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# CASH TRANSFER AND MICROFINANCE INTERVENTIONS FOR TUBERCULOSIS CONTROL: REVIEW OF THE IMPACT EVIDENCE AND IMPLEMENTATION CHALLENGES

Social Determinants of Health Discussion Paper 5

DEBATES, **POLICY & PRACTICE,** CASE STUDIES

# CASH TRANSFER AND MICROFINANCE INTERVENTIONS FOR TUBERCULOSIS CONTROL: REVIEW OF THE IMPACT EVIDENCE AND IMPLEMENTATION CHALLENGES

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# Contents

# Abbreviations and acronyms

| | |
|---|---|
| AIDS | acquired immunodeficiency syndrome |
| BDH | Bono de Desarrollo Humano [Human Development Grant] |
| CFPR/TUP | Challenge the Frontiers of Poverty Reduction/Targeting the Ultra Poor |
| GDP | gross domestic product |
| HIV | human immunodeficiency virus |
| IGVGD | Income Generation for Vulnerable Group Development |
| IMAGE | Intervention with Microfinance for AIDS and Gender Equity |
| JSY | Janani Suraksha Yojana |
| NGO | nongovernmental organization |
| PATH | Programme of Advancement through Health and Education |
| PFA | Programa Familias en Acción [Families in Action Programme] |
| PRAF | Programa de Asignación Familiar [Family Allowance Programme] |
| PROGRESA | Programa de Educación, Salud y Alimentación [Programme for Education, Health and Nutrition] |
| RADAR | Rural AIDS Development Action Research Programme |
| RPS | Red de Protección Social [Social Protection Network] |
| SDIP | Safe Delivery Incentive Programme |
| SEF | Small Enterprise Foundation |
| TB | tuberculosis |
| VCT | voluntary counselling and testing |
| WHO | World Health Organization |

# 1. Summary

Cash transfer and microfinance programmes are forms of social protection interventions designed to support people to move out poverty. By improving material living conditions, psychosocial circumstances and health-seeking behaviours, these interventions have the potential to improve access to quality tuberculosis (TB) care and reduce people's vulnerability to TB. However, no study has yet been implemented to formally assess the impact of these interventions on TB indicators or the operational and methodological challenges that may limit their implementation in high TB burden countries.

This review aimed to address these knowledge gaps. Data sources included published and unpublished references identified from clinical and social electronic databases, grey literature and websites. To be eligible, interventions had to be conducted in middle- or low-income countries and document an impact evaluation on one of the following outcomes: (a) TB or other respiratory infections; (b) household socioeconomic position; or (c) factors mediating the association between household socioeconomic position and TB, including poor health-seeking behaviours, food insecurity and biological risk factors such as HIV and adult malnutrition.

Overall, approximately 150 documents were appraised. A total of 15 cash transfer and seven microfinance interventions, respectively from 13 and five different countries, met the inclusion criteria. No intervention directly addressed TB or other respiratory infections.

Only one intervention directly addressed HIV incidence and could not detect any impact. Neither of the two conditional cash transfer interventions evaluating adult malnutrition could detect an effect, whereas a microfinance intervention in Bangladesh proved to be effective in preventing malnutrition among ultra-poor households. Most of the cash transfer interventions and microfinance interventions appeared to have a positive impact on all the remaining outcomes under study. This evidence appeared to be more convincing for cash transfer than for microfinance interventions.

Conditionality, targeting and financial costs appeared to be the most critical aspects potentially challenging the transferability of cash transfer and microfinance for TB control purposes.

The evidence gathered in this review demonstrates that these interventions have the potential to reduce new cases of TB (by reducing people's susceptibility) and effectively complement the current TB control strategy (by creating better and more receptive conditions for the delivery, acceptance and success of biomedical interventions). However, operational and methodological challenges persist. More importantly, no direct evidence on TB control is currently available, making final conclusions difficult to draw. Investments are urgently needed to formally test the impact of these interventions on TB and to understand their feasibility.

# 2. Introduction

## 2.1 Expanding the tuberculosis control paradigm: a call for action

The recent work of the World Health Organization (WHO) Commission on Social Determinants of Health has dramatically contributed to reinforcing the importance of social determinants in public health research[1]. The aim of the Commission was not just to update and widen the existing evidence on the social determinants of health and health inequalities, but also to explore, in a responsible and systematic way, new possible programmatic actions for public health priorities, including tuberculosis (TB) control[1,2]. This led to a strategic plan made up of three principles of action, the first of which is improving the conditions in which people are born, grow, live, work and age.

The importance of living conditions and socioeconomic development, especially in the context of TB control, was recently reiterated during the 2009 World Conference of the International Union Against Tuberculosis and Lung Disease in Mexico, where Mario Raviglione, Director of the Stop TB Department of WHO, proposed an innovative approach to TB control based on the integration of four different spheres of action, including the "development" sphere[3].

Despite the innovative approach, his call for "moving beyond the TB box" is not new in the history of TB control. One of the main lessons learnt from secular data is, in fact, that TB control works better when based on a strategic combination of socioeconomic and public heath interventions. Recent surveillance data clearly confirm this: while between 2004 and 2008 TB control activities based solely on case finding and treatment have significantly contributed to the reduction of TB morbidity and mortality in most of the regions of the world, their impact on TB incidence have been less than anticipated, with only a 0.7% per year decline over this period[4]. Further evidence suggests that the performance of TB control programmes has not yet become the major driver of TB incidence. Rather, this is still more strongly correlated to socioeconomic indicators, including the Human Development Index, access to water and sanitation, and under-5 child mortality[5,6].

This evidence makes the case that progress towards TB elimination may depend on our capacity to conjugate both public health interventions to tackle specific TB risk factors and high-level political decisions to reduce poverty and promote social protection, education and empowerment.

Social protection, in particular, has gained momentum over the last decade[7]. Devereux and Sabates-Wheeler have defined social protection as "the set of all initiatives, both formal and informal, that provide: social assistance to extremely poor individuals and households; social services to special groups who need special care and access to basic services that would be otherwise denied; social insurance to protect people against the risk and consequences of livelihood shocks; and social equity to protect people against social risks such as discrimination or abuse"[8].

Social protection can take many forms. Among them, cash transfers and microfinance have recently received particular attention because of the large number of individuals enrolled and the increasing number of studies formally documenting their impact. Furthermore, their scope of improving people's human and financial capital has triggered significant interest in their potential application for public health purposes [7]. Given the close interplay between human immunodeficiency virus (HIV) and poverty, for

example, the potential role of these interventions to strengthen the global response to HIV and acquired immunodeficiency syndrome (AIDS) has been recently explored with great enthusiasm [9–14].

Our hypothesis is that – as for HIV/AIDS – by improving material living conditions, psychosocial circumstances and health-seeking behaviours, social protection interventions have the double potential to both improve access to quality TB care and reduce people's vulnerability to TB. In contrast to HIV/AIDS, though, very little is known as yet about the potential impact of these interventions on TB control and how they could be best implemented. A number of studies suggest that through carefully considered incentives and enablers, programmes can contribute to achieving important TB control objectives[15]. However, both design and implementation challenges have so far hampered the proper impact evaluation of these initiatives. Further, incentives and enablers do not strictly follow under the same definition and do not always bear the same advantages of social protection programmes. Consequently, evidence on the impact of social protection interventions for improved TB control remains inconclusive. Three additional linked barriers further hamper the inclusion of social protection in the current TB control model based on case finding and treatment: the absence of strong leadership, weak cross-sectoral partnerships, and limited human and financial resources. In particular, the limited funding hampers the possibility to pilot similar interventions to provide preliminary evidence on TB indicators. At the same time, the current lack of evidence limits the availability of required funding, creating the conditions for an "evidence lack–funding allocation" vicious cycle.

## 2.2 Objectives of the review

This review aims to assess the potential contribution of social protection interventions, such as cash transfer and microfinance, to the global TB response. Specific objectives of the review include:

- systematically quantify the impact of these interventions on outcomes epidemiologically relevant for TB;
- critically assess the main implementation challenges that may limit the use of cash transfer and microfinance in the context of TB control;
- design an implementation conceptual framework informed by the evidence gathered;
- map out the future research agenda on the structural and social determinants of TB.

This document is organized as follows: after introducing cash transfer and microfinance interventions and the theoretical framework guiding the potential application of these interventions to TB control (chapter 3), we present the methods employed in this review (chapter 4). Chapter 5 describes the impact of these interventions on a list of outcomes epidemiologically relevant for TB. We then outline the main programmatic lessons emerging from the interventions included in the review and discuss the ones that are likely to be the most critical for the future implementation of social protection for TB control (chapter 6). We conclude by discussing how the evidence gathered can inform the implementation of social protection interventions adapted to meet TB control needs.

# 3. Addressing the structural and social determinants of tuberculosis through social protection

Thanks to the support of global and regional institutions and many bilateral donors, social protection emerged in the 1980s as a promising possibility for poor countries, and it has quickly become a prominent component of the World Bank's strategy for poverty alleviation[7]. Part of this impetus for social protection is that poverty reduces investment in the health, nutrition and education of children, which once lost lead to reduced earnings later in life, perpetuating intergenerational cycles of poverty[16].

Depending on the type of interventions, social protection initiatives can have protective, preventive, promotive and transformative objectives[7]. Recently the two key components of social protection interventions have been providing direct transfers of food or money to poor households, with the receipt of these transfers sometimes conditional upon other actions; and increasing access to microfinance opportunities to support business development. Training to support human capital development is also central to social protection programmes[16].

## 3.1 Conditional and unconditional cash transfers

Cash transfers are innovative forms of social protection based on the provision of money to poor or vulnerable households or individuals (such as the elderly and children) with the aim of enabling them to move structurally out of poverty by protecting and building their financial, physical and human capital assets[7].

Cash transfer can be unconditional (given without obligations) or conditional on some behavioural requirement, including school enrolment, utilization of health care services and health education[17]. Unconditional cash transfers have been defined as "regular non-contributory payment of money provided by government or non-government organizations to individuals or households, with the objective of decreasing chronic or shock-induced poverty, addressing social risk and reducing economic vulnerability"[18]. The conditionality aspect is the innovative element that makes this type of programmes an instrument for longer-term human capital investment as well as short-term assistance. Thanks to the emphasis on human capital accumulation among young people and the income support provision, conditional cash transfer interventions can at the same time address future poverty (by breaking the intergenerational cycle of poverty) and current poverty (by smoothing consumption in the short term)[17].

Conditional or not, in many countries cash transfer interventions now constitute the largest form of national, formal, publicly provided safety net system, covering millions of households[17]. These programmes have been launched in Latin America over the past 10 years, but due to their success and increasing popularity they are being increasingly implemented also in Africa and Asia. According to a recent report of the World Bank, at least 40 cash transfer programmes are currently running in 27 countries, including virtually every country of Latin America, Bangladesh, Cambodia, Indonesia, Kenya, Malawi, Mexico, Morocco, Nigeria, Pakistan, the Philippines, South Africa, Turkey, Yemen and Zambia[19].

## 3.2 Microfinance

Microfinance initiatives provide a complementary approach to social protection often delivered by the nongovernmental sector. Among the several types of poverty alleviation strategies, microcredit is considered to be a preventive measure (that is, aimed to directly avert deprivation). Microfinance institutions operate in villages, slums and neighbourhoods in which the lack of financial access is one of the many deprivations. The general principle of microcredit is to provide the poor with access to credit in order to improve their opportunities to engage in productive activities[20]. Microcredit aims to address the "credit gap" between the poor and the better-off by offering an alternative for the poor to acquire loans[20].

The success of microfinance is impressive. According to the latest Microcredit Summit Campaign report, by the end of December 2007, 3552 microfinance programmes reported reaching 154 852 825 clients in 134 countries with a current loan. Of these clients, 106 584 678 were among the world's poorest when they started the programme[21]. Approximately, 90.6% of the poorest clients reported were in Asia, a continent that is home to approximately 64% of the world population living on less than US$ 1 a day. Of the 106.6 million poorest clients reached in 2007, 94 million (88.2%) were served by the 76 largest individual institutions and networks, all reporting 100 000 or more poorest clients. Of these 106.6 million, 88.7 million (83.2%) were women. The number of very poor women reached grew from 10.3 million at the end of 1999 to 88.7 million at the end of 2007 – an increase of 764%. However, despite the massive number of initiatives, it has been estimated that today in Africa microcredit is available to less than 10% of those who need it[22].

Differently from cash transfer interventions, microfinance was not originally conceived to achieve health improvement among its clients. The dominant position of microfinance institutions was typically to focus on financial services and avoid engaging with health services. The common concern was that overstretching the areas of work of microfinance and the competence of the microfinance staff could cause a diversion of material and human resources from the core focus of microfinance, namely poverty alleviation[11].

Presently, things are changing: evidence from microfinance programmes conducted in African countries suggests that more institutions today choose to deliver development packages combining loans and health education. The logic behind this approach is that microfinance, through credit and solidarity groups, may represent an excellent entry point in generating knowledge on public health issues that are contextually relevant and, at the same time, provide people with the material means (through income and empowerment) to turn this knowledge into measurable behavioural changes[11].

