attention must be given to ways in which these pathways can be developed without placing an undue burden on women. Programmes should also attempt to engage men in health education for greatest impact.

## **Keywords**

Latin America; conditional cash transfer; poverty; female education; empowerment

## **Acknowledgements**

This research was conducted as part of an MSc in Global Health and Development at University College London.

## **The Author(s)**

Sarah Lane is a healthcare professional with an interest in poverty and health equity, the economics of healthcare, and health systems research and evaluation. Jolene Skordis-Worrall is a lecturer at the UCL Institute for Global Health with research interests in the Economics of HIV/AIDS, Tuberculosis and maternal care, including treatment seeking behaviour, the financial burden of service use and the economic evaluation of complex interventions to improve health outcomes.

The views expressed are those of the author(s). They are not necessarily those of, or endorsed by, the EGHD, IGH, University College London or funders.

<b><u>Contents</u></b>	
<b>List of figures and tables</b>	5
<b>List of abbreviations</b>	6
<b><u>Chapter 1 Introduction</u></b>	7
1.1 Background and rationale	7
1.2 CCTPs and health	9
1.3 Search methodology	12
<b><u>Chapter 2 Programme design and characteristics</u></b>	15
2.1 Targeting and conditionalities	15
2.2 Female involvement	16
2.3 Programme evaluation	16
<b><u>Chapter 3 Evaluative framework</u></b>	19
3.1 Programme theory	19
3.2 CCTP impact pathways framework	20
<b><u>Chapter 4 Trends in health outcomes</u></b>	25
<b><u>Chapter 5 Pathway-specific evidence on health outcomes</u></b>	28
5.1 Health service utilisation pathway	28
5.2 Income and food security pathway	32
5.3 Women's knowledge and empowerment pathway	37
<b><u>Chapter 6 Discussion</u></b>	42
6.1 Barriers to effect	42
6.2 Limitations	45
<b><u>Chapter 7 Conclusion</u></b>	47
<b><u>References</u></b>	49
Appendix A Features of programmes included in review	63
Appendix B Studies included in review	65

## **List of figures and tables**

<b>Fig 1</b>	<i>Conditional cash transfer programmes: 1997 and 2008 (Fiszbein &amp; Schady 2009, p4)</i>	57
<b>Fig 2</b>	<i>Impact theory hypotheses (Rossi, Lipsey &amp; Freeman 2004, p105)</i>	58
<b>Fig 3</b>	<i>CCT programme effect model (Glassman, Todd &amp; Gaarder 2007, p10)</i>	59
<b>Fig 4</b>	<i>Impact pathways framework, adapted from Leroy, Ruel &amp; Verhofstadt (2009, p105)</i>	60
<b>Fig 5</b>	<i>Number of impact evaluations published per year in Latin America and the Caribbean (Johannsen, Tejerina &amp; Glassman 2009, p12)</i>	60
<b>Fig 6</b>	<i>Trends in rural municipality IMR by date Oportunidades became available in a municipality (Barham 2011, p78)</i>	61
<b>Table 1</b>	<i>Outcome measures of studies included in review</i>	62

## **List of abbreviations**

BFP Bolsa Familia Programa

BMI Body Mass Index

BP Blood Pressure

CCTPs Conditional Cash Transfer Programmes

CSR Comunidades Solidarias Rurales

FA Familias en Acción

Hb Haemoglobin

IADB Inter-American Development Bank

IFPRI International Food Policy Research Institute

PAL Programa de Apoyo Alimentario

PRAF Programa de Asignación Familiar

RPS Red de Protección Social

SRH Self-Reported Health

# 1. Introduction

## 1.1 Background and rationale

Over the past two decades, as the development agenda has gained momentum worldwide, governments have increasingly turned to innovative solutions to address social inequities and improve the lives of the poor (Fiszbein & Schady 2009). In Latin America, where the recent widening of inequalities has been particularly acute and the political climate favourable to strong social policy, conditional cash transfer programmes (CCTPs) have rapidly become established as a way in which to break the interminable cycle of poverty faced by much of the population (Shibuya 2008; Adato & Hoddinott 2010).

The dual purpose of CCTPs comprises that of a social safety net for the poor in the short term and the accumulation of human capital through the use of education and health services in the long term (Ranganathan & Lagarde 2011). With the intergenerational nature of poverty well documented, as well as the pivotal role played by early childhood development (Bird 2007; Irwin, Siddiqi & Hertzman 2007), CCTPs constitute a concerted attempt to interrupt the transmission of poverty by creating an environment that optimises future life chances and enables individuals to become active participants in the labour market.

Originating in Mexico in the late 1990s, CCTPs have since been adopted across the globe, with programmes in locations across Asia and Africa (Fig 1). Programmes have

traditionally incorporated strong evaluative elements in an attempt to establish a sound basis for their continued implementation and as such they have proven to be consistently successful in reducing the intensity of poverty, bringing households closer to the poverty threshold (Lomeli 2008). However, despite the wealth of literature that has accompanied the flourishing of CCTPs, evidence remains inconclusive as to the ability of programmes to impact positively on the health of beneficiaries. While programme effects have frequently been demonstrated on attendance levels at health centres, heterogeneous effects have been found on health outcomes both within and between programmes (Lagarde, Haines & Palmer 2009; Gaarder 2010; Lomeli 2008).

If CCTPs are indeed to be adopted globally on such a large scale, it is vital that the mechanisms linking programme inputs to the improved health of beneficiaries can be understood, enabling programme designers to avoid replication of unnecessary or detrimental processes and concentrate on those proven to be effective. While interest in this area is growing, comparisons between programmes from a process evaluation perspective remain uncommon. The purpose of this review is therefore to analyse the current literature on health outcomes from an impact pathways perspective (Leroy, Ruel & Verhofstadt 2009) in order to identify why similar interventions have had such varying levels of success and failure regarding health outcomes.

The review will focus specifically on aspects of CCTPs which place significant importance on the role of women. Across programmes, the transfer is directed almost exclusively towards women, who are expected in addition to participate in health



education sessions in order to comply with programme requirements (Fiszbein & Schady 2009; Ranganathan & Lagarde 2011). The review will consequently examine evidence on health outcomes through key pathways of impact, linking programme inputs to improved health and evaluating interactions between pathways, with the ultimate aim of assessing the relative importance of female-focussed impact pathways to overall programme success.

## **1.2 CCTPs and health**

### **Demand-side incentive and supply-side strengthening**

The rationale underpinning the transfer of money to increase the uptake of health services lies in the presumed existence of demand side barriers that prevent adequate use of facilities by the poor. The costs to the poor of accessing health services can often be prohibitively high. In addition to direct fees, indirect and opportunity costs exist which are of particular significance when women and children are involved in income-generating activities (Ranganathan & Lagarde 2011). CCTPs therefore rely on the notion that individuals display rational economic behaviour, altering their behaviour in the presence of financial incentives and relevant information (Adato, Roopnaraine & Becker 2011). Governments hope that by reducing the financial barriers to access and increasing knowledge about health practices, they will induce or increase demand for services that have positive externalities (Fiszbein & Schady 2009).

That said, where supply-side constraints impact on the quality and availability of services, demand-side interventions will be ineffective (Cueto 2009; Gaarder, Glassman & Todd 2010; Handa & Davis 2006). In such circumstances, increased demand will fail

to be converted into improved health outcomes as services lack the capacity to respond due to factors such as equipment and drug shortages and a lack of trained staff. Supply side interventions are therefore necessary to raise the quality and quantity of service provision before attempts are made to induce demand. Furthermore, in instances where supply side quality is low, the poor may choose not to access services which they know to be substandard. Where this is the case, an improvement in quality may lead directly to increased demand as the costs incurred for accessing services become more worthwhile (Cueto 2009).

### **Conditionality**

Following the logic behind demand side initiatives, the need for conditionality has been fiercely debated. CCTPs have been heavily criticised for implying that the poor will only make use of certain services when forced to do so (Forde, Bell & Marmot 2011; Adato & Hoddinott 2007). Furthermore the ethics of depriving people of vital resources if they fail to act in a way deemed appropriate by the programme provider is highly questionable, particularly as conditionalities have the potential to compound exclusion if other factors prevent families from complying with programme requirements (Ranganathan & Lagarde 2012). Forde, Bell & Marmot (2011) consequently argue that CCTPs focus too heavily on the transfer of resources at the expense of power, failing to engage and empower beneficiaries and create an environment of co-responsibility.

There are however strong counter-arguments that justify the imposition of conditionalities. Firstly, families are unlikely to factor into their decision-making process the positive externalities that may follow from their use of certain services. The

improved health of a population increases its productive capabilities, thereby enabling economic advancement of society as a whole (Fiszbein & Schady 2009). An individual on the other hand will only be concerned with the benefits and costs of service use to themselves and their families. Financial incentives correct this market failure by making behaviours that are beneficial to society, more worthwhile to the individual (Gaarder, Glassman & Todd 2010).

Similarly, individuals tend to value preventive healthcare less highly than curative care because its payoff is perceived to be more distant. Curative care is, however, much more expensive and incurs greater costs to service providers (Ranganathan & Lagarde 2012). The cash transfer therefore brings the benefits to individuals of seeking preventive care into the present.

In addition, conditional programme designs acknowledge that barriers to access are not only financial. The mandatory education sessions address a perceived gap in knowledge among poor populations, serving to reduce the information asymmetry that exists between care providers and the poor (Gaarder, Glassman & Todd 2010). By increasing beneficiaries' knowledge regarding the benefits of health services and the potential costs that accompany their lack of use, individuals can make more informed decisions. Conditionalities have also been credited with helping to address cultural barriers by making it acceptable for the poor to seek care where they may otherwise be excluded (Ranganathan & Lagarde 2012).

Perhaps most importantly, conditionalities are believed to significantly increase the political acceptability of the schemes (Hall 2008; Handa & Davis 2006). Conditional

transfers are attractive because compliance with the conditions encourages the perception that the poor are earning the investment in them, rather than being passive recipients of hand-outs. The quantifiable benefits expected as a result of conditionalities, such as increased immunisation levels and improved morbidity statistics, serve to further increase political support for the programmes, making them more sustainable in the long-term (Adato & Hoddinott 2010).

### **1.3 Search methodology**

While CCTPs operate across the globe, this review will focus solely on programmes implemented in Latin America. The purpose of this is threefold. Firstly, programmes in Latin America have been much more rigorously evaluated than those elsewhere, therefore the breadth of available evidence is much greater and allows for more robust conclusions to be drawn. Secondly, Latin American programmes predominantly follow the traditional multi-faceted design of CCTPs, each having a range of intended outcomes across health and education. Programmes elsewhere often focus more singularly on individual aspects of health such as sexual health and birth practices (Ranganathan & Lagarde 2011). A focus on Latin America therefore enables a more meaningful comparison to be made between programmes with similar goals. Thirdly, the geographical proximity of the programmes leads to an evaluation of processes and results across similar national contexts, where both cultural norms and political and economic circumstances are generally comparable.

The literature search was conducted using the following databases: PubMed; Scopus; JSTOR; Cochrane; Eldis and Web of Knowledge, using 'conditional cash transfer' with

'health', 'nutrition' and/or 'Latin American' as the search terms in order to identify relevant papers. The websites of the International Food Policy Research Institute (IFPRI), World Bank and Inter-American Development Bank (IADB) were also searched for grey literature, in addition to hand searching of references from key papers. Exclusion criteria comprised: articles not available in English, articles published prior to 1998, articles addressing unconditional transfer programmes or programmes outside of Latin America, and articles not addressing at least one health or nutrition outcome.

Although other CCTPs exist across the region, the resulting review is limited to seven programmes due to the availability of appropriate evidence. These are:

- Mexico's *Oportunidades* (originally *PROGRESA*) & *Programa de Apoyo Alimentario (PAL)*
- Brazil's *Bolsa Familia Programa (BFP)*
- Nicaragua's *Red de Protección Social (RPS)*
- Honduras' *Programa de Asignación Familiar (PRAF)*
- Columbia's *Familias en Acción (FA)*
- El Salvador's *Comunidades Solidarias Rurales (CSR)* (formerly *Red Solidaria*)

Despite initially being designed as a conditional programme, Ecuador's *Bono de Desarrollo Humano* is excluded as no attempts were made to verify the required behaviours once the programme had begun (Fernald & Hidrobo 2011).

The rest of the review will proceed as follows. **Chapter 2** will briefly identify programme features relevant to the research question, including ways in which programme design has enabled rigorous evaluation to be conducted. **Chapter 3** will then outline a framework for analysis, identifying channels through which programme impacts on health are expected to occur, with **Chapter 4** providing a brief summary of the general trends in health outcomes found to date. **Chapter 5** will subsequently present an analysis of the full body of evidence, investigating the effect of each identified pathway on health outcomes and assessing the ways in which female-focussed pathways interact with others to lead to changes in health outcomes. A discussion will follow in **Chapter 6** regarding barriers to the effect of CCTPs and the limitations of the review itself, with the final chapter outlining the conclusions that can be drawn from this analysis and the implications for future programmes.

## 2. Programme design and characteristics

Before considering programme impacts on health, it is important to understand the defining characteristics of the programmes included in the review. The original and often considered 'gold standard' CCTP is that of Mexico's *PROGRESA*, later renamed and referred to in this review as *Oportunidades*. This programme was established by the Mexican government in 1997, with subsequent programmes emerging elsewhere over the following decade (Ranganathan & Lagarde 2012). Brazil's *Bolsa Familia* constitutes the largest of them, covering approximately 11 million families (Paes-Sousa, Santos & Miazaki 2011), while the only programme no longer in existence is Nicaragua's *RPS*, which ended at the conclusion of its pilot phase (Fiszbein & Schady 2009).

### 2.1 Targeting and conditionalities

Specific targeting strategies vary between programmes according to their size and intended coverage. Most however use an initial form of geographic targeting to identify disadvantaged regions, before identifying households within those communities using relevant indicators of poverty (Fiszbein & Schady 2009).

Conditionalities in all programmes encompass the attendance of children and pregnant or lactating women at preventive health care appointments, in addition to school attendance of approximately 85% for children at varying grade levels. *Oportunidades* is the only programme to necessitate health service involvement by all members of a household, with most programmes focussing on children and mothers (Rivera et al 2004). The size of the transfer received if conditions are met varies significantly

between programmes (see Appendix A), however *Oportunidades* provides the largest average transfer, representing an additional 20-30% of household income (Rivera et al 2004).

## **2.2 Female involvement**

Common to all programmes is the universal transfer of money to the female head-of-household. This design feature originates from the belief that women are more likely to direct resources towards improvements in household wellbeing in line with their traditional role as carers (Gaarder, Glassman & Todd 2010). Directing transfers in this way is therefore an intentional step towards increasing the potential impact of the income provided through the programme.

In addition, women are expected to attend mandatory health education sessions in all programmes with the exception of *PRAF* in Honduras (Ranganathan & Lagarde 2012). The sessions are predominantly aimed at mothers and cover a range of subjects, with specific content varying by programme. Nicaragua's *RPS* extends the notion of female engagement by creating teams of *Promotoras*, local women whose responsibility it is to encourage compliance with conditionalities and promote the aims of the programme (Bradshaw & Viquez 2008).

## **2.3 Programme evaluation**

Regarding evaluation, at the forefront of the original programme design in Mexico was the need for detailed assessment of outcomes to provide evidence of effectiveness. Due to its size and coverage, *Oportunidades* needed to be rolled out over a period of



time. The Mexican government therefore took advantage of this to create a cluster randomised design, with treatment areas receiving benefits in 1998 and control areas becoming enrolled into the programme eighteen months later. Much effort was put into the randomisation of these groups to remove potential sources of bias and regular surveys were conducted to gather data (Berhman & Todd 1999).

The same need for transparency existed in programmes supported largely by international funds. *RPS* and *PRAF* therefore follow similar experimental designs enabling rigorous follow-up. All three programmes randomised at the community rather than household level for logistical reasons, making it easier to match groups on observable characteristics and indeed to implement the initiatives, avoiding spillover effects between groups (Barham & Maluccio 2009).

Where programmes do not use experimental designs in their planning, matching techniques are commonly used for evaluation. Studies of *Familias en Acción* in Columbia use a cluster matched design made possible by using towns without a bank, a criteria of inclusion into the programme, as control towns (Attanasio et al 2005). Similarly in Brazil, administrative errors which led to the accidental exclusion of potential beneficiaries from the programme inadvertently created a control group for follow-up studies (Morris et al 2004a). Matching techniques allow for evaluation of programme effects using groups similar in characteristics to those receiving the intervention. Nevertheless the resulting evidence is more inherently biased than that of experimental studies as the groups are likely to differ in characteristics that may impact on study outcomes (Rothman & Greenland 1998). In Columbia for example, towns without a bank are likely to be more isolated than those included in the programme (Attanasio et

al 2005). The varying strength of the data must therefore be taken into account when making comparisons between programmes.

To limit further sources of bias, intention to treat analysis is used in nearly all evaluations to avoid bias due to non-compliance or non-participation (Fernald, Gertler & Hou 2008; Barber & Gertler 2008). As such, anyone within the treatment area who is eligible for programme benefits is considered to be a beneficiary, regardless of actual treatment status.

The range of outcomes evaluated in the studies included in this review are listed in Table 1. Due to differences in programme design and outcome measures, no evaluations have compared data directly between programmes. Existing synthesis papers instead compare overall findings rather than providing a meta-analysis of data and this review follows suit, using the impact pathways framework outlined in the following chapter as a basis for analysis.

### **3. Evaluative framework**

CCTPs are inherently challenging to analyse due to their multidimensionality (Gaarder 2010). Programme structures comprising multiple inputs – conditions, cash transfers, and education sessions, make the separation of cause and effect problematic, particularly where evaluations fail to isolate the various ways in which each input operates. While this review aims to analyse the impact of CCTPs on health, the relationship between the intervention and the health outcomes examined is complex, often operating indirectly through multiple channels (Gaarder, Glassman & Todd 2010).

#### **3.1 Programme theory**

In order to address this, programme theory is increasingly being used in literature investigating the impacts of CCTPs. The theory is designed to establish concrete pathways through which a programme is understood to operate and is described as “the set of assumptions about the manner in which the programme relates to the social benefits it is expected to produce” (Rossi, Lipsey & Freeman 2004, p78).

A conceptual framework created by Sidani & Sechrest (1999) likens this to an input-process-output model. Programme theory is therefore a theory of cause-and-effect whereby programme actions and goals are linked through proximal outcomes to distal outcomes, the latter forming the ultimate programme goal. While programme theory also encompasses the operational requirements necessary to deliver the intervention, this review will reflect the approach of Leroy, Ruel & Verhofstadt (2009) who focus on impact theory in their evaluation of child nutritional outcomes relating to CCTPs.

Impact theory addresses the fundamental beliefs underpinning CCTPs and their interaction with desired programme outcomes. These beliefs can be categorised into two hypotheses (Rossi, Lipsey & Freeman 2004). The action hypothesis refers to the assumption that program inputs will produce specific targeted effects. The conceptual hypothesis then relates to the ensuing link between these immediate effects and the ultimate program goals (Fig 2). As such the ultimate goals are in effect beyond control of the programme as it can only be assumed that in achieving proximal outcomes, distal outcomes will follow (Rossi, Lipsey & Freeman 2004).

In the case of CCTPs, further complexity is added due to the nature of the ultimate programme goal. Instead of constituting specific health outcomes, the ultimate outcome of CCTPs, secondary to poverty reduction, is rather the generic goal of human capital accumulation, with improved health of beneficiaries considered as a single aspect of this. For the purposes of this review, improved health will be considered as the most distal outcome.

## **3.2 CCTP impact pathways framework**

To establish an impact pathways framework for the association of CCTPs with improved health outcomes, I have adapted the comprehensive framework created by Leroy, Ruel & Verhofstadt (2009), using the programme effect model created by Glassman, Gaarder & Todd (2007) to further inform the framework. The programme effect model (Fig 3) maps the impact of CCTPs via assumptions implicit in their design. While providing a schematic overview of the theory underpinning CCTPs, this model does not explicitly identify causal pathways linking programme inputs to improved health. Leroy, Ruel &

Verhofstadt (2009) instead outline pathways linking each programme component with the ultimate outcome of child nutrition.

In the adapted framework used in this review, child nutrition indicators are considered to be one of multiple measures of the ultimate outcome of improved health. Using such a broad term as an outcome is problematic due its differing connotations depending on the context, design and aims of each programme. However the nature of the programmes reviewed means that health effects can be expected across a variety of outcomes. It is therefore necessary for the ultimate outcome to reflect this. Glassman, Todd & Gaarder (2007) acknowledge that the outcomes measured in impact evaluations are only those presumed to be affected by CCTPs (Assumption ix, Fig 3). When drawing conclusions from the available evidence it must be considered that CCTPs may have significant impacts on outcomes not yet studied.

Fig 4 shows the adapted framework underpinning this review. While simple programme theory leads linearly from programme action to proximal then distal outcome, interactions follow a far more complex structure in reality. Regarding CCTPs and health, proximal outcomes include health service utilisation, increased household income and improved knowledge of health practices; however several layers of intermediate outcomes exist along the pathways linking these proximal outcomes to improved health. Three specific pathways can be identified from this framework for analysis.

### **Health utilisation pathway**

First and foremost Leroy, Ruel & Verhofstadt (2009) identify the health service utilisation pathway. Through this pathway, increased demand is induced both directly through the

conditions attached to the transfer and indirectly by removing financial barriers to access through the transfer itself. The conceptual hypothesis follows that where individuals make more frequent use of health services, their health will improve (Assumption viii, Fig 3).

An assumption is made that the existence and monitoring of conditionalities are necessary for demand to increase to an acceptable level (Assumptions iii & iv, Fig 3); a point with immense significance for overall programme costs, which greatly increase when effective monitoring strategies are needed (Glassman, Todd & Gaarder 2007). As identified in Chapter 1, the potential level of impact possible through this pathway will be highly dependent on the quality of the supply-side and its ability to cope with increased demand (Assumption vii, Fig 3).

### **Income and food security pathway**

The second pathway focuses solely on the cash transfer. In addition to removing financial barriers to access, the transfer is expected to improve health by enhancing the purchasing power of households (Leroy, Ruel & Verhofstadt 2009). With households able to afford higher quantities of better quality food, the subsequent improvement in nutritional status should have demonstrable effects on health outcomes.

Noticeably no conditions are attached to the use of transfers on food, or indeed to any specific nutritional goals; this outcome is intended to be a natural consequence of greater financial security (Glassman, Todd & Gaarder 2007). This pathway is complemented in three of the evaluated programmes by nutritional supplementation, where fortified foods are distributed for consumption by children and pregnant women.