So far the potential impact of microcredit has been tested on malnutrition, vaccination coverage, contraceptive use, prenatal and postnatal care, breastfeeding practices, HIV prevention, HIV impact mitigation, and – as discussed later in this document – even on TB case finding and TB treatment adherence. Training has been an essential component, even in microfinance programmes having a health improvement objective. For example, in some cases microfinance institutions have used client meetings to engage women on health-related matters, including malnutrition, vaccination coverage, contraceptive use, breastfeeding practices, intimate partner violence, HIV prevention, HIV impact mitigation and childcare[22].

## 3.3 Pathways of social protection for tuberculosis control

Social protection participation can result in health improvement at least through four possible pathways[20]: economic, social, psychosocial and political. With regard to the economic pathway, it can be imagined that social protection intervention participation can have a health impact by increasing access to economic resources, collective resources, and public goods and services, ultimately improving the overall material living conditions. The social pathway operates by maintaining and protecting health through the provision of social support, changing social norms to influence health-related behaviours and increasing social participation. The psychological pathway operates via the provision of opportunities for participants to engage in activities or gather information that may help them to develop their sense of self, potentially leading to greater self-efficacy and stronger sense of coherence. Finally, the political pathway may assist social protection participants in developing a greater "voice", enhancing their power and access to public resources.

In the specific case of TB, cash transfer and microfinance interventions may be harnessed to improve prevention and support existing TB control strategies in the following ways:

**Economic.** Social protection interventions implemented in areas with high TB burdens may reduce the general population's TB vulnerability by increasing household investment in income-generating activities, ensuring better quantity and quality of food, and contributing to an overall improvement in household material conditions. If targeted to TB patients, cash transfers might be provided conditional on treatment adherence or other relevant health behaviours such as stopping smoking or preventing HIV exposure. Transfers might also be offered to close contacts of diagnosed TB patients in order to support goals such as sputum sample collection and latent TB infection diagnosis or successful provision of preventive medication to children, all of which should reduce further the morbidity associated with an index case. Similarly, microfinance interventions designed to support longer-term developmental aims and present opportunities for training and business development might be provided to those with TB or members of their households who do not have TB. Finally, both cash transfer and microfinance interventions can contribute to mitigating the impact of TB by reducing the extent of vulnerability of the household, especially in the later stages of TB[23].

**Social.** Thanks to the provision of social support, the fears about the costs and stigma associated with TB can be replaced by an awareness of TB and the advantages of early diagnosis and treatment[24,25]. This may ultimately lead to an increase in early case finding and treatment success rates. Mandatory or voluntary education about TB could be linked to participation in social programmes. In the case of cash transfer, for example, benefit distribution points have been used as sites for information dissemination and outreach[26].

**Psychosocial.** Although this pathway has not been empirically tested yet, some authors have hypothesized that income inequalities affect the social structure of the community in which TB is prevalent, leading to more psychosocial stress than would be present in more egalitarian settings. This increased stress may reduce the effectiveness of an individual's immune response to infection and thus raise the risk of developing TB[27,28]. The provision of social and economic support through progress in social protection would help to mitigate the concentration of psychosocial stressors and help make people more resistant to TB.

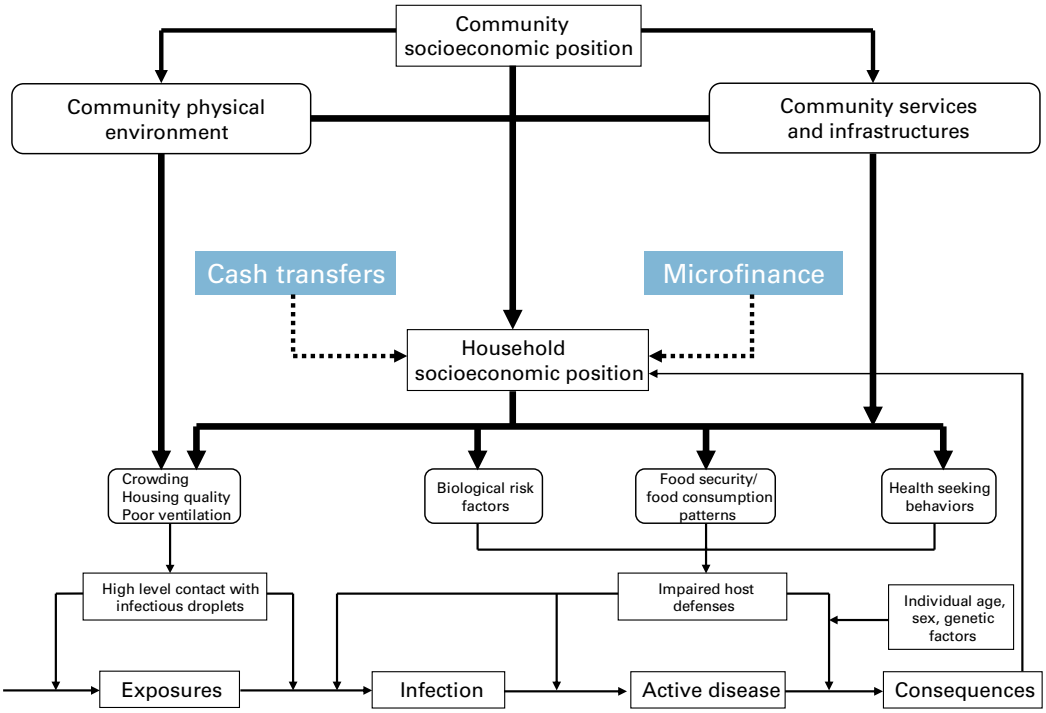
**Political.** Through economic empowerment and a greater sense of self-efficacy, TB-affected families engaged in social protection programmes may ultimately gain stronger confidence and influence the political decisions about TB care rights and TB care-related education.

## 3.4 Conceptual framework

For the purpose of this review we decided to focus only on the economic pathway. Following from the above theoretical background on the structural and the social determinants of TB, we developed a conceptual framework to explain the possible ways through which social protection interventions can concur to tackle these determinants and ultimately support TB control.

While acknowledging the importance of structural determinants also at community level and beyond, we focused on household socioeconomic position because this is the level typically targeted by social protection and microfinance interventions. We assumed that these interventions had the potential to impact household socioeconomic position and by so doing indirectly influence the exposure to three categories of TB risk factors: (a) biological risk factors, including HIV, tobacco smoking, indoor air pollution, alcoholism and diabetes; (b) food insecurity and inadequate household consumption patterns and (indirectly) malnutrition; and (c) inappropriate health-seeking behaviours (specifically the inadequate access to TB care services) (figure 3.1).

## Figure 3.1 Causal pathway linking household socioeconomic position and tuberculosis risk factors



# 4. Review methods

## 4.1 Outcomes of interest

The outcomes of interest were restricted to the following:

- TB or any surrogate outcomes for TB (for example other airborne infectious diseases);
- any risk factor in the causal pathway between household socioeconomic position and TB, as for the conceptual framework, including any health outcome that proceeds from or is correlated with TB (for example HIV, malnutrition); food insecurity; and inadequate health-seeking behaviour or limited access to health care.

## 4.2 Data collection

### 4.2.1 Search strategy

The multidisciplinary nature of the review required the adoption of a comprehensive search strategy in different areas, utilizing a wide range of electronic databases and websites (figure 4.1).

**Figure 4.1 Search strategy**

| | | Queries launched through electronic databases | |
|---|---|---|---|
| Electronic data bases | Biomedical:<br>EMBASE<br>MEDLINE<br>Global Health<br>HMIC<br>EPPI<br>DoPHER<br>TRoPHI<br><br>Social sciences:<br>Social Policy & Practice | Socioeconomic interventions | (Socioeconomic OR Social OR Economic OR Complex OR Structural)<br>AND<br>(Programme OR Program OR Project OR Intervention OR Prevention)<br>AND<br>(Evaluation OR Impact) |
| | | Social protection/ livelihood strengthening | (Microcredit OR Microfinance OR Cash OR economic empowerment OR Income)<br>AND<br>(Poverty OR food security OR Access OR Health seeking behaviours OR TB OR Respiratory OR HIV OR Nutrition)<br>AND<br>(Reduction OR Progr * OR Project OR Prevention OR Integration)<br>AND<br>(Evaluation OR Impact) |
| Websites | http://scholar.google.com; http://www.omni.ac.uk; http://www.sosig.ac.uk; http://www.eelv.ac.uk; http://www.undp.org; www.worldbank.org; www.eldis.org; www.usaid.gov; www.dfid.gov.uk; www.ifpri.org | | |
| Grey literature and experts consultation | | | |

The evaluation of socioeconomic interventions is rare in public health. Most of these initiatives are run by nongovernmental organizations (NGOs) and results are rarely published in peer-reviewed journals, which largely explains why very little is still known about the impact of these interventions. For this reason, we aimed to expand our literature research by undertaking also the assessment of the rich information available in reports, monographs, white papers and other manuscripts from groups and institutions that are implementing projects in the field and that are often operating outside the health sector. For this purpose an extensive list of websites was also searched (figure 4.1).

Because the terminology of socioeconomic interventions is often imprecise, technical, non-medical, and constantly evolving, we first conducted a scoping search with a provisional set of text word terms. Then we refined the search strategy by adding indexed terms and text words suggested by the studies identified in the preliminary search[29].

### 4.2.2 Inclusion/exclusion criteria

Eligible interventions had to (a) address the following outcomes of interest: TB (or other respiratory infections), household socioeconomic position or any of the postulated mediating risk factors (see figure 3.1); (b) explicitly document an impact evaluation of the microfinance or cash transfer intervention delivered; and (c) take place in low- and middle-income countries.

No time limit or language restriction was applied. Due to the complexity of the interventions considered, no study design filter was applied. This resulted in the inclusion of both experimental and observational studies with a controlled or an uncontrolled design providing retrospective or prospective evaluation of the interventions of interest.

As the review aimed essentially to assess the generalizability of cash transfer and microfinance interventions, studies conducted in specific settings (for example hospitals, prisons, workplaces, schools) or in specific population groups (for example homeless, professional categories, students, orphans) were not included.

We considered the "best references" to be those containing detailed description of the intervention undertaken, in particular how the intervention was implemented (designed and delivered) and which factors were more likely to affect the intervention implementation and any of the impacts observed (including null findings).

## 4.3 References appraisal

### 4.3.1 References classification

References gathered from the literature were first filtered by screening titles and abstracts. The references judged of interest underwent an initial appraisal, allowing a preliminary description of the study retrieved. Data of interest were extracted using a form adapted from Zaza and colleagues, including two sections[30]:

- a classification section, including the information needed to classify the study in terms of type of intervention and health outcome reported;
- a description section, including information useful to identify the main methodological aspects of the study and the main health indicators evaluated.

The data so extracted were used to generate a synopsis table summarizing the interventions included in the review.

### 4.3.2 Content assessment

After the above classification, references went through a more thorough appraisal of their content. For this purpose we initially developed a checklist allowing the assessment of the key features of the studies. Rather than using a single standard tool, this list was compiled combining quality appraisal questions from different sources[30–32] and a 12-question checklist developed by the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) of the Social Science Research Unit at the Institute of Education, University of London.[i]

The checklist included 20 questions grouped into three themes:

- Intervention implementation: this section was aimed to characterize how the intervention was designed and delivered.

i Available at http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=2370&language=en-US.

- Impact evaluation: this section explored the main methodological features of the impact evaluation and the key results achieved, including their robustness and the methodological aspects that may have affected them.

- Strength and limitations: this section collected any reflection on the strengths and weaknesses of the interventions and the potential for improvement, especially in the light of employing these interventions for TB control.

### 4.3.3 Evidence synthesis

Due to the diversity in the included studies (in terms of setting, interventions and outcomes measured), a "narrative synthesis" was considered more appropriate than a quantitative or statistical approach in order to summarize the impact evidence. The defining characteristic of a narrative synthesis is the adoption of a textual approach that provides an analysis of the relationship between and within studies and an overall assessment of the robustness of the evidence[33,34].

## 4.4 Interventions included

Approximately 150 documents of potential interest were appraised. Overall, we identified 28 cash transfer interventions (from 19 different countries) for which a proper impact evaluation was undertaken. Of these, 22 were conditional cash transfer programmes and six were unconditional.

Thirteen programmes were excluded either because they were merged into bigger programmes (for example Bolsa Escola, Bolsa Alimentação and PETI in Brazil), they exclusively addressed educational achievement (for example SCAE Bogota in Colombia, ROSC in Bangladesh, PESRP in Pakistan, CESSP and JFRP in Cambodia and JPS in Indonesia), the available data were limited (for example SRMP in Turkey), or because they were unconventional cash transfer schemes (for example Chile Solidario in Chile or FACT in Malawi).

Overall, 15 cash transfer interventions are included in this review, 11 of which are conditional, three are unconditional and one (from Ethiopia) combines conditional and unconditional components[35,36]. The three unconditional cash transfer interventions are all from African countries, namely Zambia (37) and Malawi[26,38]. Seven of the 11 remaining conditional cash transfer interventions are from the Latin America and the Caribbean region, one is from Africa (Malawi), and three are from South-East Asia (Bangladesh, India and Nepal).

Following from the inclusion criteria, seven microfinance programmes from five countries were included in this section of the review. Most of the information on the impact of microfinance on poverty was gathered from a recent review[39].

An overview of the programmes included in the review is presented in table 4.1. With the exception of two microfinance interventions in Cambodia[40] and South Africa[41], none of the interventions we reviewed targeted individuals with any kind of health conditions.

Both for microfinance and cash transfer interventions, the selection of the target population was based mainly on socioeconomic criteria, the specificity of which varied depending on the intervention objectives and resources available. Virtually all conditional cash programmes from Latin America required enrolment of children in school, attendance at nutritional education sessions, and health care uptake for children (under 5 years of age) and pregnant or lactating women; adult health conditionalities were less common and included generic health care[42,43], in-facility medically attended delivery[44,45], and HIV testing and results recollection[46].

Apart from the Dowa Emergency Cash Transfer Project in Malawi[26], cash transfer schemes all employed complex impact evaluation designs, including community randomized trials and quasi-experimental studies. Cross-sectional surveys were more commonly employed in microfinance interventions. The impact data refer to a follow-up period of between one and three years of observation in most interventions. Only in the microfinance intervention in Cambodia was the impact of the intervention measured against TB indicators[40].

## Table 4.1 Main features of the interventions included in the review

| Intervention/country | Institution | | Objectives[1] | | | | Targeting[2] | | Target population[3] | | | Conditionality[4] | | | Benefit[5] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GOV | NGO | ↑LC | ↑EDU | ↑HEALTH | OTH | Poor-C | Poor-H | CHI | MOTH | ADU | EDU | HEALTH | OTH | CASH | TR | OTH |
| **CASH TRANSFER** | | | | | | | | | | | | | | | | | |
| PROGRESA/Mexico | • | | | • | • | | • | • | • | • | • | • | • | | • | | • |
| PRAF/Honduras | • | | | • | • | | • | | • | • | | • | • | | • | | |
| RPS/Nicaragua | • | • | • | • | • | | • | | • | • | | • | • | • | • | | • |
| PFA/Colombia | • | | • | • | • | | • | • | • | • | | • | • | • | • | | |
| BF/Brazil | • | | • | | | • | | • | • | • | | • | • | • | • | | |
| BDH/Ecuador | • | | • | | • | | | • | • | | | | • | | • | | |
| PATH/Jamaica | • | • | • | • | • | | | • | • | • | • | • | • | | • | | |
| SCT/Zambia | • | • | • | | • | | | • | | | • | UCT[6] | UCT | UCT | • | | |
| HIV/Malawi | | • | | | • | • | | NA[7] | | | • | | • | • | • | | |
| DECT/Malawi | | • | | | | • | | • | | | • | UCT | UCT | UCT | • | | |
| MCHINJI/Malawi | • | • | • | • | | | | • | | | • | UCT | UCT | UCT | • | | |
| PSNP/Ethiopia | • | | • | | | | | • | | | • | | | • | • | | |
| RMP/Bangladesh | • | • | • | | | • | | • | | | • | | | • | • | • | |
| JSY/India | • | | | | • | | • | • | | • | | | • | | • | | |
| SDIP/Nepal | • | | | | • | | | • | | • | • | | • | | • | | |
| **MICROFINANCE** | | | | | | | | | | | | | | | | | |
| RDP/ICDDR,B/Bangladesh | | • | • | | • | | | • | | | • | | | | • | • | • |
| IGVGD/Bangladesh | | • | • | | | | | • | | | • | | | | • | • | |
| CFPR/TUP/Bangladesh | | • | • | | • | | | • | | | • | | | | • | • | • |
| SHG/India | | • | | | • | | | • | | | • | | | | • | • | |
| CHC/Cambodia | • | • | | | • | | | • | | | • | | | | • | | • |
| WISDOM/Ethiopia | | • | • | | | • | | • | | | • | | | | • | | • |
| IMAGE/South Africa | | • | | | • | | | • | | | • | | | | • | • | • |

1. ↑LC = improve living conditions; ↑EDU = improve children's level of education; ↑HEALTH = improve health in the target population. JSY/India aimed specifically to improve maternal health by increasing the number of births in health facilities and the number of births attended by skilled staff[44]; SDIP/Nepal aimed specifically to reduce maternal mortality and morbidity and to reduce poverty by preventing deaths and disability and by mitigating the costs of delivery care[45]; CHC/Cambodia aimed to improve TB care by increasing case detection rate and TB treatment rate and reducing diagnosis delay[40]. OTH = other, including linking people to complementary social protection services as in BF/Brazil[54], generating information on feasibility, costs and benefits of a social cash transfer scheme as in SCT/Zambia[37], increasing HIV testing, HIV status awareness and condom purchase and use as a consequence of that as in HIV/Malawi[46], providing missing food entitlement to households affected by severe food insecurity as in DECT/Malawi[26], and empowering women and maintaining rural infrastructure as in RMP/Bangladesh[75].Adapted with kind permission from: Lasting Benefits: the role of cash transfers in tackling child mortality. London, The Save the Children Fund, 2009.

2. Poor-C = geographical targeting based on poor communities; Poor-H = household targeting based on household socioeconomic characteristics. In Zambia household targeting was not based on HIV; households had to be destitute, or have no household member able to work either because no one was of working age or the main breadwinner was sick or dead, or presented a high dependency ratio[37]. The HIV/Malawi intervention targeted only households with ever-married women and their husbands; DECT/Malawi targeted households living in districts identified through the Famine Early Warning System Network as most affected by prolonged dry spells and crop losses[26]; PSNP/Ethiopia targeted "predictably food insecure households", that is, those who faced chronic food deficits, or had experienced shocks leading to severe assets losses; in JSY/India community targeting was based on the incidence of in-facility birth coverage[44].

3. CHI = children; MOTH = pregnant or lactating women; ADU = adults. In PATH/Jamaica the adult population included elderly poor (aged 65+) and poor, disabled and destitute adults under the age of 65[43]; in RMP/Bangladesh the adult population included destitute women who were divorced, widowed or abandoned, were head of the households between 18 and 35 years of age and were mentally and physically fit to do road maintenance work[75]; in SDIP/Nepal trained health care workers received cash for each delivery attended either at eligible facilities or at home[45]; in IGVGD/Bangladesh the target population included widows or abandoned women[74].

4. EDU = compulsory school enrolment and/or school performance and graduation achievement; H = health check-ups for adults and/or antenatal and perinatal checks for women, growth monitoring checks and/or vaccination for children, and HIV testing[24, 46]; OTH = other, including attendance of health and nutrition education workshops as in Nicaragua, Colombia, Brazil and Mexico[48, 49, 54, 86], the recollection of HIV testing results as in Malawi[46], the provision of intensive labour for community projects as in PSNP/Ethiopia[35], and the provision of rural roads maintenance and the saving of a certain amount of money per day as in RMP/Bangladesh[53, 75].

5. CASH = cash for the cash transfer interventions and loans for the microfinance interventions; TR = vocational training for income-generating activities and/or legal, economic and saving advices; OTH = other, including macronutrient and micronutrient supplementation as in CHC/Cambodia, RPS/Nicaragua, IGVGD/Bangladesh and PROGRESA/Mexico[40, 48, 74, 86], loans for housing improvement as in RDP/ICDRR,B[64], health care support, education and counselling as in CFPR/TUP/Bangladesh[75], CHC/Cambodia[40] and IMAGE/South Africa[41], and the free installation of latrines and tubewells as in CFPR/TUP/Bangladesh[75].

6. UCT = Unconditional cash transfer.

7. NA = Not applicable. In Malawi they did not target households based on socioeconomic criteria, but on the presence of ever-married women and their husbands.

# 5. Analysis of the impact findings

## 5.1 Impact on household socioeconomic position and poverty level

### 5.1.1 Cash transfer interventions

**Expenditure, income, asset ownership**

Only seven of the 15 interventions included in this review conducted a proper evaluation of the short-term impact of the intervention on household socioeconomic position and poverty level. In the cases of Brazil, Ecuador and Honduras, evidence was derived from secondary analyses conducted by the World Bank[19] (table 5.1).

In Mexico, mean consumption levels one year after the implementation of the Programa de Educación, Salud y Alimentación[i] (PROGRESA) were approximately 13% higher among beneficiary communities compared to the control areas[47]. In Nicaragua, the baseline level of total annual expenditure among control and beneficiary households of the Red de Protección Social[ii] (RPS) programme only differed by US$ 19 (US$ 1594 compared to US$ 1613)[48]. After only one year of programme implementation this difference increased to US$ 341, a net average increase of US$ 322 (table 5.1). The estimated net effect of the programme on beneficiary households declined in 2002, but it remained high with a net average increase in total annual consumption at US$ 219. When the analysis was stratified by socioeconomic status, the authors found the largest observed net effect was for the extremely poor households, with an increase of over US$ 296 in 2002.

The Programa Familias en Acción[iii] (PFA) in Colombia showed evidence of a significant positive impact both on the monthly and the annual household consumption expenditure average level[49]. The increase in the monthly total household consumption expenditure was more notable among rural than urban beneficiary households (US$ 33.7 versus US$ 18.0, respectively, for rural and urban households) (table 5.1). The authors estimated that the PFA impact on total consumption equalled a 19.5% and 9.3% increase among the rural and urban households, respectively, compared to the average consumption level at baseline[50].

The Social Cash Transfer programme in Zambia significantly improved household socioeconomic position (table 5.1). Household consumption expenditure increased significantly in all three districts under study. When looking specifically at non-food items, the increase was notable only in the Kazungula district[51]. Contrastingly, the programme did not seem to have an impact on household income, probably due to the fact that the intervention implementation was accompanied by a considerable decrease in external cash assistance by neighbours, relatives and aid organizations[52]. Asset ownership rose from about four to five assets per household on average during the first year of the scheme (table 5.1), and the average debt of the beneficiary households dropped from approximately 13 000 to 8 000 Zambian kwacha. Additionally, the number of households that needed to sell assets in order to buy food decreased by 4%. Furthermore, beneficiary households invested more: the number of households making small investments increased from 14% to 50% and the average amount invested doubled. Of the beneficiary households, 71% reported that they had invested part of the cash transfer and 52% of these households reported that these investments generated extra income[37].

i Programme for Education, Health and Nutrition.
ii Social Protection Network.
iii Families in Action Programme.

The positive impact on household socioeconomic position was equally evident in the Mchinji Social Cash Transfer programme in Malawi (table 5.1). Of the intervention households, 86.9% declared that their economic situation had improved since the programme's implementation, compared to only 4.3% of the control households. The authors observed a net increase of 15 103 Malawian kwacha in total annual household non-food expenditures among the beneficiary households. Whereas the total annual income remained virtually unchanged among control households, it increased by almost five times between baseline and the second round of data collection among beneficiary households (from 6 374 to 27 079 Malawian kwacha, $P < 0.001$). Finally, compared to control households, beneficiary households were also more likely to own every type of asset included in the household survey questionnaire (data not shown in table) and to report an improvement in housing conditions over the previous year (11.5% versus 47.3%, $P < 0.001$) (table 5.1).

Finally, in Bangladesh, households participating in the Rural Maintenance Programme also showed a significant increase in the average monthly per capita expenditure (199 taka, corresponding to an increase of 31.4%, $P < 0.0001$) compared to control households[53].

Different from the other programmes reviewed in this section, a negligible effect on household socioeconomic position was observed in Ethiopia, Ecuador and Brazil. The impact evaluation of the Productive Safety Net Programme in Ethiopia showed no effect on the per capita total expenditure, whereas the value of livestock and other assets changed significantly, but in a negative direction (table 5.1). This was explained by the fact that although treatment households experienced a positive growth in their holdings of tools and livestock, this increase was faster among the control households, resulting in an overall negative impact of the programme [35]. Likewise, the Bono de Desarrollo Humano[iv] (BDH) programme in Ecuador did not appear to have significantly improved the consumption level among the beneficiary households. The authors hypothesized that this may be attributable to the reduction in child labour among programme beneficiaries[19]. Finally, the Bolsa Família[v] programme in Brazil did not appear to have significantly affected the aggregate level of household consumption[54].

iv Human Development Grant.

v Family Allowance.