## **Women's knowledge and empowerment pathway**

Finally two pathways identified in the original framework combine to create a third, dual pathway which forms the focus of this review. The transfer of money specifically to women constitutes the women's empowerment pathway, increasing their control of household resources and as such their decision-making power (Leroy, Ruel & Verhofstadt 2009). Glassman, Todd & Gaarder (2007) point out the implicit assumption that the recipient of the transfer is indeed in control of how it is spent.

The women's knowledge pathway meanwhile utilises the health education talks to capitalise on their empowerment by equipping them with the knowledge to make health-promoting decisions in the household. By addressing the perceived lack of knowledge possessed by poor women (Assumption ii, Fig 3), basic household sanitation is expected to improve alongside allocation of resources to the benefit of children and alterations in household food preferences (Gaarder, Glassman & Todd 2010).

Leroy, Ruel & Verhofstadt (2009) describe a further pathway in their analysis relating to women's time. Yet rather than being considered as a pathway in itself, this is more accurately viewed as a factor influencing existing pathways, potentially reducing their effects if time constraints prevent women from collecting transfers or complying with programme conditions.

Lastly the pathway encompassing the long term benefits expected from improvements in girls' education will not be addressed in this analysis, as any programme impacts through this pathway would not be seen during the course of current evaluations (Leroy, Ruel & Verhofstadt 2009).

Before using this framework to analyse pathway-specific evidence with a view to comparing the relative effect of each, it is useful firstly to establish a general overview of the evidence on health outcomes to date in order to provide a context for further analysis.



## 4. Trends in health outcomes

With the body of evidence growing steadily over the past decade (Fig 5), specific trends in the data analysing associations between CCTPs in Latin America and the health outcomes of beneficiaries have begun to emerge.

The overwhelming weight of evidence gathered on the impact of CCTPs on health outcomes originates from Mexico. Here the political force behind *Oportunidades* has resulted in extensive evaluations spanning more than a decade and encompassing a broad range of health-related outcomes.

Positive effects are seen in studies measuring child morbidity and mortality in both Mexico and Columbia. Barham (2011) provides robust evidence of a positive impact of *Oportunidades* on infant mortality rates (IMR), with Fig 6 demonstrating increases in the rate of reduction of IMR following the introduction of the programme. The lag in the first phase is understood to be due to initial benefits only being received late in the year (Barham 2011). Evidence has also been found of a reduction in levels of diarrhoeal disease in poor rural households in Columbia (Attanassio et al 2005) and Mexico (Huerta 2006), with Gertler (2004) finding reduced rates of anaemia and mothers' self-reported illness for children exposed to *Oportunidades*.

Positive results are also reported for child growth and nutrition indicators, where impacts have been found consistently on the height-for-age of beneficiary children compared with controls (Gertler 2004; Rivera et al 2004; Leroy et al 2008). Higher birth weights have also been found in beneficiary infants (Barber & Gertler 2008). Where significant impacts are not population-wide, they tend to be concentrated among the poorest and youngest (Rivera et al 2004; Leroy et al 2008). Similar impacts on growth were found in Nicaragua, where the prevalence of stunting and underweight in beneficiary children was found to be reduced by 5.3 and 6 percentage points respectively (Maluccio & Flores 2004).

In addition to growth indicators, psychosocial outcomes have been investigated in the Mexican context, where Fernald & Gunnar (2009) found lower salivary cortisol levels in children from beneficiary families. This data potentially demonstrates the effects of reduced parental anxiety in a more financially stable environment. The authors do however acknowledge the challenges of measuring and drawing conclusions from such a sensitive indicator, notably in situations where chronic stress may cause a blunted response (Fernald & Gunnar 2009). Nevertheless a further study looking at behavioural difficulties as an indicator of psychological wellbeing identified a significant reduction in aggressive behaviour among children in participating families (Ozer et al 2009). This provides further evidence that improvements in household circumstances engendered by programme participation can have marked impacts on the wellbeing of family members.

In Brazil however the evidence is significantly weaker. Morris et al (2004b) found a negative effect of programme participation on growth of children at 12 months of age.

The authors attribute this to a misconstrued incentive effect whereby families believed programme eligibility to be dependent on having a malnourished child. Results on other health outcomes have nevertheless failed to match the positive results found elsewhere. Early evaluations reported a lack of impact on multiple indicators, including nutrition and immunisation coverage (Soares, Ribas & Osorio 2012; Paes-Sousa, Santos & Miazaki 2011) and tended to be weak in design, often being cross-sectional studies (de Lima, Rabito & Gomes Dias 2005; de Bem Lignani et al). Furthermore while a newly published paper correlates recent reductions in child mortality in Brazil to the effect of the *BFP* (Rasella et al 2013), it fails to convincingly prove a strong causal association, acknowledging multiple additional factors that are likely to have contributed to the observed improvements in mortality.

Research into adult health outcomes also produces mixed results across programmes. While a study in rural Mexico found beneficiary adults to have a lower prevalence of obesity and hypertension, alongside better self-reported health (Fernald, Hou & Gertler 2008), Forde et al (2012) report an association between programme participation in Columbia and increased risk of obesity.

While general trends are therefore indicative of positive impacts linked to programme participation, these are by no means universal. Results from Mexico tend to compare favourably to those from other countries, with the *Bolsa Familia* in Brazil providing notably little evidence of a positive impact despite being the largest programme. Evidence on child health outcomes also appear to be more consistent than that found for adults.

## **5. Pathway-specific evidence on health outcomes**

To shed light on the factors influencing trends in health outcomes resulting from CCTPs, attempts must be made to delineate the underlying processes that are responsible for them. Utilising the framework introduced in Chapter 3, an analysis is now presented of evidence linking health outcomes to the three main pathways of impact in an attempt to ascertain the significance of each.

### **5.1 Health service utilisation pathway**

To establish levels of programme impact via the health service utilisation pathway, evidence is ideally required that encompasses enrolment and attendance alongside health outcomes that could reasonably be expected to improve as individuals have increased contact with the health system (Gaarder, Glassman & Todd 2010).

#### **Attendance**

Several studies demonstrate positive effects on health service utilisation associated with participation in CCTPs. Similar impact estimates are found across a number of programmes, with an 18% increase in attendance at growth and development check-ups associated with *Oportunidades* (Gertler & Boyce 2001), a 17.5% increase in Nicaragua (Maluccio & Flores 2004) and 15-21% increases the use of antenatal care and well-child check-ups in Honduras (Morris et al 2004a). In Columbia, compliance with growth and development checks was also found to have greatly increased following

programme participation, particularly for children below the age of one (Attanasio et al 2005).

The data from Honduras is somewhat weakened due to its reliance on mothers' reporting, however 10-day check-ups remained below expected levels. Suggestions that this was not believed to be a condition of the programme provide tentative proof that conditioning had the desired effect, inducing demand where it was believed to be in operation (Morris et al 2004a).

Nevertheless this was not the case in all contexts. A study concentrating on birth care in El Salvador presents a mixed picture, with large increases in skilled attendance at birth and births in health facilities among beneficiaries, neither of which were required, but no changes in pre or post natal care despite them forming part of the programme conditions (de Brauw & Peterman 2011). The authors suggest that education and supply side factors were more influential than conditionalities in this setting.

The need for a demand-side incentive in Nicaragua is called into question by Bradshaw & Viquez (2008), who highlight an increase in the utilisation of services that continued beyond the programme's duration. As hypothesised in Chapter 1, they suggest that incentives for providers that resulted in improvements in the quality and availability health services may have been sufficient to achieve the required levels of service use. Indeed Cueto (2009) emphasises that - even in the absence of a demand side initiative - behaviour change is likely as service quality improves. This therefore gives further weight to the argument that CCTPs are only a feasible intervention where supply side constraints do not impact on demand for services.

## **Health outcomes**

Due to the complex relationship between demand- and supply-side factors addressed in the introduction, positive programme effects on attendance do not guarantee improvements in health outcomes. As identified earlier, the quality of the supply side significantly mediates any impact along this pathway. While attendance figures provide evidence that CCTPs lead to increased utilisation of services, evidence on health outcomes is needed to prove a link between increased service utilisation and improved health. Such evidence to date is rare, as studies tend to focus on utilisation statistics without linking these to distal health outcomes. One area that does provide evidence of a direct link between service utilisation and health outcomes however is vaccination coverage.

In Columbia, Honduras and Nicaragua, positive effects were found on coverage rates, particularly with the DPT vaccine (Barham & Maluccio 2009; Attanasio et al 2005; Morris et al 2004a). In Nicaragua, concurrent improvements in the control group reduced the significance of the results, however the absence of concurrent improvements elsewhere in the country suggests a strong programme effect that spilled over to nearby areas (Barham & Maluccio 2009; Maluccio & Flores 2004).

Two further points of note emerge from the Nicaraguan data. Particularly strong effects were found on children living further from a health facility, as well as those whose mothers were less educated. Firstly this confirms the effectiveness of the programme in reaching individuals in the most isolated areas. Additionally it implies that higher vaccination coverage may be attributable not only to the demand induced by the conditions and transfer but also in part to the education component of the programme.

The education sessions may therefore enhance the effectiveness of this pathway as women learn about the importance of the vaccine for the long-term health of their children (Barham & Maluccio 2009).

In contrast to these findings, the *BFP* was not found to affect rates of vaccination coverage in Brazil. While acknowledging high rates of pre-programme coverage, Andrade et al (2012) suggest that the lack of monitoring of conditionalities that characterised the programme may be responsible for this. Other papers reporting a lack of programme effectiveness with regards to health outcomes in Brazil point to similar failures at both stages of the health utilisation pathway. Hall (2008) confirms the lack of rigour regarding the monitoring of conditionalities in the *BFP*, reporting only 42% adherence to health conditionalities despite low levels of refused transfers.

The *BFP* therefore fails to induce the demand expected in response to the programme, with evidence suggesting that a widespread absence of monitoring is at fault (Hall 2008; Andrade et al 2012; Soares, Ribas & Osorio 2010). Where beneficiaries do make use of health services, Soares, Ribas & Osorio (2010) cite the country's lack of basic health infrastructure as a further factor preventing an impact on health outcomes.

The combination of an ineffective monitoring system alongside poor quality services therefore results in a muted impact on health, attributed both to a failure to induce the necessary demand for services, as well as an inability to capitalise on increases in demand due to supply-side failings.

## **5.2 Income & food security**

While it is evident from the previous section that multiple factors influence the action of the health service utilisation pathway, the income and food security pathway acts through a much more basic premise. Section 3.2 details that impacts via this pathway are hypothesised to occur as families direct the increased resources received through the programme towards improvements in household diet quality. Indications of effect therefore come primarily from two sources: consumption data and growth and nutrition indicators.

### **Consumption**

Purchasing decisions and changes in household consumption are influenced not only by income but a range of other factors including household composition and seasonality (Hoddinott & Weissman 2008). Additionally, data on household consumption is inherently flawed as it fails to take into account consumption outside of the household environment and relies solely on recall. Two potential sources of bias are therefore introduced which may lead to inaccurate or incomplete data being obtained, either in error due to incorrect recall by participants, or due to the exclusion of out-of-household consumption data which may, in some cases, be significant (Hoddinott & Weissman 2008). Nevertheless, available studies give a reasonable indication of the way in which the income effect of CCTPs impacts on household diet in this setting.

A consistent picture of the relationship between programme participation and consumption is found across most programmes, demonstrating increased consumption of food items (Hoddinott & Weissman 2008; Attanasio & Mesnard 2006; Leroy et al



2010; de Bem Lignani 2010). While this is to be expected following an increase in household income, no specific conditions are attached to how the money from the programmes is spent. This evidence therefore provides reassurance that programme resources are being directed at least in part to the improved nutrition of family members.