**Poverty reduction**

Impact data on poverty reduction were available from five interventions. In Nicaragua, RPS caused an average reduction in the extreme poverty rate by 22 percentage points and 16 percentage points respectively in 2001 and 2002[48]. RPS also caused a reduction in the poverty gap[vi] by 10 percentage points in 2001 and 9.8 percentage points in 2002, and reduced the severity of poverty[vii] by 11.3 percentage points and 8.7 percentage points respectively in 2001 and 2002 [7]. Similarly, thanks to PFA, in Colombia the proportion of extremely poor households decreased by approximately 6 percentage points both in the urban and the rural areas, and the poverty gap was reduced by 3.7 percentage points (data not shown in table)[7]. PROGRESA reduced the proportion of households classified as poor by 17%, the poverty gap by 30% and the severity of poverty by 45% (not reported in table)[55].

In Bangladesh, the impact analysis of the Rural Maintenance Programme revealed a 16% decrease in households living below the extreme poverty line when beneficiary and control households were compared. Nonetheless, some 50% of the participant households remained below the extreme poverty line. This may be because the range of livelihoods for those households below the extreme poverty line varied considerably, so only those close to the poverty line were able to move out of extreme poverty[53]. By contrast, the Programa de Asignación Familiar[viii] (PRAF) of Honduras had a modest impact on the poverty gap, with only a 2% reduction. According to the analysts this was probably due the relatively small magnitude of the cash transfer[56].

### 5.1.2 Microfinance interventions

Most of the data on the impact on household socioeconomic position and poverty alleviation are summarized in a relatively recent review by Goldberg[39]. The author collated and reviewed the

vi The poverty gap describes the depth of poverty in a population. It is defined as the mean distance separating the poor from the poverty line (with the non-poor having a mean distance equal to zero), and it corresponds to the amount of resources that would be required to bring the poor above the poverty line.

vii The severity of poverty is a different measure of the poverty gap that takes into account inequality. In the poverty severity analysis, the extremely poor (those far from the poverty line) are weighted more than the less poor.

viii Family Allowance Programme.

most significant microfinance impact evaluations that had been published as of mid-2005. Approximately 100 documents were included in that review for a total of 27 microfinance programmes, including some of those that have been appraised for the present review (such as the BRAC programmes).

Table 5.2 summarizes the impact of microfinance programmes included in Goldberg's review on the indicators of household socioeconomic position, including income and expenditure, poverty levels and asset ownership. Results are presented along with the evaluation design and comparison group, so that the reader can judge the strengths and limitations of the results achieved. Whenever appropriate, additional results from programmes included in this review, but not mentioned by Goldberg, are reported in the text.

The vast majority of impact evaluations showed a significant effect on household income and expenditure. Of all the studies included in Goldberg's review, only the study from Mali failed to demonstrate a positive effect on income, probably due the small sample size (only 30 clients in each comparison group)[39]. The impact evaluation in Peru showed that even if the naïve comparison (that using non-clients as a comparison) overestimates the effect of microfinance on household income, by using the correct comparison (households that have shown interest in microfinance but have not yet been enrolled) it is still possible to detect a significant effect of microcredit (in this case amounting to an increase of US$ 89 per month)[39]. The study included in this review of the Intervention with Microfinance for AIDS and Gender Equity (IMAGE) in South Africa did show that intervention households were more likely to spend over d 200 South African rands on food and clothes per capita compared to control households (65% versus 54%, respectively). However, this difference was not statistically significant (adjusted risk ratio (ARR) = 1.23, 95% confidence interval (CI) = 0.47–3.20)[41].

In terms of poverty level, available data showed that microfinance interventions had the capacity to induce a significant decline in poverty (for example, up to 40% for moderate poverty in Bangladesh). The Challenge the Frontiers of Poverty Reduction/ Targeting the Ultra Poor (CFPR/TUP) programme included in this review, but not appraised by Goldberg, confirms this observation. Through the use of conventional poverty lines, the authors demonstrated that CFPR/TUP caused a net decline in extreme poverty by 30% among programme participants (selected ultra poor) compared to only a 13% decline observed for the non-participants (non-selected ultra poor)[57].

Data suggest that poverty reduction often translates into an upgrade of household socioeconomic position. For example, approximately 80% of the clients of SHARE Microfin Ltd in India were upgraded by at least one category in the poverty classification scale[39]. The same observation was made by BRAC in the impact evaluation of its Rural Development Programme[58]: 25% and 21% of the BRAC households who were extremely poor at baseline were able to move beyond the poverty line by the second and the third year of observation, respectively. At the same time, 49% and 25% shifted to the category of moderately poor. Data also showed that the Rural Development Programme was able to slow the downward mobility of non-poor households towards extreme poverty: only 8.8% of the non-poor BRAC households became extremely poor compared to 27% of the non-poor comparison households[58]. It is interesting to note that in Bangladesh microcredit showed a positive effect on poverty reduction even among non-participants, probably due to the indirect effect of the increased economic activities occurring in the participating villages[39].

Goldberg's review concluded that microcredit clients tend to own more durable assets and tend to have more savings compared to non-clients. The only exception to this was demonstrated by the study of the Rural Friends Association and the Foundation for Integrated Agricultural Management conducted in Thailand; however, there may have been no impact on assets and savings because of the small amount of loans provided[39]. An increase in ownership of durable assets was also documented in the CFPR/TUP evaluation[57], in which the authors demonstrated a significant improvement in housing quality (measured in terms of roof estimated value). Furthermore, programme participants were found to invest significantly larger resources in latrines and making changes to their homestead[57]. The IMAGE study in South Africa observed an increase in the estimated values of selected assets among the intervention households compared to the control households (ARR = 1.1, 95% CI = 1.04–1.28), but this difference was not statistically significant[41].

## 5.2 Impact on household food security, food consumption patterns and nutrition

### 5.2.1 Cash transfer interventions

Nine of the 15 interventions included in this review conducted a proper evaluation of the short-term impact of the intervention on food security and food consumption indicators (table 5.3). To assist clarity, impact results have been divided into three different categories.

#### Food expenditure and consumption

After one year of PROGRESA, households receiving cash transfers showed a 2% increase in the median value of food consumed per person compared to households that did not receive cash transfers. This percentage rose to approximately 11% in 1999 and was much higher among the households in the 25th lowest socioeconomic score percentile compared to the households in the highest socioeconomic percentile (13.5% versus 5.1%)[47].

Among RPS recipients in Nicaragua, additional expenditure was predominantly on food: the net average increase for annual per capita expenditure on food was equal to US$ 78 in 2001 and US$ 50 in 2002. RPS produced a significant net increase in the food share, respectively equal to 4.7% and 4.5% in 2001 and 2002, with no notable variation across socioeconomic groups[48].

In Colombia, the PFA programme resulted in a significant increase in monthly household food consumption[49]. As for the total household consumption, the food expenditure increase was greater among rural compared to urban beneficiary households (US$ 27.0 versus US$ 15.5, respectively, for rural and urban households)[50]. Different from Mexico and Nicaragua, in Colombia the increase in food consumption expenditure did not produce a significant increase in the food share (the proportion of resources spent on food). This is probably due to the fact that the food share was already high at baseline (72% on average)[50]. In Brazil, the implementation of Bolsa Família was associated with an increase in monthly food expenditure of 23.2 Brazilian reals[54]. A significantly higher food share was also observed among BDH beneficiaries in Ecuador compared to the control households (approximately 4% higher, data not shown in table), suggesting that although overall consumption levels had not increased, the programme resulted in a larger proportion of food consumed[56]. The authors' explanation for this was that BDH caused an increase in the bargaining power of women in households, allowing them to influence household expenditure patterns[56].

Results from the three social cash transfers in Zambia and Malawi showed a consistent positive impact on household food expenditures. In the Zambian Social Cash Transfer programme, the percentage of household food expenditures increased to almost 60% in Kazungula district and 5% in Kalomo, whereas no significant effect was observed in Chipata[51]. Although not supported by data from a control group, descriptive analysis of the Dowa Emergency Cash Transfer Project in Malawi showed that over the five-month period of intervention implementation, on average 64% of the cash transfer was spent on food. The share of food expenditure reached 70–80% during the first two months of the project, but it declined steadily thereafter, reflecting a real and unexpected decline in the price of maize over this period, rather than a lower investment in food[26].

At baseline, households in the Mchinji Social Cash Transfer programme reported higher food expenditure compared to control households (645 versus 460 Malawian kwacha, respectively). This difference further increased by the third round of data collection (3310 versus 369 Malawian kwacha, respectively, for the intervention and the control households), yielding an overall net increase in household monthly food expenditure among the intervention households equal to 3,125 Malawian kwacha between March 2007 and April 2008 (38).

A preliminary evaluation of the Productive Safety Net Programme in Ethiopia revealed that almost all beneficiaries used up to 80% of their cash to buy staple food[36]; however, such a high increase in household food share did not translate to a significant net increase in per capita food expenditure among beneficiary households[35]. On the other hand, in Bangladesh, participants in the Rural Maintenance Programme showed a significant increase in per capita food expenditure (113 taka, $P < 0.001$) compared to the control households.

#### Food quantity intake

The increase in food expenditure was almost consistently accompanied by an increase in the quantity of food consumed. After only

one year of programme activities, the median caloric acquisition per person per day had risen by 7.8% among PROGRESA beneficiaries compared to non-beneficiaries[47]. This increase was not confounded by individual, household or community characteristics, nor by food availability or price. In Bangladesh, beneficiary households of the Rural Maintenance Programme appeared to consume on average 271 more kilocalories per person per day compared to the matched controls ($P < 0.001$)[53]. No effect on caloric intake was detected among beneficiary households of the Productive Safety Net Programme in Ethiopia[35].

All three social cash transfer programmes in Africa documented an increase in the quantity of food intake among the intervention beneficiaries. For instance, over the first 12 months of intervention implementation, 93% of the intervention households of the Mchinji Social Cash Transfer programme reported an increase in food intake compared to only 11% of control households[38].

In the social cash transfer interventions, the food intake increase was often measured in terms of number of meals per day. In the Zambia Social Cash Transfer programme, the proportion of households eating one meal a day dropped from 19% to 13%[37]. Among beneficiaries of the Dowa Emergency Cash Transfer Project in Malawi, the average number of meals per day rose from 1.5 to 2.4[26]. Finally, 44% of the Mchinji intervention households reported having three meals per day compared to only 8% of the control households ($P < 0.001$)[38].

Both the Social Cash Transfer programme in Zambia and the Mchinji programme in Malawi documented a significant decrease in the proportion of households still hungry after a meal. In Zambia the proportion of intervention households still hungry after a meal dropped from 56% to 34%[37]. In Malawi the proportion of intervention households still hungry after a meal was 7.5% compared to 37% for the control households[38].

In terms of food security, the Mchinji impact evaluation revealed a significant reduction in the number of days without enough to eat in the month previous to the interview experienced by the intervention households compared to controls (1.2 versus 5.2 respectively, $P < 0.001$), and a significantly higher proportion of intervention households reported to have food storage compared to the control households (88% versus 57% respectively, $P < 0.001$)[38]. By contrast, no difference was documented between intervention and control households in Ethiopia for both the food security measures used[35].

### Food quality and diversity

In Mexico the increase in food consumption observed among PROGRESA beneficiaries involved mainly fruit and vegetables and animal products[47]. After one year of intervention, the median monthly consumption of fruit and vegetables among beneficiary households was 16.7% higher than for the control group. In 1999 the average monthly consumption of animal products by beneficiary households was 30% higher compared to the control group, and nearly double the amount consumed at baseline in 1998 (15.4%)[47].

In Nicaragua, the RPS intervention had a significant effect on dietary diversity. Among the intervention beneficiaries, not only did the types of food items purchased increase, but also their nutritional value. Better-quality food items (such as meat and fruit and vegetables) increased both in terms of absolute expenditure and as a percentage of food share. As for the other outcomes, this effect was more marked among the extremely poor[48].

As in Mexico and in Nicaragua, in Colombia (PFA) the increase in food consumption was concentrated in proteins, for which the authors found an increase of about 21 000 Colombian pesos (equivalent to approximately US$ 9 per person) spent on proteins both in the urban and rural areas. They also observed a significant, although less evident, increase in the consumption of oils and fats in all areas[50].

A significant increase in the proportion of households consuming food items containing fats and proteins was also observed in Zambia and Malawi (table 5.3). In Zambia this proportion rose from 17.8% to 48.2%, and the average fats consumption rose from 0.7 days a week to almost 2 days a week among beneficiary households[52]. Similarly, in Malawi beneficiary households under the Mchinji programme reported on average 2.1 meals per week containing protein compared to only 0.3 meals per week among the control households[38]. After the first months of implementation of the Dowa Emergency Cash Transfer Project, the number of food groups went from 2.5 on average for both male- and female-

headed households to respectively 4.0 and 3.6 (26). Nonetheless, the highest increase in food diversity coincided with the lowest level of food expenditure among project participants, making it difficult to draw conclusions on the meaning of these results and whether the intervention was actually responsible for this increase[26]. An increase in the average number of food groups was also documented in the Mchinji interventions, corresponding to a net increase of three food groups consumed among the intervention beneficiaries[38].

### 5.2.2 Microfinance interventions

Only three of the seven microfinance programmes included in this review provide impact data on food consumption patterns and food security. Additional scattered data were retrieved from the review of Goldberg[39]. Results have been summarized by programme in table 5.4.

#### Food security

With the exception of the IMAGE study, none of the results reported in the table appeared to be controlled for any confounding factor. While the IMAGE study in South Africa did seem to have only a small effect on the food security of study participants, the CFPR/TUP intervention in Bangladesh detected a significant increase in food security as a result of the intervention implementation.

In Bangladesh, the proportion of households reporting severe food shortage (that is, spending a whole day without anything to eat) decreased among both the intervention and the control groups, but the decrease was more evident among the intervention beneficiaries (62.1% versus 14.9% respectively for 2002 and 2004). Chronic food deficit also decreased in both the intervention and the control groups, but again this decline was more conspicuous among the intervention group (from over 60% in 2002 to approximately 20% in 2005)[57]. Similarly, in Mali, compared to incoming clients, current clients were significantly less likely to have experienced periods of acute food insecurity in the previous year (10¬–12% versus 29% respectively for current clients and incoming clients). In addition, the length of these periods was significantly shorter[39].

#### Food expenditure

The CFPR/TUP intervention resulted in a significant increase in the per capita expenditure for food among the intervention beneficiaries between 2002 and 2004 (from 8.7 taka to 13.5 taka, $P < 0.001$), whereas no increase was observed among the non-beneficiary households in the same period (8.9 taka and 9.9 taka respectively, $P = 0.08$)[59]. Because in Bangladesh 14.2 taka per capita food expenditure is also the cut-off point that identifies the poverty line in the country, the author concluded that for some beneficiary households the increase in food expenditure crossed them over the poverty line[59]. Evidence of an impact on food expenditure was also suggested by the IMAGE study, even though the association was not statistically significant (ARR = 1.2, 95% CI = 0.5–3.2)[41]. A significant increase in food per capita expenditure was also detected in one of the impact evaluations of the Grameen Bank, where an 8% and 35% increase was observed compared to the two comparison groups[39]. As for all the other outcomes explored, Wisdom (Ethiopia) did not observe any significant change in household food expenditure: approximately 60% of respondent in three comparison groups reported an increase in household food expenditure ($P = 0.7$)[60] (table 5.4).

#### Food quantity

CFPR/TUP registered a significant increase in the quantity of food consumed both in terms of per capita grams of food and daily kilocalories consumed by the intervention group (selected ultra poor) compared to the control group (non-selected ultra poor)[59,61]. The per capita mean quantity of food consumption increased from approximately 700 grams in 2002 to more than 1000 grams in 2004 among the intervention households, whereas there was no observable increase in the control group (approximately 700 grams in both the baseline and follow-up survey)[61]. Between 2002 and 2004 daily per capita energy consumption increased by 22% among the intervention households (1750 versus 2138 kilocalories respectively in 2002 and 2004), whereas it remained substantially unchanged in the control group (1760 versus 1787 kilocalories respectively for years 2002 and 2004). In contrast to the programme in Bangladesh, Wisdom in Ethiopia could not detect any significant increase in the amount of food consumed between the established clients and the comparison groups (average number of meals per day = 2.8 across all the three groups)[60].

#### Food quality

In Bangladesh (CFPR/TUP) the amount of food intake of animal origin increased by approximately four times among intervention beneficiaries,

whereas this increase was only modest in the control group. In the Wisdom impact evaluation a significant change in food quality was observed only among established clients in the Sodo area (the more drought-affected and food-insecure of the two sites under study), whereas no effect was observed in the overall sample[60].

## 5.3 Impact on health care access and health-seeking behaviours

### 5.3.1 Cash transfer interventions

The effect of cash transfer interventions on health care access and health-seeking behaviours was available for 10 of the 15 interventions included in this review. Of them, eight were conditional and only two were unconditional. Results are summarized in table 5.5.

PROGRESA in Mexico resulted in about 2.09 more visits per day in the treatment communities compared to the controls, or about 18.2% more visits (not in table) in the health care centres in the intervention areas compared to the non-intervention areas[42]. The analysis was further stratified by the age group of beneficiaries and by health care provider (public clinic visits, public hospital visits and private provider visits). The authors found that overall, PROGRESA increased health care utilization in both adult groups considered (18–50 and over 51 years). Similarly, the study reported a large reduction in access to private providers and hospitalization.

In a subanalysis conducted on 892 women, authors found that beneficiary poor women consistently reported significantly greater quality of antenatal care received compared to non-beneficiaries (overall quality score 78 versus 72 respectively, $P < 0.001$), and 12% more procedures ($P < 0.001$)[62].

The PROGRESA intervention in Mexico is the only study documenting the improvement in health status of adults. This is most likely due to the fact that adults were required to attend at least one health care visit per year and because 70% of the income transfer was used to increase food availability in the household in terms of both quantity and quality (that is, richer in proteins and micronutrients)[42]. Among the age group 18–50 a significant reduction in the number of days of difficulty with daily activities due to illness (12% fewer days of difficulty) was observed. Among those aged 51 and over, PROGRESA beneficiaries showed 20% fewer days of difficulty with daily activities, 18% fewer days incapacitated and 17% fewer days in bed[42].

In Honduras, PRAF had a marked impact on the three main indicators of health care service use[63]: as shown in table 5.5, both the cash package and the combined package (cash plus service supply) produced approximately an 18% increase in antenatal care utilization. These interventions also caused a significant increase in the proportion of children taken to a health care centre at least once in the previous month (20% and 15% for the G1 and G3 groups respectively compared to the control group). The service supply package (G2) was not associated with any significant increase in the three indicators. None of the three intervention strategies adopted (G1, G2 or G3) had a significant impact on the proportion of women reporting a 10-day postpartum check-up[63].

In Nicaragua, RPS produced a significant increase (16%) in the proportion of children younger than 3 years taken to health care centres for a well-child visit in the previous six months in 2001, but this decreased to only an 8% increase in 2002. This trend was largely due to the continued improvement of children taken for well-child visits in the control group[48]. In 2001, the increase of health care access was much more evident among the poor and the extremely poor than among the non-poor (respectively 21%, 18% and 7%) (data not shown in table). Data also showed that between 2000 and 2002 the frequency of taking children for growth monitoring checks increased by 15.2% among the control households and by 28.2% among the intervention households, corresponding to a 13% net impact by double difference estimation[48]. One particular aspect of the Nicaraguan programme was the approach to health care supply in which services were provided by government-contracted NGOs rather than directly by the Ministry of Health, showing that this approach can be an effective delivery mechanism[48].

Thanks to PFA, the percentage of Colombian children aged less than 24 months with an up-to-date schedule of preventive health care visits increased from 17% to 40% ($P < 0.05$)[49]. A large impact was also observed for children between 24 and 48 months, with the percentage rising from 34% to 67% ($P < 0.05$). For older children

the impact was smaller, probably because these children require preventive health care visits much less often than younger children[49].

In Jamaica, after controlling for application date, the eligibility score (to account for differences among the comparison groups), the value of the variable at the baseline, and other household sociodemographic variables, children from households participating in the Programme of Advancement through Health and Education (PATH) attended a significantly higher number of preventive health care visits compared to children from the control households (1.01 versus 0.73 visits respectively)[43]. The number of visits per six-month period was estimated to be 0.28 visits, accounting for a 38 percentage point increase from baseline. Contrastingly, the increase in health care access among the elderly was not significant (less than 1% increase)[43]. The authors attributed this to the fact that PATH did not enforce sanctions for elderly people who did not comply with the health requirements[43].

Unexpectedly, the percentage of household expenditure on health diminished among the beneficiaries of the Social Cash Transfer programme in Zambia (from 3.4% to 1.2%). In contrast, the Mchinji Social Cash Transfer programme in Malawi showed the proportion of households that reported spending nothing on health care for each adult sickness to be significantly lower among beneficiary households compared to controls (25.3% versus 63%, $P < 0.001$). Adults belonging to Mchinji beneficiary households were also significantly more likely to seek medical care compared to adults from control households (84% versus 10%, $P < 0.001$)[38].

The only conditional cash transfer from a sub-Saharan country (Malawi) included in this review showed that the frequency of HIV testing increased by 27 percentage points, whereas the likelihood of attendance at voluntary counselling and testing (VCT) centres to collect HIV results was twice as high among those receiving any positive voucher compared to those not receiving any cash, a difference of 43 percentage points. Moreover, there was a 9.1% increase in attendance for each additional dollar of incentive. In the study there was some evidence of interaction between distance from VCT centre and monetary incentive: for those living over 1.5 kilometres from the VCT centre, receiving an incentive increased attendance by 3.7 percentage points; however, the study also shows that there was a limit to the distance individuals were willing to travel regardless of the incentives offered[46].

In India, the Janani Suraksha Yojana (JSY) implementation resulted in a significant increase in the proportion of women having at least three antenatal care visits (approximately 11%), giving birth in a health facility (ranging from 43% to 49% depending on the impact evaluation method used) and having a skilled attendant present at the time of delivery (ranging from 36% to 39%)[44].

Similar results were observed in Nepal, where women exposed to the Safe Delivery Incentive Programme (SDIP) were 24% more likely to deliver in government institutions, 13% more likely to have a skilled attendant at delivery and 5% less likely to give birth at home[45]. When stratifying the analysis by wealth quintiles, results showed that the impact of SDIP was more evident among the lowest and middle quintile groups. Results from the time series analysis suggest that at the national level the programme had a strong and rapid positive impact on the utilization of attendance of health workers at home and the utilization of institutional deliveries in government health facilities. However, for the utilization of institutional deliveries in governmental health facilities, the long-term effect seemed negative, suggesting that in just over three years the effect of SDIP could be reversed. Besides the inconsistent effect over time, SDIP did not manage to act as a safety net against the effect of impoverishment due to delivery care payments. Data showed that despite the cash incentive, 1.9% of the households surveyed were pushed into poverty as a result of delivery care payment. The inability of SDIP to mitigate the catastrophic costs of delivery care was attributed to the probably inadequate size of the cash transfer (which in some areas did not even cover 20% of the out-of-pocket household expenditure on delivery care)[45].

### 5.3.2 Microfinance interventions

As for the patterns of food consumption and nutrition, evidence on the impact of microfinance on health care access and health-seeking behaviours comes from a limited number of studies (table 5.6).

In Bangladesh the evaluation of the BRAC Rural Development Programme (through the International Centre for Diarrhoeal Disease

Research, Matlab, Bangladesh) showed a dramatic change in the health-seeking patterns among the study participants in a direction that can hardly be explained by the exposure to an integrated socioeconomic intervention: while in 1995 less than a quarter of the Rural Development Programme beneficiaries declared self-care as the main health care strategy used, this proportion rose to 55% in 1999. This increase occurred in parallel with a decline in consultation of both traditional and formal medical care practitioners (including paraprofessional and qualified and unqualified allopaths)[64].

The impact evaluation revealed that such a pervasive decline in the use of formal medical care was observed across all the comparison groups and regardless of illness type (including fever, gastrointestinal disorders and aches and pains of all types)[64].

Equally less intuitive results were found when authors investigated the determinants of formal medical care sought in 1995 and 1999. Against the authors' hypotheses, in 1995 sick individuals belonging to BRAC households were significantly less likely than poor non-BRAC household members and non-poor household members to utilize formal medical care (odds ratio (OR) = 0.67, 95% CI = 0.4–0.9, $P < 0.001$)[64]. However, this changed in 1999. Non-poor households were significantly more likely to use formal medical care compared to the other groups (OR = 1.5, 95% CI = 1.1–1.8), while BRAC households were neither more nor less likely to use formal medical care than poor non-members[64].

Opposite results were observed in another intervention of BRAC, the CFPR/TUP[65,66]. During the study period the intervention group showed a 7% decrease and a 4% increase respectively in the use of self-care and the use of paraprofessional and professional allopaths. This increase reaches 9.2% when paraprofessional and professional allopaths were grouped together[65]. The intervention also contributed to an increase in the health care expenditure capacity of the intervention households. There was a net 11% increase (95% CI = 5.8–16.6) in the proportion of intervention households able to spend more than 25 taka per ill person[65]. Although the intervention was specifically targeting women, the authors found that the odds of spending more than 25 taka per ill person increased if the ill person or the head of the household was a male (OR = 1.5, 95% CI 1.3–1.7; and OR = 1.4, 95% CI = 1.2–1.6, respectively)[65]. The strongest determinants of formal medical care use were the level of health expenditure and the time of assessment (that is, before or after the implementation of the programme).

In India, after controlling for women's socioeconomic characteristics and caste, self-help group participants were significantly less likely to have experienced exclusion from health care (OR = 0.6, 95% CI = 0.4–0.9; and OR = 0.6, 95% CI = 0.4–0.8, respectively, for early and late self-help group joiners) compared to the reference group (self-help group non-participants living in households without a self-help group member)[67]. Contrary to the study's hypotheses, self-help group participation did not appear to significantly change women's likelihood of exposure to health risk, among both the early and the late joiners[67].