Where disparities do exist between programmes is in the types of food purchased and their relevance for health. While several studies report increased consumption of fruit, vegetables and animal products in Columbia (Attanasio et al 2005; Attanasio & Mesnard 2006), Mexico and Nicaragua (Hoddinott & Weissman 2008), studies of other programmes report increases not in micronutrient consumption but rather in energy-dense foods. This is found in a study of Mexico's *PAL* (Leroy et al 2010) and is replicated in several studies from Brazil. De Bem Lignani et al (2010) find a specific income effect of *BFP* on consumption, with poorer families, more reliant on the income received through the programme, tending to make less healthy food choices. Soares, Ribas & Osorio (2010) reproduce these findings in a cross-sectional study, reporting negative attitudes towards more nutritious choices, with fruit and vegetables viewed by participants as non-essential.

What cannot be ascertained from studies focussing on consumption is the relationship between other programme variables and household purchasing decisions. A potential explanation for the differences in food choices between programmes may come from the approach of the programmes to nutrition education.

## **Growth and nutrition**

The other main indicator of the effect of income on health is found in growth and nutrition data. Common indicators of growth and nutrition for children include height- and weight-for-age, as well as Hb concentration, indicative of iron levels and anaemia (Leroy, Ruel & Verhofstadt 2009). For adults, BMI is the primary indicator of nutritional status. In the context of CCTPs, it is likely that the income and food security pathway will not be the only pathway leading to changes in nutrition indicators. For example increased attendance at growth check-ups, as well as information gained by mothers from health education sessions, are likely to influence the growth of children (Glassman, Todd & Gaarder 2007). However several studies attempt to isolate the specific cash effect of CCTPs on growth indicators.

Fernald, Gertler & Neufeld (2008) find that larger cumulative cash transfers are associated with improvements in a range of health outcomes including height for age, Hb concentration, decreased stunting and overweight and cognitive development. In a further study Fernald, Gertler & Neufeld (2009) also find the level of transfer received positively associated with height-for-age. The authors acknowledge that the nature of this study as a ten year follow-up however raises questions about influences beyond *Oportunidades* that are not captured by the models in the study but may have influenced these results. In addition, the study is criticised for failing to sufficiently emphasise the multiple factors that potentially influence the level of transfer received, therefore the results seen may reflect household characteristics and behaviours, not simply the programme effect (Attanasio, Meghir & Schady 2010).

In other studies, Maluccio & Flores (2004) attribute the reductions in stunting and underweight seen among beneficiary children in Nicaragua to improvements in the quantity and quality of home diet. Meanwhile an urban centre study from Mexico indicates the importance of early intervention, only finding statistically significant improvements in growth for children less than 6 months old at baseline (Leroy et al 2008). The authors cite the income effect on home diet alongside a reduced disease burden as the main drivers behind this effect, which sees a greater impact among the poorest.

In contrast to these results, a markedly different picture emerges with regards to adult nutrition indicators. Forde et al (2012) find increased weight gain and risk of obesity associated with programme participation in Columbia. Similarly cash and food security was found to be positively correlated with body mass index and obesity among the *Oportunidades* beneficiary population, with increased hypertension among women (Fernald, Gertler & Hou 2008).

When taken in the context of the consumption data, these results suggest that despite impacting positively on the linear growth of children, the potential exists for a negative pathway effect whereby increased income and food security results in the consumption of unhealthy foods. Rather than benefiting participants, this pathway therefore has a strong potential to negatively affect their health.

### **Nutritional supplements**

Where the income and food security pathway is hypothetically strengthened by the distribution of nutritional supplements, the weight of evidence suggests that the

supplements have limited, if any, effect on child health outcomes. In Mexico, Huerta (2006) was unable to attribute any of the reduction in diarrhoeal disease to supplement intake. Studies repeatedly found problems relating to availability of the supplement (Berham & Hoddinott 2005) and lack of usage (Rivera 2004; Leroy et al 2008; Adato, Roopnarine & Becker 2011). Indeed Rivera (2004) found only 57% of intended recipients taking the supplement more than 4 times a week. In Nicaragua, Maluccio & Flores (2004) found no programme impact on anaemia or levels of haemoglobin despite apparent success in distributing iron supplements. Bradshaw & Viquez (2008) found similar results, citing non-compliance as the primary causal factor.

The only convincing evidence of a direct effect of the supplement comes from a study by Berham & Hoddinott (2005), which initially appeared to show a negative association between programme participation and growth. They suggest that due to a shortage of supplements, available supplements were distributed to the more malnourished children. When this non-randomness is accounted for, a positive effect is found on growth which appears to be due to the supplement alone.

Therefore, while evidence exists to confirm positive impacts on child growth and development through increased food security, it appears that these effects may be mitigated in circumstances where beneficiaries lack appropriate knowledge about diet quality and the consequences of specific food choices for health. In light of this evidence, I will turn to the final pathway of women's knowledge and empowerment to assess its relevance to health outcomes, and in particular to examine evidence that suggests a mediating effect of education on the income and food security pathway.

### **5.3 Women's knowledge and empowerment**

Pathways operating through the education and empowerment of women have only recently been given more consideration in the literature, with earlier studies concentrating predominantly on utilisation and income effects. Even so, evidence increasingly points to the ways in which the aspects of CCTPs that relate to women's knowledge and empowerment can influence the achievement of positive health outcomes.

#### **The education effect**

Specific evidence of the effect of education on health comes firstly from the differences found in adult health outcomes mentioned in the previous chapter. It appears the inclusion of a strong health education component to a programme can offset the potentially negative income effect by encouraging healthier choices to be made with the additional resources (Avitabile 2011; Behrman & Parker 2013).

Avitabile (2011) isolated the effect of the education component of Mexico's *PAL*, finding evidence of a positive effect on women's waist circumference coinciding with attendance at education sessions. Fernald, Gertler & Hou (2008) also find that while the level of transfer is positively correlated with hypertension, longer programme participation has a negative association with it. The authors suggest that this indicates a differential effect of the cash and education aspects of *Oportunidades*, whereby increased knowledge gained through greater exposure to the health education sessions can mediate the effect of the increased income, turning a potentially negative effect into a positive one.

In a more recent study, Behrman & Parker (2013) examine the impact of *Oportunidades* on ageing. They find particularly significant effects on outcomes including hypertension and SRH amongst female beneficiaries and believe that observed gender differences are largely due to the engagement of women with the programme's educational activities. Furthermore Forde et al (2012) point to the exclusion of adult health and wellbeing issues from education sessions in Columbia's *CSR* as a likely factor contributing to the increasing obesity risk identified for female programme beneficiaries.

A further manifestation of this impact can be found where studies report stronger health effects in households in which the mother is less educated. Reflecting the findings discussed in Chapter 5.1 on vaccination coverage in Nicaragua (Barham & Maluccio 2009), Fernald, Gertler & Neufeld (2009) report that the treatment effects of *Oportunidades* on beneficiary children's height-for-age were more significant for households where mothers had no formal education. This suggests that CCTPs can indeed play an important role in addressing the knowledge gap existing in poorer, less educated households.

Nevertheless, qualitative evidence suggests that despite well-designed education components, cultural perceptions and beliefs strongly influence behaviour change. Adato, Roopnarine & Becker (2011) report significant resistance to the introduction of new foods and the nutritional supplements due to cultural factors not accounted for in programme design. The practice of food sharing embedded in Mexican culture was found to reduce the impact and effectiveness of the nutritional supplements, which were often found to be shared between members of a household. Meanwhile in Nicaragua supplements were frequently withheld from children because of their taste, the belief

that they were bad for the children's teeth and the fact that they caused children to have diarrhoea (Adato, Roopnarine & Becker 2011).

This evidence highlights the importance of understanding cultural norms and practices when planning an intervention and is demonstrative of the limited use of education where these factors are not addressed. Adato, Roopnarine & Becker (2011) suggest that certain characteristics of the education sessions also appear to play an important role in their effectiveness. These characteristics include the gender of the staff delivering talks on sensitive subjects, and the teaching methods used, with participatory methods serving to increase women's self-confidence.

In order to capitalise on the potential impact of educating beneficiaries, much thought must go into the planning and delivery of this component, tailoring sessions specifically to the needs of the target audience (Adato, Roopnarine & Becker 2011).

### **Quality of care**

In Mexico, where a comprehensive education programme exists, further research examining programme effects on antenatal care (ANC) provides convincing evidence that the women's knowledge and empowerment pathway contributes to improving the quality of care received by beneficiaries.

Sosa-Rubi et al (2011) describe evidence of a programme learning effect by which increased access to healthcare and relevant knowledge alters beneficiaries' perceptions of public providers. They suggest that the increased knowledge of good practices gained through programme activities is responsible for levels of ANC visits increasing above those required by the programme, with longer exposure to *Oportunidades*

predicting greater numbers of visits. A learning effect was also found relating to skilled delivery care for women in localities exposed to the programme for longer, regardless of treatment status. Therefore even where women were not directly involved in the CCTP, a spill-over effect occurred, with knowledge spreading throughout the local area. Both effects were found to be particularly strong amongst more educated, less disadvantaged women with negative associations existing for indigenous women, suggesting that cultural factors continue to limit the inclusion of certain population groups (Sosa-Rubi et al 2011).

In a further study investigating improvements in the quality of care, Barber & Gertler (2010) find evidence of increased birthweight of children born to *Oportunidades* beneficiaries compared with controls. They attribute this finding to increases in the quality of prenatal care received by these women and analyse possible explanations for this increased quality. After convincingly eliminating potential explanations, notably improvements on the supply side, they conclude that beneficiaries became “informed and active health consumers” (Barber & Gertler 2010, p68).

The education effect therefore acts not only by enabling women to make healthier choices within the household, but also by empowering them to demand higher levels of care for themselves and their families.

### **Limits to empowerment**

The apparent empowerment of women through increased programme participation is encouraging, although evidence relating it to health outcomes remains relatively scarce. In addition to the evidence above, women have reported greater independence and



respect from men following participation in *RPS* (Bradshaw & Viquez 2008), and increases in their decision-making power as a result of the *BFP* (de Brauw et al 2013).

Nevertheless concerns are raised as to the true impact of CCTPs on women. In the context of Nicaragua, Bradshaw & Viquez (2008) argue that women in fact bear the social and economic cost of the programme, assuming sole responsibility for child welfare as a result of the role placed on them by the programme design. They suggest that the conditionalities and expectations serve to remove both control and decision-making ability from women by instructing them as to how resources should be spent.

Molyneux (2008) echoes these concerns, questioning whether CCTPs are truly able to empower women when their design contains substantial gender bias and strengthens the notion of traditional gender roles. The lack of male involvement in the health aspect of CCTPs is further highlighted by Adato, Roopnarine & Becker (2011). Their qualitative research identifies the strong influence still held by men hold over the actions and decisions of female household members regarding health and wellbeing, in spite of which CCTPs do not attempt to engage men in any way. Instead men typically avoid health care involvement in the absence of a direct need for it (Adato, Roopnarine & Becker 2011).

A general consensus is therefore emerging that in order to achieve the true potential of CCTPs with regards to health, engagement of both men and women is necessary in a manner which promotes gender equality and shared responsibility (Adato, Roopnarine & Becker 2011; Molyneux 2008; Bradshaw & Viquez 2008).