The follow-up findings from IMAGE (South Africa) documented a significant increase in the proportion of intervention individuals that had undergone HIV voluntary counselling and testing compared to the control group[68,69].

Finally, in the Cambodia Health Committee intervention, both the community and hospital-based intervention packages proved to improve the TB outcomes explored (table 5.6). This was particularly evident for the home-based DOTS package in which the case detection rate was increased by four times compared to the national average, and the mean cure rate was brought to 99%[40]. This package performed significantly better than the hospital-based health care package, especially with regards to extrapulmonary TB case detection rates (13% versus 4% respectively, $P < 0.001$) and diagnosis delay (6 months versus 30 months respectively, $P < 0.001$)[40].

## 5.4 Impact on nutritional status and HIV

### 5.4.1 Cash transfer interventions

#### Adult nutritional status

The only two interventions reporting impact data on adult malnutrition documented a modest to no effect of the interventions on adult malnutrition. In the Mchinji Social Cash Transfer intervention (Malawi), there was no significant difference in the proportion of underweight heads of beneficiary and control households; nonetheless, compared to

the control households, this proportion was lower among the intervention households in both of the follow-up rounds of data collection (20.6% versus 24.2% for the second round and 28.8% versus 33.7% for the third round)[38]. In Bangladesh, the effect on per capita food intake did not translate to a significant difference in body mass index among Rural Maintenance Programme participants compared to the non-participants (19.4 compared to 19.1 respectively, P = 0.3), probably because the programme was conditioned on physical work[53].

### 5.4.2 Microfinance interventions

#### Adult malnutrition

The success of CFPR/TUP in increasing food consumption and food expenditure did not translate into a significant increase in the nutritional status of participant women. Using a body mass index of less than 18.5 as a criterion for poor nutritional status, almost no difference was found between intervention and control participants over the study period[66]. Overall, no effect on acute malnutrition was observed in the Wisdom evaluation (Ethiopia). Nonetheless, there was evidence to suggest that female established clients in the Sodo area were significantly less malnourished than women in the control group: the prevalence of acute malnutrition among established clients was 1.6% compared to 8.3% among controls, accounting for an OR = 3.2 (95% CI = 1.1–9.8)[60].

#### HIV

According to the IMAGE (South Africa) impact evaluation, 72% of women reporting intimate partner violence in the 12 months prior to the intervention experienced less controlling behaviour from their partners and a substantial reduction in intimate partner violence (55%). Results from the other two cohorts showed small effect for the improvement in HIV awareness and sexual behaviours and no effect on HIV incidence among the community residents of the intervention group[41]. Further analysis of the IMAGE data revealed that only the combined microfinance training intervention (IMAGE) was associated with a wider range of effects in relation to women's empowerment, reduced risk of intimate partner violence and HIV protective behaviour.

## Table 5.1 Cash transfer interventions: impact on household socioeconomic position and poverty level

| Outcome | Baseline | Follow-up | Net change | Effect adjusted for | Indirect effect |
|---|---|---|---|---|---|
| **Mexico/PROGRESA[47,55]** | | | | | |
| Median monthly value of overall consumption*/household (pesos) | Not reported | 926.0 (control)<br>1049.9 (intervention) | 13.4%NA | Household and community characteristics, food price | Reduced international migration and increased expenditure on productive activities that have the potential for generating additional income |
| | | | 17 | | |
| **Nicaragua/RPS[48]** | | | | | |
| Annual total household expenditure (US$) | 1594 (control)<br>1613 (intervention) | 2001<br>1386 (control)<br>1727 (intervention) | +322† | Sociodemographic and economic characteristics | Reduce vulnerability to shocks |
| | | 2002<br>1422 (control)<br>1660 (intervention) | +219‡ | | |
| Annual per capita expenditure (US$) | 292 (control)<br>314 (intervention) | 2001<br>249 (control)<br>348 (intervention) | +77† | | |
| | | 2002<br>263 (control)<br>339 (intervention) | | | |
| Extreme poverty rate reduction (% points) | Not reported | Not reported | –22 (2001)NA | | |
| **Colombia/PFA[49,50]** | | | | | |
| Rural monthly average total consumption/household (US$) | Not reported | 173 (control)<br>207 (intervention) | 33.7† | Demographic and socioeconomic variables | Increase in expenditures in child education and clothing expenditures |
| Urban monthly average total consumption/household (US$) | | 183 (control)<br>200 (intervention) | 18.0† | | |
| Extreme poverty reduction (% points) | | | | –5.8 (urban)NA | |
| | | | | –5.9 (rural)NA | |
| **Zambia/SCT[37,51,52]** | | | | | |
| Average number of assets owned | 4.2 | 5.2 | Not reported | Adjustment through propensity score matching | |
| Household income (% increase) | Not reported | Not reported | –1.9 (Chipata)† | | |
| | | | –1.6 (Kalomo)† | | |
| | | | –0.2 (Kazungula)NS | | |
| Consumption expenditure (% increase) | Not reported | Not reported | 0.53 (Chipata)† | | |
| | | | 0.59 (Kalomo)‡ | | |
| | | | 6.34 (Kazungula)† | | |
| Non-food expenditure (% increase) | Not reported | Not reported | 1.5 (Chipata)NS | | |
| | | | 0.94 (Kalomo)† | | |
| | | | 6.03 (Kazungula)† | | |

| Outcome | Baseline | Follow-up | Net change | Effect adjusted for | Indirect effect |
|---|---|---|---|---|---|
| **Malawi/Mchinji[38]** | | | | | |
| Improved economic situation (%) | Not reported | 86.9 (intervention)†<br>4.3 (control) | Not reported | | |
| Overall annual household non-food expenditure | Not reported | Not reported | MK 15 103† | | |
| Total annual household income (Malawian kwacha) | MK 6374 (intervention)<br>MK 3855 (control) | MK 27 079 (intervention)†<br>MK 3528 (control) | Not reported | | |
| Improved quality of housing (%) | Not reported | 47.3% (intervention)†<br>11.5% (control) | | | |
| **Ethiopia/PSNP[35]** | | | | | |
| Change in log value of livestock and tools (mean) | Not reported | 0.448 (intervention)<br>0.673 (control) | –0.225† | Household size, composition, education level, assets level before the programme, distance to markets, indicators of social networks and household vulnerability, community characteristics | |
| **Bangladesh/RMP[53]** | | | | | |
| Monthly per capita total expenditure (taka) | Not reported | 833 (treatment)<br>634 (control) | 199† | | |
| % reduction of people living below the extreme poverty line | Not reported | 47.7 (treatment)<br>63.5 (control) | –15.9† | Demographic and socioeconomic characteristics of the households and contextual factors to account for communities' differences in markets. Prices, wages, infrastructures, vulnerability to floods and administrative structures | |

[NA] = significance level not available; [NS] = not significant; † $P < 0.001$; ‡ $P < 0.05$.

* Because reported expenditure understates the "true" level of consumption, the authors found it more appropriate to base their analysis on value of consumption. The value of consumption is obtained by taking the physical units of consumption, multiplying them by the local price and then deflating this figure to November 1998.

## Table 5.2 Impact of microcredit interventions on household socioeconomic position and poverty level: results from Goldberg's review

| Country | Institution | Study[§] | Year | Design/control group | Outcome |
|---|---|---|---|---|---|
| **Income and expenditure** | | | | | |
| Bangladesh[1] | Grameen Bank | Credit for the alleviation of rural poverty: the Grameen Bank in Bangladesh | 1988 | Cross-sectional household survey comparing Grameen Bank's participants to (a) eligible non-participants in Grameen villages; and (b) target non-participants from villages not covered by the programme | Average household income 43% higher among Grameen participants than that of target non-participants in comparison villages and 28% higher than eligible non-participants' average household income in Grameen villages |
| Bangladesh[2] | Grameen Bank, BRAC and RD-12 | The impact of group-based credit programs on poor households in Bangladesh: does the gender of participants matter?* | 1998 | Household survey comparing borrowers with people in non-programme villages who would have been statistically more likely to have participated if given the choice | Every taka lent to a woman adds an additional 0.18 taka to annual household expenditure |
| Bangladesh[2] | Grameen Bank, BRAC and RD-12 | Microfinance and poverty: evidence using panel data from Bangladesh | 2005 | Longitudinal study from two or more time periods comparing borrowers with people in non-programme villages who would have been statistically more likely to have participated if given the choice | Each additional 100 taka credit to women increased total annual expenditures by more than 20 taka: 11.3 taka in food expenditures and 9.2 taka in non-food expenditures |
| Bangladesh[3] | BRAC | Linking microfinance and safety net programs to include the poorest: the case of IGVGD in Bangladesh | 2001 | Longitudinal survey and participatory appraisal exercise comparing the same sample of IGVGD members in three time periods: pre-programme (1994), post-programme (1996), and three years after the end of the programme (1999) | Increase in household monthly income from 75 taka (1994) to 717 (1996) and 415 (1999) |
| Bangladesh | ASA | Impact assessment of ASA | 1997 | Cross-sectional household survey comparing (a) newer clients (post-1996); (b) older clients (pre-1996); and (c) non-participant households | ASA older clients had an income of 15 000 taka compared to 6000 taka for non-clients |
| Pakistan | KASHF | Impact assessment of KASHF's microfinance and Karvaan Enterprise Development | 2004 | Cross-sectional household survey comparing KASHF clients with a group of non-clients selected to be similar to the clients in several sociodemographic characteristics | After one year of the programme, clients increased their average income by 31% compared to 20.3% increase among non-clients |
| Peru[4] | Mibanco | An empirical analysis of microfinance: who are the clients? | 2001 | Longitudinal household survey comparing microfinance participants with (a) households that have not been offered microfinance, but have expressed interest in joining the programme (also called the correct comparison); and (b) non-participant households that did not sign up for participating in the programme (also called the naïve comparison, not taking into account self-selection bias) | The naïve comparison overestimated the impact of microfinance; however, even in the correct comparison group, adjusted for the self-selection bias, it was possible to detect a sizeable impact from microcredit of US$ 89 per month in additional enterprise profits, even after controlling for selection bias |
| Peru[6] | Mibanco | The impact of microcredit: a case study from Peru | 2001 | Longitudinal household survey comparing new clients with (a) established clients; and (b) non-clients | New clients earned US$ 740 more per year than non-clients |

| Country | Institution | Study[5] | Year | Design/control group | Outcome |
|---|---|---|---|---|---|
| Honduras[5] | ODEF | Practitioner-led assessment: Honduras | 1998 | Cross-sectional household survey comparing current clients of ODEF with incoming clients and drop-outs | 75% monthly profit increase among programme clients compared to non-clients<br>Clients experienced significant percentage increase in both income and savings compared to non-clients over the previous year |
| Mali[5] | Kafo Jiginew | Practitioner-led impact assessment: a study in Mali | 1998 | As in Honduras | No significant impact on savings, income and profit |
| Zimbabwe[6] | Zambuko Trust | Microfinance clients and impact: an assessment of Zambuko Trust, Zimbabwe | 2001 | Longitudinal household survey comparing new microfinance clients with (a) established clients; and (b) non-clients<br>All comparison groups met the eligibility criteria for the programme | Average monthly income was significantly higher among current clients compared to drop-out clients and non-clients only in 1997, but not in 1999 |
| Uganda | FINCA, FOCCAS, PRIDE | Impact of three microfinance programs in Uganda | 2001 | Cross-sectional household survey comparing clients with non-clients | Clients from these programmes were significantly more likely than non-clients to report an increase in profit from their primary enterprise (43% vs 31%) |
| **Poverty level** | | | | | |
| Bangladesh[2] | Grameen Bank, BRAC and RD-12 | Microfinance and poverty: evidence using panel data from Bangladesh | 2005 | Longitudinal study from two or more time periods comparing borrowers with people in non-programme villages who would have been statistically more likely to have participated if given the choice | Poverty rates in all villages declined by 17 percentage points between 1991/92 and 1998/99: 18 percentage points in programme areas and 13 percentage points in non-programme areas<br>Among programme participants who were members from 1991/92, poverty declined by more than 20%. More than a half of this reduction was directly attributable to microfinance and the impact was greater for those in extreme poverty (2.2% per year) than moderate poverty (1.8% per year)<br>Microfinance also reduced poverty among non-participants (1.0% and 1.3% reduction in moderate and extreme poverty respectively) as indirect effect of the increased economic activity in the participant villages<br>Overall, microfinance accounted for 40% of the entire reduction of moderate poverty in Bangladesh |
| Bangladesh[3] | BRAC | Poverty alleviation and empowerment: the second impact assessment study of BRAC's Rural Development Programme | 1998 | Longitudinal household survey comparing programme participants with programme non-participants | 52.1% of BRAC households vs 68.6% of comparison households were found to be below the poverty line<br>27.0% of BRAC households vs 37.2% of comparison households below the extreme poverty line |

| Country | Institution | Study[§] | Year | Design/control group | Outcome |
|---|---|---|---|---|---|
| India | SHARE | Paths out of poverty: the impact of SHARE Microfin Limited in Andhra Pradesh, India | 2001 | Longitudinal household survey comparing established clients with newer clients who have not yet received any benefit from the programme | Very poor: 58% of new clients compared to 6% of the older clients<br>Moderately poor: 39% of new clients compared to 58% of older clients<br>Not poor: 4% of the new clients compared to 37% among older clients<br>78.6% of SHARE clients have been upgraded at least one category in the poverty classification scale (i.e. very poor, moderately poor, not poor)<br>38.4% of SHARE clients jumped from moderately poor and very poor to the non-poor category<br>1.6% of SHARE clients experienced a deterioration of their poverty status |
| Pakistan | KASHF | Impact assessment of KASHF's microfinance and Karvaan Enterprise Development | 2004 | Cross-sectional household survey comparing KASHF clients with a group of non-clients similar in several sociodemographic characteristics | Proportion of KASHF households living below the poverty line 35.5% (2003) vs 55.6% (2002)<br>Proportion of non-client households below the poverty line did not change over time (51% both for year 2002 and 2003) |
| **Assets and savings** | | | | | |
| Rural monthly average total consumption/ household (US$) | Not reported | 173 (control)<br>207 (intervention) | 33.7[†] | Demographic and socioeconomic variables | Increase in expenditures in child education and clothing expenditures |
| Urban monthly average total consumption/ household (US$) | | 183 (control)<br>200 (intervention) | 18.0[†] | | |
| Extreme poverty reduction (% points) | | | | –5.8 (urban)[NA] | |
| | | | | –5.9 (rural)[NA] | |
| **Zambia/SCT**[37,51,52] | | | | | |
| Bangladesh[3] | BRAC | Poverty alleviation and empowerment: the second impact assessment study of BRAC's Rural Development Programme | 1998 | Longitudinal household survey comparing programme participants with programme non-participants | BRAC households had twice the savings of the comparison households<br>BRAC households were significantly more likely than comparison households to have durable assets |
| Bangladesh[3] | BRAC | Linking microfinance and safety net programs to include the poorest: the case of IGVGD in Bangladesh | 2001 | Longitudinal survey and participatory appraisal exercise involving comparing the same sample of IGVGD members in three time periods: pre-programme (1994), end of the programme (1996), and three years after the end of the programme (1999) | Decrease of proportion of women begging: 18% (1994) compared to 2% (1996) and 0% (1999)<br>Decrease of proportion of landless households: 78% (1994) compared to 64% (1996) |

| Country | Institution | Study[§] | Year | Design/control group | Outcome |
|---|---|---|---|---|---|
| Bangladesh | ASA | Impact assessment of ASA | 1997 | Cross-sectional household survey comparing (a) newer clients (post-1996); (b) older clients (pre-1996); and (c) non-participant households | • Older and newer clients owned significantly more assets than non-clients (respectively 32% and 23% vs 11%)<br>• Older and newer clients were significantly more likely to own land compared to non-clients (29% and 14% vs 2%) |
| Thailand[4] | Rural Friends Association and Integrated Agricultural Management | The impact of group lending in northeast Thailand | 1999 | Longitudinal household survey comparing microfinance participants with (a) households that have not been offered microfinance but have expressed interest in joining the programme (also called the correct comparison); and (b) non-participant households that did not sign up for participation in the programme (also called the naïve comparison, not taking into account self-selection bias) | The correct comparison found no impact on physical assets and savings |
| Philippines | ASHI | Poverty reduced through microfinance: the impact of ASHI in the Philippines | 2000 | Cross-sectional household survey comparing clients with non-clients | ASHI clients owned significantly more productive assets and were less likely to borrow from insecure sources in times of crisis than non-clients (8% vs 23% respectively) |
| Uganda | FINCA, FOCCAS, PRIDE | Impact of three microfinance programs in Uganda | 2001 | Cross-sectional household survey comparing clients with non-clients | Clients were more likely to become homeowners than non-clients (10% vs 1%) |

1. This study is part of the first impact evaluations conducted by the Grameen Bank.
2. This study is part of a series of impact evaluations conducted by the World Bank and the Bangladesh Institute of Development Studies (BIDS).
3. This study is part of a series of impact evaluations commissioned by the microfinance institutions themselves, often with the support of their donors.
4. This study applied the so-called "Coleman model" for the impact evaluation: to overcome the selection bias Coleman chose to compare the current borrowers to two different comparison groups: (a) the non-participant villagers (the naïve comparison group); and (b) the non-participant villagers who had signed up for joining microfinance a year in advance (the correct comparison group) (39).
5. This study is one of the two first pilot studies of the Assessing the Impacts of Microenterprise Services (AIMS) Project launched in 1995 by USAID. Through this project, USAID developed five tools (two quantitative and three qualitative) designed to help practitioners in performing low-cost but good-quality evaluations of the impact and the performance of their programmes. These tools were initially tested in Honduras and Mali (39).
6. This study is part of the AIMS Core Impact Assessment comprising the most rigorous of the AIMS studies. These studies employed longitudinal data and comparison groups of non-clients as well as much larger sample sizes (39).

§ All the references in this table are derived from Goldberg 2005 (39).

* This study from Khandker and Pitt represented the first serious attempt to generate a truly accurate assessment of the impact of microfinance by dealing with selection bias and non-random placement. Morduch argued that the method of Khandker and Pitt was wrong because although in theory the three MFIs limited membership to those with less than half an acre of land, in reality 20–30% of the clients are normally above this cut-off. As a result the comparison made by Khandker and Pitt was likely to have overestimated the impact between clients and non-clients.

## Table 5.3 Cash transfer interventions: impact on household food security, food consumption patterns and nutrition

| Outcome | Baseline | Follow-up | Net change | Effect adjusted for | Indirect effect |
|---|---|---|---|---|---|
| **Mexico/PROGRESA[47]** | | | | | |
| Median monthly value for food consumed/person (pesos) | Not reported | 117.0 (control)<br>129.4 (intervention) | +10.6%[NA] | Household and community characteristics, food price | A dose–response analysis, rather than a treatment vs control comparison, revealed that doubling the cash transfer was associated with higher BMI (+0.83, P < 0.001) both in males and females. It was also associated with higher prevalence of overweight (OR = 1.4, 95% CI = 1.1–1.7, P = 0.002) and grade II obesity (OR = 1.6, 95% CI = 1.0–2.4, P = 0.03) |
| | | 83.2 (poorest control)<br>94.4 (poorest intervention) | +13.5%[NA] | | |
| | | 171.4 (richest control)<br>180.2 (richest intervention) | +5.1%[NA] | | |
| Median monthly value for fruits and vegetables consumed/person (pesos) | Not reported | 15.3 (control)<br>17.8 (intervention) | +16.7%[NA] | | |
| Median monthly value for animal products consumed/person (pesos) | Not reported | 19.1 (control)<br>24.8 (intervention) | +30.0%[NA] | | |
| Mean caloric availability per person/day (Kcal) | Not reported | 1799.4 (control)<br>1940.0 (intervention) | +7.8%[‡] | | Vulnerability reduction to shocks and times of crisis |
| **Nicaragua/RPS[48]** | | | | | |
| Annual per capita food expenditure (US$) | 201 (control)<br>215 (intervention) | 165 (control 2001)<br>248 (intervention 2001) | +78 (2001)[†] | Demographic and socioeconomic variables | |
| | | 172 (control 2002)<br>236 (intervention 2002) | +50 (2002)[†] | | |
| Food share (%) | 70.8 (control)<br>70.0 (intervention) | 66.8 (control 2001)<br>70.6 (intervention 2001) | +4.7 (2001)[†] | | |
| | | 66.4 (control 2002)<br>70.0 (intervention 2002) | +4.5 (2002)[†] | | |
| Average diet variety share (%) | 11.7 (beans)<br>7.3 (meat)<br>9.2 (fats) | Not reported | –3.7 (beans)[†]<br>+2.2 (meat) [‡]<br>+2.4 (fats)[†] | | |
| **Colombia/PFA[49,50]** | | | | | |
| Monthly average food consumption/household (US$) | Not reported | Rural<br>107 (control)<br>134 (intervention) | 27[†] | Demographic and socioeconomic variables | |
| | | Urban<br>98 (control)<br>113 (intervention) | 15.5[†] | | |
| Increase in monthly consumption of proteins (pesos) | Not reported | Not reported | 21 831.4 (urban)[†]<br>21 717.2 (rural)[†] | | |
| Increase in monthly consumption of fats and oils (pesos) | Not reported | Not reported | 1887.8 (urban)[‡]<br>3139.4 (rural)[‡] | | |
| **Brazil/BF[54]** | | | | | |
| Food expenditure | Not reported | Not reported | R23.2 | Not reported | Not reported |

| Outcome | Baseline | Follow-up | Net change | Effect adjusted for | Indirect effect |
|---|---|---|---|---|---|
| **Zambia/SCT[37,51,52]** | | | | | |
| % increase in food expenditure | Not reported | Not reported | –0.3 (Chipata) NS<br>5 (Kalomo)‡<br>58.5 (Kazungula)† | | |
| Households living with one meal per day (%) | 19 | 13[NA] | Not reported | Adjustment through propensity score matching | Proportion of households feeling hopeful increased from 37% (baseline) to 49% (2005) |
| Households still hungry after each meal (%) | 56 | 34[NA] | Not reported | | Reduce vulnerability to shocks |
| Average weekly consumption of fats (days/week) | 0.7 | 2 | Not reported | | |
| Having carbohydrates at least once a week (% households) | 16.3 | 40.7 | Not reported | | |
| Having fats at least once a week (% households) | 17.8 | 48.2 | Not reported | | |
| Having vitamins seven days a week (% households) | 72 | 84 | Not reported | | |
| **Malawi/DECT[26]** | | | | | |
| Proportion of food expenditure (%) | – | – | 64[NA] | | |
| Number of meals/day (average) | 1.5 | 2.4 | Not reported | Not reported | DECT contributed to time and labour saving in beneficiary homes, especially among women and girls |
| Number of food groups consumed the day before survey | 2.5 (male-headed)<br>2.5 (female-headed) | 4.0 (male-headed)<br>3.6 (female-headed) | Not reported | | Reduced the number and frequency of people seeking casual employment<br>Because of the lower number of people in search of an employment, the labour cost increased<br>Many households reported that DECT promoted intrahousehold peace and also dignity of the household at community level |
| **Malawi/Mchinji[38]** | | | | | |
| Household monthly food expenditure (Malawian kwacha) | 645 (intervention)<br>460 (control) | 3310 (intervention)<br>369 (control) | 3125† | Not reported | |
| Households reporting improved food intake (%) | Not reported | 93.3% (intervention)†<br>11% (control) | Not reported | | |
| Households having three meals/day (%) | Not reported | 44 (intervention)†<br>8 (control) | Not reported | | |
| Households still hungry after a meal (%) | Not reported | 7.5 (intervention)‡<br>37 (control) | Not reported | | |
| Average number of food groups | 5.4 (intervention)<br>5.3 (control) | 8.1 (intervention)<br>4.9 (control) | 3.1%† | | |
| Number of meals/week containing meat, chicken or fish | Not reported | 2.1 (intervention)†<br>0.3 (control) | Not reported | | |

| Outcome | Baseline | Follow-up | Net change | Effect adjusted for | Indirect effect |
|---|---|---|---|---|---|
| Number of days without enough to eat in the past month | Not reported | 1.2 (intervention)†<br>5.2 (control) | Not reported | | |
| Households having food store (%) | Not reported | 88 (intervention)†<br>57 (control) | Not reported | | |
| Head of the household underweight (%) | 31.4 (intervention)<br>36.2 (control) | Round 2:<br>20.6 (intervention)$^{NS}$<br>24.2 (control)<br>Round 3:<br>28.8 (intervention)$^{NS}$<br>33.7 (control) | Not reported | | |
| **Ethiopia/PSNP[35]** | | | | | |
| Mean per capita food expenditure (birr) | – | 79.76 | –3.26$^{NS}$ | Adjustment through propensity score matching | |
| Per capita calories intake/day in last seven days (mean) | Not reported | 2485 (intervention)<br>2431 (control) | 54.24$^{NS}$ | | |
| Change in months of food security (2004–2006)[1] | Not reported | 0.228 (intervention)<br>0.063 (control) | 0.164$^{NS}$ | | |
| Change in the square of food gap (2004–2006)[2] | Not reported | –1.378 (intervention)<br>0.025 (control) | –1.403$^{NS}$ | | |
| **Bangladesh/RMP[53,75]** | | | | | |
| Per capita food expenditure[3] (taka) | Not reported | 520 (treatment)<br>407 (control) | 113† | Demographic and socioeconomic characteristics of the households and contextual factors to account for community differences in market prices, wages, infrastructures, flood proneness and administrative structures | |
| Total calories intake (Kcal per person per day) | Not reported | 1928 (treatment)<br>1657 (control) | 271† | | |
| Women (16–49 years of age) BMI | Not reported | 19.45 (treatment)<br>19.10 (control) | 0.35$^{NS}$ | | |

$^{NA}$ = significance level not available; $^{NS}$ = Not significant; † $P < 0.001$; ‡ $P < 0.05$.