## **6. Discussion**

It appears the women's knowledge and empowerment pathway contributes significantly to improvements in health outcomes associated with programme participation. Evidence of the effects of this pathway on health outcomes, independent of other programme inputs, are most explicit where quality of care is concerned, with pathway effects resulting in improvements in the quality of care received by beneficiaries.

Equally significant are the interactions of the women's knowledge and empowerment pathway with other aspects of CCTPs. The relationship between the income and food security pathway and the women's knowledge and empowerment pathway is such that each pathway enhances the effect of the other. The negative effects of the income and food security pathway, likely where appropriate education is absent, are potentially very damaging to the long term health of beneficiaries. Similarly, without an increase in income, it would be difficult for participants to put any increased knowledge regarding nutrition to use, as household diets would predominantly be restricted by financial constraints.

There are however multiple barriers to the effect of each pathway which must also be taken into account.

### **6.1 Barriers to effect**

Factors implicit in programme design appear to substantially influence the ability of CCTPs to positively impact on the health of beneficiaries, particularly through the health

utilisation pathway. As described in Section 5.1, the relative rigour of the monitoring strategies used in different programmes seems to directly affect levels of service use, with evidence from Brazil suggesting that an absence of monitoring led to a muted response to the programme, insufficiently increasing demand and leading to relatively small impacts on health outcomes.

Studies also provide further evidence of the dampening of the impact of CCTPs where supply-side quality is low. The importance of simultaneously implementing supply side improvements is highlighted by the cases of El Salvador and Brazil, and confirms the belief that programmes can only be expected to have a positive impact where the supply of health services matches the increased demand induced (de Brauw & Peterman 2011; Soares, Ribas & Osorio 2010).

This finding is particularly relevant in the context of low-income countries, where supply side quality is likely to be poor, and is pertinent as CCTPs increasingly become recognised as a potential tool in the response to the HIV/AIDS crisis and its complex relationship with poverty (Adato & Bassett 2009). Several authors subsequently question the relevance to low-income countries of research emanating from countries that have greater capacity to manage CCTPs (Rawlings & Rubio 2005; Molyneux 2008).

Several studies also provide evidence of perverse incentives whereby programme design inadvertently leads to undesirable outcomes. Both under- and overfeeding of children are found where beneficiaries believe these to relate to payment and programme conditions (Morris et al 2004b; Bradshaw & Viquez 2008). Every effort must

be taken to exclude any such incentives from the design of CCTPs as they considerably undermine programme goals.

Cultural barriers further mediate the effectiveness of CCTPs where social norms, values and beliefs directly conflict with programme aims or methods. The overall failure of nutritional supplements to have any truly measurable impacts on health can be attributed in part to the contradiction between their intended use and local beliefs and practices (Adato, Roopnarine & Becker 2011). Similarly the impact of education sessions is greatly reduced where cultural factors are not sufficiently taken into account.

Perhaps most important is the level of political commitment to these programmes as transformative interventions. For example the lack of evidence of a positive impact of the *BFP* on health outcomes suggests a lack of true intent of the programme to achieve anything beyond poverty reduction. Soares, Ribas & Osorio (2010) argue that in creating the *BFP*, the Brazilian government was primarily concerned with short term poverty alleviation and did not truly consider the programme to be a long term investment. There is likely therefore to be less interest in detailed analyses of the effects of the programme on health or education outcomes, which is reflected in the small number of studies relative to the size and coverage of the programme. The human capital aspect of the *BFP* is believed largely to have originated from the need for public acceptance of the programme, which could only be achieved if recipients were seen to be deserving of the investment made in them (Hall 2008). The relative lack of political will therefore led to inferior monitoring systems and a dearth of research on outcomes.

This is in stark contrast to the experience in Mexico, where *Oportunidades* was comprehensively evaluated and continually altered by the government in light of results (Fiszbien & Schady 2009). With this in mind, there is a forceful argument that “strong leadership by government...and a commitment to accountability...are the key to the success of CCT programmes” (Shibuya 2008, pp790-791).

## **6.2 Limitations**

However despite the relative strength of the data on which this review is based, there are a number of limitations that weaken the conclusions that can be drawn from this research.

Both the heterogeneity of outcomes assessed and the imbalance in the weight of evidence between programmes significantly limit the comparability of the data. With the majority of studies emanating from *Oportunidades* in addition to a large variation in the outcomes assessed, there is no directly comparable data between programmes that can enable accurate investigations linking cause and effect. Evidence is also lacking on specific disease outcomes such as tuberculosis that would provide stronger evidence of a programme effect on health (Boccia et al 2011).

In terms of programme theory, studies have only recently become more focussed on addressing causal pathways of effect; therefore evidence attempting to isolate pathways of impact has so far been fragmentary (Gaarder, Glassman & Todd 2010). A concerted effort to separate the effects of different aspects of the programmes is only in its infancy and multiple pathways may exist that have not been identified in this review.

Dammert (2009) and Handa et al (2007) point out the heterogeneous effects of CCTPs among beneficiary populations in the same programme relating to context-specific factors such as the presence of other social programmes. Where these factors influence outcomes, further complexity is added to the analysis of health outcomes associated with CCTPs. Nevertheless such research is invaluable and must be encouraged because the tendency for results to be reported as single impact estimates has the potential to conceal significant impacts on certain population subgroups (Gaarder 2010). Where results have been stratified among a population, large positive effects were often found among the poorest beneficiaries (Rivera et al 2004). This rich information could be important in guiding programme design, particularly with regard to targeting policies.

Taking these limitations into account, the available evidence allows an overall assessment of the current knowledge on the impact of CCTPs in Latin America on health outcomes.

## 7. Conclusion

The existing literature provides convincing evidence that, where interventions are well designed, CCTPs do indeed contribute to the improved health of beneficiary populations in the short term, even when this is not their sole or primary aim. Evidence exists linking each of the three pathways identified to improvements in health outcomes ranging from linear child growth to self-reported health in old age.

Programme design and contextual factors undoubtedly affect the level of impact possible via CCTPs, with lack of political commitment and supply-side resource constraints restricting the ability of programmes to positively impact on the health of beneficiaries.

The nature of the impact pathways studied in this review render them complementary, with no single pathway being responsible for all programme effects and different pathways lending themselves to improvements in differing aspects of health. What emerges from this analysis is the importance to overall programme effectiveness of pathways focussing on the education and empowerment of women. This reflects the argument of Forde, Bell & Marmot (2011) outlined in Chapter 1, advocating the importance of transferring power as well as resources to beneficiaries in order to fully engage them in the delivery of health care.

Current and future programmes should consequently strive to develop these components, placing greater emphasis on them while avoiding reinforcement of destructive gender roles. What is particularly notable in current programmes is the

absence of men from programme activities. With the engagement of women proving to have such demonstrable results, inclusion of men in education and service engagement has the potential to further enhance the impact on health outcomes and alleviate the perceived burden of responsibility shouldered by women.

As CCTPs continue to grow in popularity, it is vital that their structure and delivery is refined to elicit maximum benefit for the costs incurred. It must be acknowledged that positive impacts in one setting may not be replicated in all, therefore an understanding of the local context must be thoroughly incorporated into programme design. In light of the limitations of the data analysed, further research is recommended to focus on similar outcome measures that more thoroughly reflect the multi-dimensionality of CCTPs in order to better facilitate in-depth, independent analysis of all programme aspects.



## References

- Adato M & Bassett L (2009) Social protection to support vulnerable children and families: the potential of cash transfers to protect education, health and nutrition. *AIDS Care: Psychological and Socio-medical Aspects of AIDS/HIV* 21:60-74
- Adato M & Hoddinott J (2010) *Conditional Cash Transfers in Latin America* Baltimore: John Hopkins University Press
- Adato M, Roopnaraine T & Becker E (2011) Understanding use of health services in conditional cash transfer programs: Insights from qualitative research in Latin America and Turkey. *Social Science & Medicine* 72:1921-1929
- Andrade MV, Chein F, de Souza LR & Puig-Junoy J (2012) Income transfer policies and the impacts on the immunization of children: the Bolsa Familia Program *Cad. Saude Publica* 28(7)1347-1358
- Attanasio O, Gomez LC, Heredia P & Vera-Hernandez M (2005) *The short-term impact of a conditional cash subsidy on child health and nutrition in Columbia*. London: Institute for Fiscal Studies
- Attanasio O, Meghir C & Schady N (2010) Mexico's conditional cash transfer programme. *Lancet* 375:980
- Attanasio O & Mesnard A (2006) The impact of a conditional cash transfer programme on consumption in Columbia. *Fiscal Studies* 27(4):421-442
- Avitabile C (2011) Does information improve the health behavior of adults targeted by a conditional transfer program? *The Journal of Human Resources* 47(3):785-825
- Barber S & Gertler PJ (2008) The impact of Mexico's conditional cash transfer programme, Oportunidades, on birthweight. *Trop Med Int Health* 13(11):1405-1414

- Barber SL & Gertler PJ (2010) Empowering women: how Mexico's conditional cash transfer programme raised prenatal care quality and birth weight. *Journal of Development Effectiveness* 2(1):51-73
- Barham T (2011) A healthier start: The effect of conditional cash transfers on neonatal and infant mortality in rural Mexico. *Journal of Development Economics* 94:74-85
- Barham T & Maluccio JA (2009) Eradicating diseases: The effect of conditional cash transfers on vaccination coverage in rural Nicaragua. *Journal of Health Economics* 28:611-621
- Behrman JR & Hoddinott J (2005) Programme evaluation with unobserved heterogeneity and selective implementation: the Mexican PROGRESA impact on child nutrition. *Oxford Bulletin of Economics and Statistics* 67(4):547-569
- Behrman JR & Parker SW (2013) Is health of the aging improved by conditional cash transfer programs? Evidence from Mexico. *Demography* 50(4):1363-1386
- Behrman JR & Todd PE (1999) *Randomness in the experimental samples of PROGRESA (Education, health and nutrition program)*. Washington DC: International Food Policy Research Institute
- Bird (2007) The intergenerational transmission of poverty: An overview. CPRC Working Paper 99. London: Overseas Development Institute
- Bradshaw S & Viquez AQ (2008) Women beneficiaries or women bearing the cost? A gendered analysis of the Red de Proteccion Social in Nicaragua. *Development and Change* 39(5):823-844
- Boccia D, Hargreaves J, Lonroth K, Jaramillo E, Weiss J, Uplekar M, Ported JDH & Evans CA (2011) Cash transfer and microfinance interventions for tuberculosis control: review of the impact evidence and policy implications. *International Journal of Tuberculosis and Lung Disease* 15(S2):37-49

- Cueto S (2009) Conditional cash-transfer programmes in developing countries. *Lancet* 374:1952-1953
- Dammert AC (2009) Heterogeneous impacts of conditional cash transfers: evidence from Nicaragua. *Economic Development and Cultural Change* 58:53-83
- de Bem Lignani J, Sichieri R, Burlandy L & Salles-Costa R (2010) Changes in food consumption among the Programa Familia participant families in Brazil. *Public Health Nutrition* 14(5):785-792
- de Brauw A, Gilligan DO, Hoddinott J, Roy S (2013) The impact of the Bolsa Familia on women's decision-making power. *World Development* [Online] Available at: <http://dx.doi.org/10.1016/j.worlddev.2013.02.003> accessed on 05/06/2013
- de Brauw A & Peterman A (2011) Can conditional cash transfers improve maternal health and birth outcomes? Evidence from El Salvador's Comunidades Solidarias Rurales. IFPRI Discussion Paper 01080. Washington DC: International Food Policy Research Institute
- de Lima FEL, Rabito EI & Gomes Dias MRM (2005) Nutritional status of the adult population in the Bolsa Familia Program in Curitiba, State of Parana, Brazil. *Brazilian Journal of Epidemiology* 14(2):198-206
- Fernald LCH, Gertler PJ & Hou X (2008) Cash component of conditional cash transfer program is associated with a higher body mass index and blood pressure in adults. *Journal of Nutrition* 138:2250-2257
- Fernald LCH, Gertler PJ & Neufeld LM (2008) The importance of cash in conditional cash transfer programs for child health, growth and development: An analysis of Mexico's Oportunidades. *Lancet* 371:828-837
- Fernald LCH, Gertler PJ & Neufeld LM (2009) 10-year effect of Oportunidades, Mexico's conditional cash transfer programme, on child growth, cognition, language, and behaviour: a longitudinal follow-up study. *Lancet* 374:1997-2005

- Fernald LCH & Gunnar MR (2009) Effects of a poverty-alleviation intervention on salivary cortisol in very low-income children. *Social Science Medicine* 68(12):2180-2189
- Fernald LCH & Hidrobo M (2011) Effect of Ecuador's cash transfer program (Bono de Desarrollo Humano) on child development in infants and toddlers: A randomized effectiveness trial. *Social Science & Medicine* 72:1437-1446
- Fernald LCH, Hou X & Gertler P (2008) Oportunidades program participation and body mass index, blood pressure, and self-reported health in Mexican adults. *Preventing Chronic Disease* 5(3):1-12
- Fiszbein A & Schady N (2009) *Conditional cash transfers; reducing present and future poverty*. Washington DC: World Bank
- Forde I, Bell R & Marmot MG (2011) Using conditionality as a solution to the problem of low uptake of essential services among disadvantaged communities: a social determinants view. *American Journal of Public Health* 101(8):1365-1369
- Forde I, Chandola T, Garcia S, Marmot MG & Attanasio O (2012) The impact of cash transfers to poor women in Columbia on BMI and obesity: prospective cohort study. *International Journal of Obesity* 36:1209-1214
- Gaarder M (2010) Introduction. *Journal of Development Effectiveness* 2(1):1-5
- Gaarder M, Glassman A & Todd JE (2010) Conditional cash transfers and health: unpacking the causal chain. *Journal of development effectiveness* 2(1):6-50
- Gertler P (2004) Do conditional cash transfers improve child health? Evidence from PROGRESA's control randomized experiment. *Health, Health Care, and Economic Development* 94(2):336-341
- Gertler PJ & Boyce S (2001) An experiment in incentive-based welfare: the impact of PROGRESA on health in Mexico. Working Paper [Online] Available at:

[http://faculty.haas.berkeley.edu/gertler/working\\_papers/PROGRESA%204-01.pdf](http://faculty.haas.berkeley.edu/gertler/working_papers/PROGRESA%204-01.pdf)  
accessed on 02/04/2013

Glassman A, Todd JE & Gaarder M (2007) Performance-based incentives for health: conditional cash transfer programs in Latin America and the Caribbean. CGD Working Paper #120. Washington DC: Centre for Global Development

Hall A (2008) Brazil's Bolsa Familia: A double-edged sword? *Development and Change* 39(5):799-822

Handa S & Davis B (2006) The experience of conditional cash transfers in Latin America and the Caribbean. *Development Policy Review* 24(5):513-536

Handa S, Davis B, Stampini M & Winters PC (2010) Heterogenous treatment effects in conditional cash transfer programmes: assessing the impact of PROGRESA on agricultural households. *Journal of Development Effectiveness* 2(3):320-335

Hoddinott J & Wiesmann D (2008) *The impact of conditional cash transfer programs on food consumption in Honduras, Mexico, and Nicaragua*. IFPRI: Washington DC

Huerta MC (2006) Child health in rural Mexico: has Progresa reduced children's morbidity risks? *Social Policy & Administration* 40(6):652-677

Irwin LG, Siddiqi A & Hertzman C (2007) Early child development: A powerful equalizer (final report). Geneva: World Health Organization

Johannsen J, Tejerina L, Glassman A (2009) Conditional cash transfer programs in Latin America: Problems and opportunities. Working Paper. Washington DC: Inter-American Development Bank

Lagarde M, Haines A & Palmer N (2009) The impact of conditional cash transfers on health outcomes and use of health services in low and middle income countries (Review) *Cochrane Database of Systematic Reviews* Issue 4

- Leroy JL, Gadsden P, Rodriguez-Ramirez S & Gonzalez de Cossio T (2010) Cash and in-kind transfers in poor rural communities in Mexico increase household fruit, vegetable, and micronutrient consumption but also lead to excess energy consumption. *Journal of Nutrition* 140:612-617
- Leroy JL, Garcia-Guerra A, Garcia R, Dominguez C, Rivera J & Neufeld LM (2008) The Oportunidades program increases the linear growth of children enrolled at young ages in urban Mexico. *Journal of Nutrition* 138:793-798
- Leroy JL, Ruel M & Verhofstadt E (2009) The impact of conditional cash transfer programmes on child nutrition: a review of evidence using a programme theory framework. *Journal of Development Effectiveness* 1(2):103-129
- Lomeli EV (2008) Conditional cash transfers as social policy in Latin America: an assessment of their contributions and limitations. *Annual Review of Sociology* 34:475-499
- Maluccio JA & Flores R (2004) *Impact evaluation of a conditional cash transfer program: the Nicaraguan Red de Protección Social*. Washington DC: International Food Policy Research Institute
- Molyneux M (2008) Conditional cash transfers: a 'pathway to women's empowerment'? Pathways to Women's Empowerment Working Paper 5. Brighton: Institute of Development Studies
- Morris SS, Flores R, Olinto P & Medina JM (2004a) Monetary incentives in primary health care and effects on use and coverage of preventive health care interventions in rural Honduras: cluster randomised trial. *Lancet* 364:2030-2037
- Morris SS, Olinto P, Flores R, Nilson EAF & Figueiro AC (2004b) Conditional cash transfers are associated with a small reduction in the rate of weight gain of preschool children in Northeast Brazil. *Journal of Nutrition* 134:2336-2341
- Ozer EJ, Fernald LCH, Manley JG & Gertler PJ (2009) Effects of a conditional cash transfer program on children's behaviour problems. *Pediatrics* 123:e630-e637

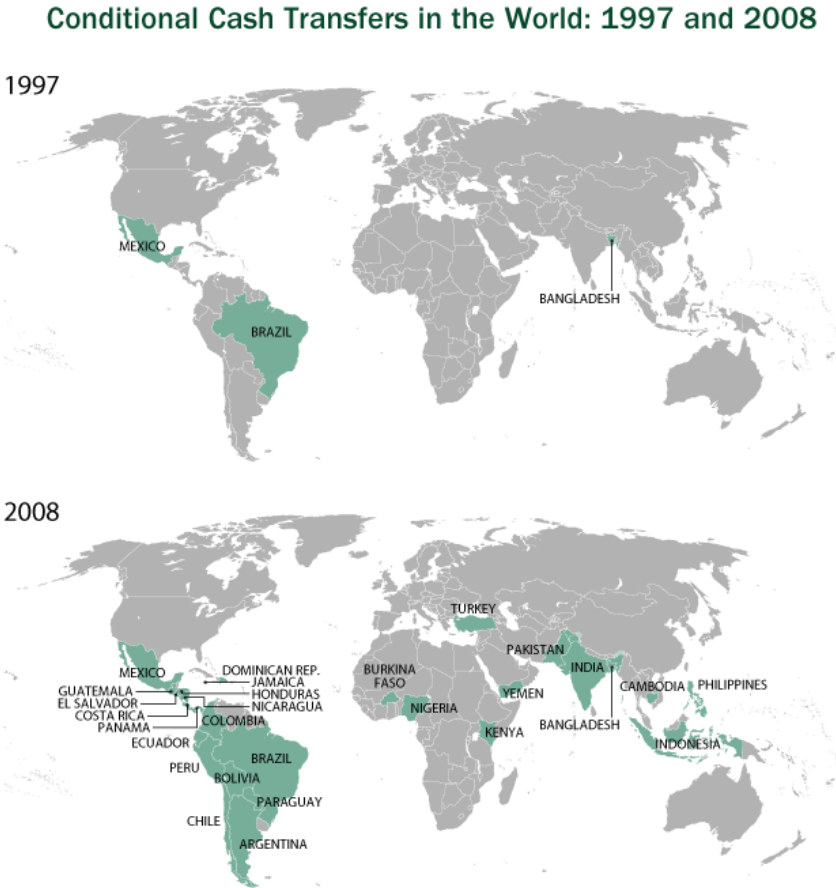
- Paes-Sousa R, Santos LMP & Miazaki ES (2011) Effects of a conditional cash transfer programme on child nutrition in Brazil. *Bulletin of the World Health Organisation* 89:496-503
- Ranganathan M & Lagarde M (2011) Promoting healthy behaviours and improving health outcomes in low and middle income countries: A review of the impact of conditional cash transfer programmes. *Preventive Medicine* 55:S95-S105
- Rasella D, Aquino R, Santos CAT, Paes-Sousa R, Barreto ML (2013) Effect of a conditional cash transfer programme on childhood mortality: a nationwide analysis of Brazilian municipalities. *Lancet* 382:57-64
- Rawlings LB & Rubio GM (2005) Evaluating the impact of conditional cash transfer programs. *The World Bank Research Observer* 20:29-55
- Rivera JA, Sotres-Alvarez D, Habicht JP, Shamah T & Villalpando S (2004) Impact of the Mexican Program for Education, Health, and Nutrition (Progresa) on rates of growth and anemia in infants and young children. A randomized effectiveness study. *JAMA* 291(21) 2563-2570
- Rothman KJ & Greenland S (1998) *Modern Epidemiology 2nd edition*. Philadelphia: Lippincott, Williams & Wilkins
- Rossi PH, Lipsey MW & Freeman HE (2004) *Evaluation: a systematic approach 6<sup>th</sup> Edition*. Thousand Oaks, CA: Sage Publications
- Shibuya K (2008) Conditional cash transfer: a magic bullet for health? *Lancet* 371:789-791
- Sidiani S & Sechrest L (1999) Putting program theory into operation. *American Journal of Evaluation* 20(2):227-238
- Soares FV, Ribas RP & Osorio RG (2010) Evaluating the impact of Brazil's Bolsa FamA-lia: cash transfer programs in comparative perspective. *Latin American Research Review* 45(2):173-190

Sosa-Rubi SG, Walker D, Servan E & Bautista-Arredondo S (2011) Learning effect of a conditional cash transfer programme on poor rural women's selection of delivery care in Mexico. *Health Policy and Planning* 26:496-507



# Figures

Fig 1. Conditional cash transfer programmes: 1997 and 2008 (Fiszbein & Schady 2009, p4)



**Fig 2. Impact theory hypotheses (Rossi, Lipsey & Freeman 2004, p105)**

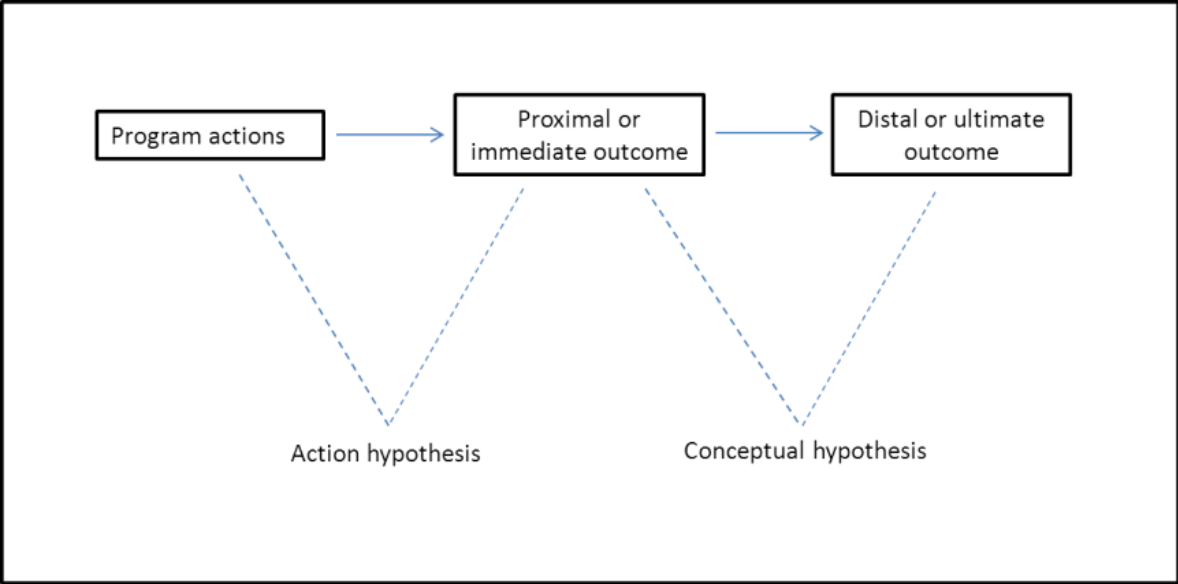
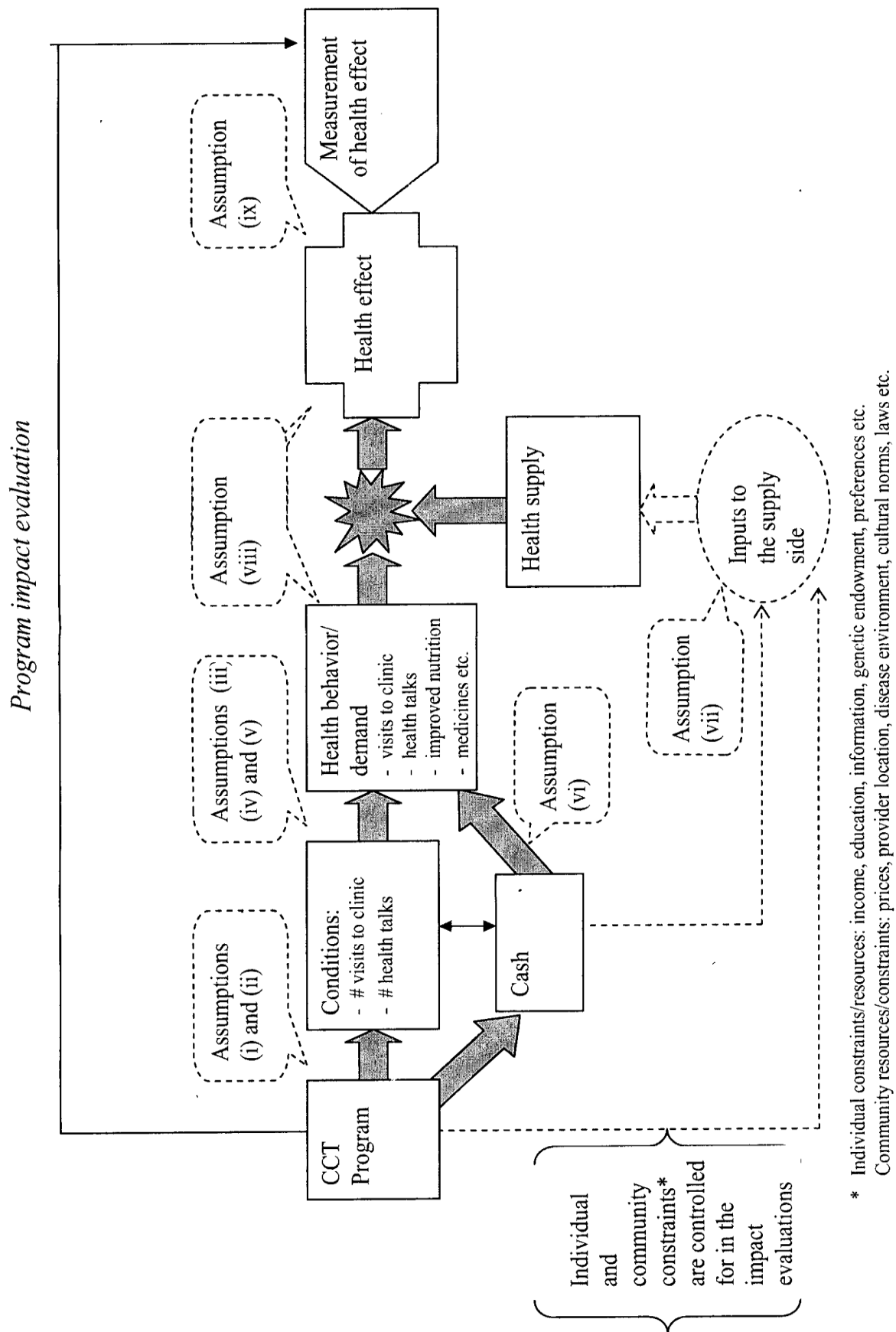
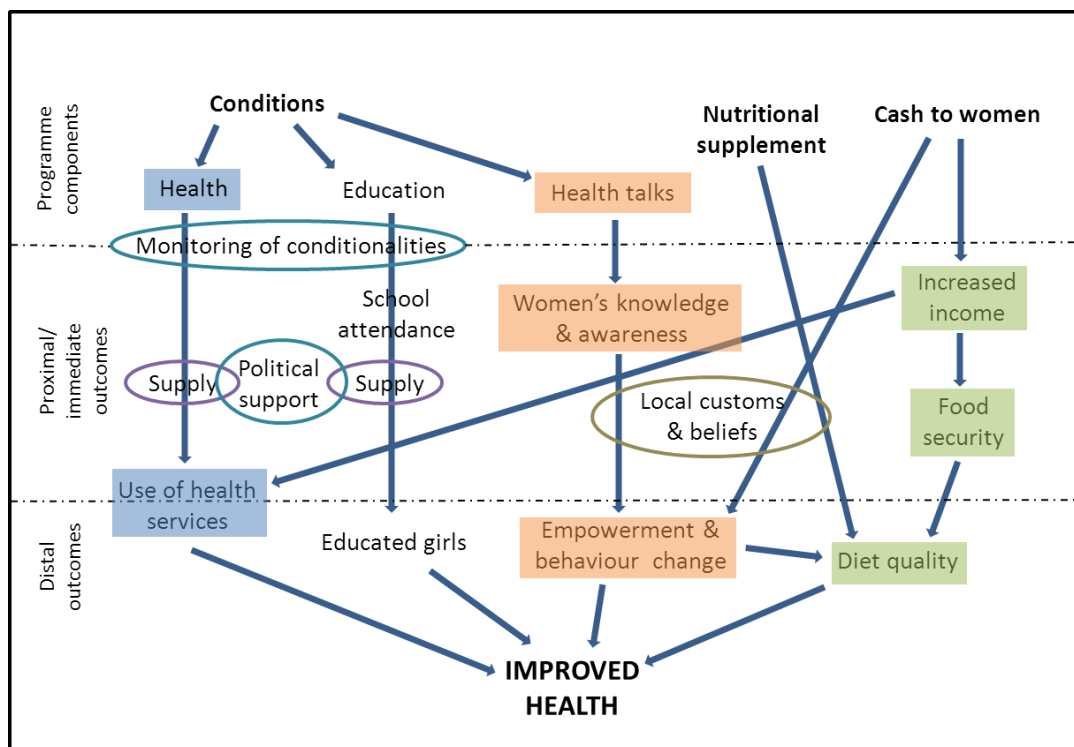


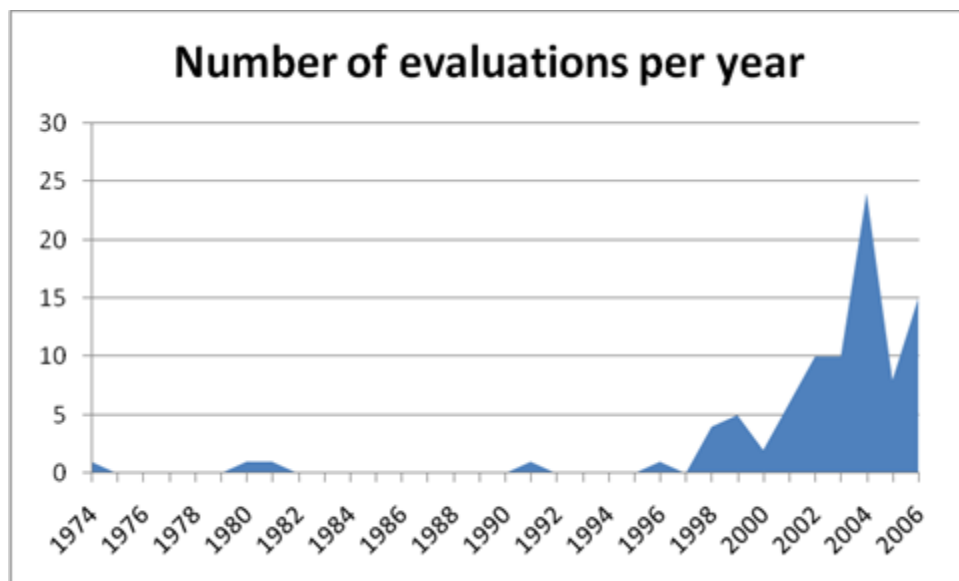
Fig 3. CCT programme effect model (Glassman, Todd & Gaarder 2007, p10)



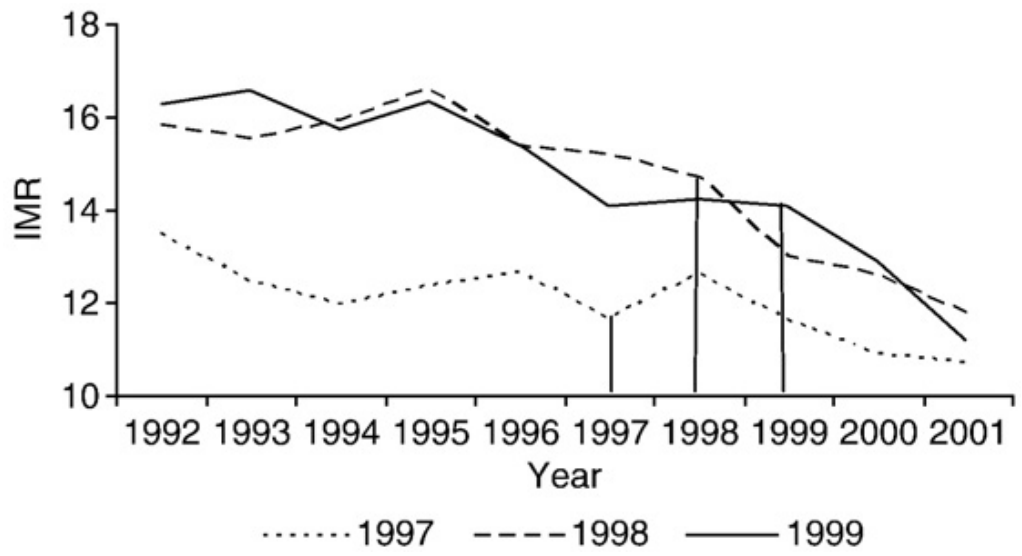
**Fig 4. Impact pathways framework, adapted from Leroy, Ruel & Verhofstadt (2009, p105)**



**Fig 5. Number of impact evaluations published per year in Latin America and the Caribbean (Johannsen, Tejerina & Glassman 2009, p12)**



**Fig 6. Trends in rural municipality IMR by date Oportunidades became available in a municipality (Barham 2011, p78)**



# Tables

**Table 1. Outcome measures of studies included in review**

<b>General area</b>	<b>Outcome measures</b>
<b>Health service use</b>	Health centre attendance Vaccination rates
<b>Child morbidity and mortality</b>	Diarrhoea Respiratory illness Mothers' report Infant and neonatal mortality rates (IMR/NMR)
<b>Child health</b>	Growth (height-for-age/weight-for-age) Birthweight Haemoglobin (Hb) concentration/anaemia Cognitive development
<b>Adult health</b>	Body mass index (BMI) Blood pressure (BP)/hypertension Self-reported health (SRH)
<b>Consumption</b>	Household consumption Health expenses

Appendix A: Features of programmes included in review

Sources: Fiszbein & Schady (2009), Ranganathan & Lagarde (2011) & Leroy et al (2010)

Programme/ Country	Year began	Target population	Recent coverage estimate	Benefits	Conditions
<i>Oportunidades</i>  Mexico	1997	Extremely poor households in selected communities	5 million households	Education: \$12-23 per primary school child per month, \$34-43 per secondary school child per month, \$29 per child per year for school materials Health: \$17 per household per month Nutritional supplements for children	School enrolment and attendance (80% monthly, 93% yearly)  Compliance of all household members with preventive health care schedule Attendance of adults at health and nutrition lectures
<i>Bolsa Familia Programa</i>  Brazil	2003	Poor and extremely poor families from selected municipalities	11 million families	Basic benefit \$18 per month for extremely poor families  \$6 per month per pregnant woman or child under 7	Regular school attendance for 6-17 year olds (85%)  Compliance with preventive health care schedule for children 0-6 Pre and postnatal checkups for pregnant and lactating women and attendance at health and nutrition seminars
<i>Red de Protección Social</i>  Nicaragua	2000	Poor households with children age 0-5 and 7-13 in 42 municipalities	30,000 households	Education: \$17 per family every 2 months with \$20 school material support per child per year  Health & nutrition: \$34 per family every 2 months	For children age 7-13: regular school attendance (85%)  For children under 5: attendance at preventive health care appointments Attendance of mothers at educational workshops

<i>Programa de Asignación Familiar</i> Honduras	1998	Poor households in selected municipalities	240,000 households	Education: \$60 per household per year  Health: \$40 per household per year Nutrition: \$113 per household per year	Regular school attendance (85%)  Compliance with schedule of preventive health care
<i>Familias en Acción</i> Columbia	2001	Extremely poor families with children in selected municipalities	1.7 million households	Education: \$8-33 per month depending on grade  Health: \$30 per month for families with children <7 years old	Regular school attendance  Attendance at growth and development checkups  Attendance of mothers at health workshops
<i>Comunidades Solidarias Rurales</i> El Salvador	2005	Extremely poor families in rural municipalities with children age 0-15	89,000 households	Education: \$15 per month per household with children 6-15  Health: \$15 per month per household with children 0-5 and/or pregnant women \$14 per household per month	Regular school attendance (80%)  Compliance with immunisation and health and nutrition monitoring for children and pregnant women Attendance at nutrition and health education sessions
<i>Programa de Apoyo Alimentario</i> Mexico	2003	Poor households in marginalised communities (<2500 inhabitants)	N/A		

\$ =approximate figure in US\$, purchasing power parity.



Appendix B: Studies included in the review

Publication (Author & date)	Original research / Review	Study design	Health outcomes measured	Direction of results: programme exposure associated with...	Which impact pathways addressed, if any?
<b>Mexico (Oportunidades)</b>					
Barber S & Gertler PJ (2008)	Original	Experimental	Birthweight	Higher birthweight	/
Barber SL & Gertler PJ (2010)	Original	Experimental	ANC quality	Higher quality of ANC	Health service utilisation Income & food security Women's knowledge & empowerment
Barham T (2011)	Original	Experimental	NMR & IMR	Decline in rural infant mortality. No effect on neonatal mortality	/
Behrman JR & Hodinott J (2005)	Original	Experimental	Child growth	Positive effect of supplement use on mean growth of children	Income & food security (micronutrient supplements)
Behrman JR & Parker SW (2013)	Original	Experimental with propensity score matching for 2003 group	Variety of adult outcomes	Positive health effects(SRH), largely for women	Health service utilisation Women's knowledge & empowerment
Fernald LCH, Gertler PJ & Hou X (2008)	Original	Experimental	Adult BMI & BP	Doubling of cash associated with higher BMI, higher diastolic blood pressure and higher prevalence of overweight and obesity	Health service utilisation Income & food security Women's knowledge & empowerment
Fernald LCH, Gertler PJ & Neufeld LM (2008)	Original	Experimental	Child growth & anaemia	Increased cash transfer associated with higher height-for-age , lower prevalence of stunting and overweight and higher Hb concentration	Income & food security Women's knowledge & empowerment

Fernald LCH, Gertler PJ & Neufeld LM (2009)	Original	Experimental	Child growth, cognition, language & behaviour	Longer programme exposure associated with reduced socioemotional problems. Higher cumulative cash transfer associated with positive effects on height and cognition	Income & food security
Fernald LCH & Gunnar MR (2009)	Original	Quasi-experimental using propensity score matching	Salivary cortisol (children)	Lower salivary cortisol levels	/
Fernald LCH, Hou X & Gertler P (2008)	Original	Quasi-experimental using propensity score matching	Adult BMI, BP & SRH	Lower BMI and prevalence of obesity and overweight, lower prevalence of hypertension and better self reported health	/
Gertler P (2004)	Original	Experimental	Child morbidity, height & anaemia	Positive effect on height and morbidity	/
Gertler P & Boyce S (2001)	Original	Experimental	Utilisation, inpatient hospitalisations, child morbidity, growth & anaemia	Positive effect on utilisation, fewer inpatient hospitalisations, reduced child morbidity and anaemia and increased height	Health service utilisation
Handa et al (2010)	Original	Experimental	Attendance	Reduced impact on attendance for beneficiaries also participating in an additional social programme	Health service utilisation
Huerta MC (2006)	Original	Experimental	Child morbidity	Decreased risk of morbidity for children 24-59 months. Stronger effect for diarrhoea than respiratory infections	Income & food security (micronutrient supplements)
Leroy JL et al (2008)	Original	Quasi-experimental using propensity	Child growth	Positive effect on height-for-age for children <6months. Null effect on children 6-24months	/

		score matching			
Ozer et al (2009)	Original	Quasi-experimental using propensity score matching	Child behavioural problems	Decrease in aggressive/oppositional symptoms. No effect for symptoms of anxiety/depression or total problem behaviours	/
Rivera et al (2004)	Original	Experimental	Child growth & anaemia	Better growth and lower rates of anaemia among poorest infants	/
Sosa-Rubi et al (2011)	Original	Quasi-experimental using propensity score matching	ANC & delivery care	Increase in number of ANC visits	Women's knowledge & empowerment
<b>Brazil (BFP)</b>					
Andrade et al (2012)	Original	Propensity score matching	Vaccination rates	No effect	Health service utilisation
de Bem Lignani et al (2010)	Original	Cross-sectional	Consumption	Increased consumption of all food groups	Income & food security
de Brauw A et al (2013)	Original	Cross-sectional follow-up surveys	Women's decision making power in relation to health	Increased power in decisions relating to health expensed	Women's knowledge & empowerment
de Lima FEL, Rabito EI & Gomes Dias MRM (2005)	Original	Cross-sectional	Adult BMI	High prevalence of excessive weight amongst population	/
Hall A (2008)	Review	Review	Multi	General discussion	Health service utilisation Income & food security Women's knowledge & empowerment
Morris SS et al (2004b)	Original	Matched design	Child growth	Negative effect on weight gain	/
Paes-Sousa R,	Original	Cross-	Child growth	Positive effect on height-for-age	/

Santos LMP & Miazaki ES (2011)		sectional			
Rasella et al (2013)	Original	Mixed ecological design	Child mortality	Association between increased programme coverage and decreased under-5 mortality rate	Health service utilisation Income & food security Women's knowledge & empowerment
Soares FV, Ribas RP & Osorio RG (2010)	Review	Review	Multi	General discussion	Health service utilisation
<b>Nicaragua (RPS)</b>					
Barham T & Maluccio JA (2009)	Original	Experimental	Vaccinations	Increased vaccination coverage	Health service utilisation
Bradshaw S & Viquez AQ (2008)	Review	Review	Multi	General discussion	Health service utilisation Income & food security Women's knowledge & empowerment
Dammert AC (2009)	Original	Experimental	Household expenditure	Heterogeneous effects among subgroups of beneficiaries	/
Maluccio JA & Flores R (2004)	Original	Experimental	Attendance, vaccinations, child growth & anaemia	Positive effects on range of outcomes	Health service utilisation Income & food security (micronutrient supplements)
<b>Columbia (FA)</b>					
Attanasio et al (2005)	Original	Matched design	Child growth, morbidity, vaccinations, consumption, attendance	Improved nutritional status and lower morbidity. Increased use of preventive health care	Health service utilisation
Attanasio O & Mesnard A (2006)	Original	Matched design	Consumption	Increase in total food consumption and quality of food consumed	Income & food security

Forde I, Bell R & Marmot MG (2011)	Original	Matched design	Women's BMI & Obesity	Increased BMI & obesity	Income & food security Women's knowledge & empowerment
<b>Mexico (PAL)</b>					
Avitabile C (2011)	Original	Experimental	Adult BMI & health behaviours	Better outcomes for beneficiary women where attendance at health and nutrition sessions is compulsory	Women's knowledge & empowerment
Leroy JL et al (2010)	Original	Experimental	Consumption	Increased consumption of total energy, fruit and vegetables and animal source foods	Income & food security
<b>El Salvador (CSR)</b>					
de Brauw A & Peterman A (2011)	Original	Quasi-experimental	ANC, birth care & postnatal care	Increase in skilled attendance at birth and birth in health facilities. No effect on ANC or postnatal care	Health service utilisation Women's knowledge & empowerment
<b>Honduras (PRAF)</b>					
Morris SS et al (2004a)	Original	Randomised controlled intervention	Attendance & vaccinations	Increased use of ANC and well-child check ups	Health service utilisation
<b>Multi programme</b>					
Adato M, Roopnaraine T & Becker E (2011)	Original	Qualitative research using ethnographic methods	Various in Mexico, Nicaragua & El Salvador	Examining cultural influences on health care decisions in programme contexts	Health service utilisation Income & food security Women's knowledge & empowerment
Hoddinott J &	Original	Experimental	Consumption in	Improvements in diet	Income & food security

Wiesmann D (2008)			Mexico, Honduras & Nicaragua	composition, notably in poorest households	
Molyneux M (2008)	Review	Review	Multi	General discussion	Women's knowledge & empowerment