1. Change in months of food security: difference between the number of months the households had no problems in satisfying the food needs of the household in the last 12 months (July 2005–June 2006) and the two years before (2003–2004). A difference of 1.0 means that the programme increased the number of months that the household was food secure by one month[35].
2. Change in the square of the food gap: difference in the squared change in food gap (defined as the number of months that households had difficulty satisfying their food needs) between 2005–2006 and 2003–2004. A negative value indicates a reduction in the food gap and an improvement in the household food security[35].
3. Food expenditure consists of the quantity of food purchased and obtained by home production and other sources, including food aid from local donors.

## Table 5.4 Microfinance interventions: impact on household food security, food consumption pattern and nutrition

| Outcome | Baseline | Follow-up | Net change | Effect adjusted for |
|---|---|---|---|---|
| **CFPR/TUP/Bangladesh[59,61,66]** | | | | |
| Mean number of different foods per day[1] (± SD) | 3.7 (± 0.99) (SUP)<br>3.9 (± 1.1) (NSUP) | 5.6 (± 1.6) (SUP)[6]<br>4.4 (± 1.2) (NSUP)[6] | –<br>– | Not mentioned |
| Per capita mean g/day food consumption[1] (± SD) | 706 (± 298) (SUP)<br>717 (± 266) (NSUP) | 1019 (± 446) (SUP)[6]<br>788 (± 312) (NSUP) | –<br>– | |
| Per capita mean g/day animal food consumption[1] (± SD) | 22 (± 49) (SUP)<br>22 (± 43) (NSUP) | 85 (± 114) (SUP)[6]<br>34 (± 64) (NSUP) | –<br>– | |
| Per capita Kcal per day[1] (± SD) | 1750 (± 650) (SUP)<br>1760 (± 648) (NSUP) | 2138 (± 704) (SUP)[6]<br>1787 (± 654) (NSUP) | +22% (SUP)<br>+2% (NSUP) | |
| % energy from animal source (fish, milk, eggs, meat)[1] | 1.3 (SUP)<br>1.2 (NSUP) | 3.2 (SUP)[6]<br>1.8 (NSUP) | –<br>– | |
| Per capita daily expenditure on food[1] | 8.7 Tk (SUP)<br>8.9 Tk (NSUP) | 13.5 (SUP)[6]<br>9.9 (NSUP) | –<br>– | |
| Food security | | | | |
| - % couldn't eat for a whole day | 62.1 (SUP)<br>45.1 (NSUP) | 14.9 (SUP)<br>22.1 (NSUP) | –<br>– | |
| - % households experiencing chronic food deficiency[2] | Approx. 60 (SUP)<br>Approx. 40 (NSUP) | Approx. 20 (SUP)<br>Approx. 30 (NSUP) | | |
| % women (15–49 years) with BMI < 18.5 | 47.9 (SUP)<br>42.2 (NSUP) | 49.5 (SUP)<br>42.6 (NSUP) | | |
| **WISDOM/Ethiopia[60]** | | | | |
| Mean numbers of meals per day (SD)[3] | –<br>–<br>– | Established clients = 2.9 (0.4)<br>Incoming clients = 2.9 (0.4)<br>Community controls = 2.8 (0.5) | – | Not mentioned |
| % consumption of two or less meals per day[3] | –<br>–<br>– | Established clients = 13.9<br>Incoming clients = 13.7<br>Community controls = 18.4 | – | |
| % proportion consuming protein-rich foods[3] | –<br>–<br>– | Established clients = 72.4<br>Incoming clients = 74.5<br>Community controls = 70.9 | – | |
| - % dairy products | –<br>–<br>– | Established clients = 63.6<br>Incoming clients = 69.7<br>Community controls = 59.1 | – | |
| - % eggs | –<br>–<br>– | Established clients = 41.5<br>Incoming clients = 50.77<br>Community controls = 41.4 | – | |
| - % meat/poultry/fish | –<br>–<br>– | Established clients = 23.4<br>Incoming clients = 26.9<br>Community controls = 21.3 | – | |
| % increased quality of diet over past year[3] | –<br>–<br>– | Established clients = 27.2<br>Incoming clients = 29.1<br>Community controls = 25.8 | – | |
| % increased food expenditures over the past year[3] | –<br>–<br>– | Established clients = 64.0<br>Incoming clients = 60.6<br>Community controls = 64.2 | – | |
| Overall prevalence (%) of acute malnutrition[4] | –<br>–<br>– | | – | |

| Outcome | Baseline | Follow-up | Net change | Effect adjusted for |
|---|---|---|---|---|
| - Male respondents (N = 456) | –<br>–<br>– | Established clients = 13.2<br>Incoming clients = 15.3<br>Community controls = 10.3 | – | |
| - Female respondents (N = 352) | –<br>–<br>– | Established clients = 2.4<br>Incoming clients = 3.1<br>Community controls = 6.7 | – | |
| - Children (6–59 months of age) (N = 608) | –<br>–<br>– | Established clients = 16.0<br>Incoming clients = 18.3 | – | |
| **IMAGE/South Africa[41]** | | | | |
| % households in food security[5] | | | | |
| - Intervention group | 56 | 87 | ARR[9] = 1.01 (0.81–1.26) | Village pair, age group, marital status and baseline differences among villages |
| - Comparison group | 45 | 84 | | |
| % households spending > 200 South African rand per capita on food and clothing | | | | |
| - Intervention group | – | 65% | ARR[9] = 1.2 (0.5–3.2) | |
| - Control group | – | 54% | | |
| **Kafo Jiginew/Mali[39]** | | | | |
| % clients experiencing food insecurity in the previous year | – | 12 (one-year clients)[6]<br>10 (two-year clients)[6]<br>29 (incoming clients) | – | Not mentioned |
| Months of food insecurity | – | 0.25 (one-year clients)<br>0.39 (two-year clients)<br>1.2 (incoming clients) | – | |
| **Credit for the alleviation of rural poverty: Grameen Bank/Bangladesh[39]** | | | | |
| Per capita food expenditure | – | – | +8% (compared to target non-participant households in Grameen villages) | Not mentioned |
| | – | – | +35% (compared to target non-participant households in comparison villages) | Not mentioned |

1. Results referred to N. 190 SUP (selected ultra poor) and N. 183 NSUP (non-selected ultra poor).
2. Estimates are approximated as they are deducted from figure 11 in Rabbani and colleagues[57].
3. Results referred to N. 406 established clients, N. 206 incoming clients and N. 205 community controls.
4. MUAC < 23 cm (for men), < 22 cm (for women), < 12.5 cm (for children 6–59 months of age).
5. Pronyk and colleagues did not specify how food insecurity was operationalized.
6. Significantly different at $P < 0.001$ level as compared to baseline or reference group.
7. Significantly different at $P \geq 0.01$ and $P \leq 0.05$ level as compared to baseline or established clients.
8. Figure obtained through difference-in-difference method (i.e. difference between SUP-NSUP at baseline and SUP-NSUP at follow-up).
9. ARR = adjusted risk ratio calculated as the ratio of the observed to the expected outcomes predicted by fitting a logistic regression model, 95% confidence intervals in brackets.

## Table 5.5 Cash transfer interventions: impact on health care access and health-seeking behaviours

| Outcome | Baseline | Follow-up | Net change | Effect adjusted for | Indirect effect |
|---|---|---|---|---|---|
| **Mexico/PROGRESA[42]** | | | | | |
| Total mean consultation at public clinic per day (all ages) | 9.1 (control)<br>9.1 (intervention) | 11.5 (control)<br>12.8 (intervention) | 2.09† | Sociodemographic and economic characteristics | Health improvement among adults, higher quality of care for women |
| Overall mean monthly consultation (18–50 yrs) | Not reported | 0.053 (control)<br>0.059 (intervention) | +6%NA | | |
| Overall mean monthly consultation (+51 yrs) | Not reported | 0.119 (control)<br>0.122 (intervention) | +4%NA | | |
| Mean monthly consultation per private provider (18–50 yrs) | Not reported | 0.015 (control)<br>0.014 (intervention) | –2%NA | | |
| Mean monthly consultation per private provider (+51 yrs) | Not reported | 0.041 (control)<br>0.035 (intervention) | –5%NA | | |
| Mean monthly consultation per public clinic (18–50 yrs) | Not reported | 0.032 (control)<br>0.041 (intervention) | +9NA | | |
| Mean monthly consultation per public clinic (+51 yrs) | Not reported | 0.064 (control)<br>0.076 (intervention) | +15%NA | | |
| Mean daily hospital consultation (18–50 yrs) | Not reported | 0.007 (control)<br>0.005 (intervention) | –2%NA | | |
| Mean daily hospital consultation (+51 yrs) | Not reported | 0.015 (control)<br>0.011 (intervention) | –5%NA | | |
| **Honduras/PRAF[63]** | | | | | |
| Antenatal care, five or more visits (% women)[1] | 37.9 (G1)<br>38.1 (G3)<br>35.1 (G2)<br>48.9 (G4) | Not reported | +18.7 (7.4–30.0)† (G1)<br>+18.4 (6.9–29.9)† (G3)<br>+13.2 (–1.6–28.0) (G2)<br>–0.7 (–9.1–7.7) (G4) | Cluster effect | Decline of pregnancy rate, significantly smaller among groups (G1, G3) who received the intervention compared to the decline observed in the two groups that did not receive the intervention |
| 10-day postpartum check-up (% women)[1] | 17.8 (G1)<br>22.7 (G3)<br>16.1 (G2)<br>21.0 (G4) | Not reported | –5.6 (–15.7–4.5) (G1)<br>–5.7 (–16.0–4.5) (G3)<br>+1.2 (–11.8–14.3) (G2)<br>+7.1 (–0.3–14.6) (G4) | | |
| Children under 3 taken to the health centre at least once in the last 30 days (%)[1] | 44.0 (G1)<br>46.3 (G3)<br>45.2 (G2)<br>44.3 (G4) | Not reported | +20.2 (10.9–29.6)‡ (G1)<br>+14.9 (5.6–24.3)† (G3)<br>–1.8 (–13.4–9.8) (G2)<br>+1.3 (–5.4–7.9) (G4) | | |
| **Nicaragua/RPS[48]** | | | | | |
| Children (0–3 years) taken to health control (%) | 2000<br>73.7 (intervention)<br>73.6 (control) | 2001<br>95.8 (intervention)<br>79.4 (control) | 2001 vs 2000<br>+16.3† | Not reported | Not reported |
| | | 2002<br>92.7 (intervention)<br>84.1 (control) | 2002 vs 2000<br>+8.4† | | |
| Children (0–3 years) taken to growth monitoring checks (%) | 2000<br>60.7 (intervention)<br>60.4 (control) | 2001<br>92.0 (intervention)<br>67.4 (control) | 2001 vs 2000<br>+24.2† | | |
| | | 2002<br>89.0 (intervention)<br>75.6 (control) | 2002 vs 2000<br>+13.1† | | |
| **Colombia/PFA[49]** | | | | | |
| Preventive health care visits (%) | | | | Not reported | Not reported |

| Outcome | Baseline | Follow-up | Net change | Effect adjusted for | Indirect effect |
|---|---|---|---|---|---|
| Child age < 24 months | 17.2 | 40.0 | +22.8‡ | | |
| Child age 24–48 months | 34.0 | 66.8 | +33.2‡ | | |
| Child age > 48 months | 38.9 | 38.9 | +1.5 | | |
| **Jamaica/PATH[43]** | | | | | |
| Preventive health care visits in past six months among children (0–6 years) (N. of visits) | Not reported | 0. 73 (control group)<br>1.01 (treatment group) | +38%† | Eligibility score, variable level at the baseline, time of programme application, household demographic and socioeconomic variables | Not reported |
| Preventive health care visits in past six months among elderly people (> 65 years) (N. of visits) | Not reported | 1.19 (control group)<br>1.20 (treatment group) | +1% | | |
| **Zambia/SCT[37]** | | | | | |
| Percentage of overall consumption on health | 3.4 | 1.2 | Not reported | Adjustment through propensity score matching | Not reported |
| **Malawi/Mchinji[38]** | | | | | |
| Adults seeking health care when sick (%) | Not reported | 84 (intervention)<br>10 (control) | Not reported | Not reported | Not reported |
| Households spending nothing on health care (%) | Not reported | 25.3 (intervention)<br>63 (control) | Not reported | | |
| **Malawi[46]** | | | | | |
| HIV testing (%) | Not applicable | Not applicable | +27[NA] | Gender, age, HIV status, area-level variables, distance from each VCT centre | Reduce gender bias<br>Interaction between monetary incentives and distance from the VCT centre |
| Attendance of VCT to collect HIV results (%) | | | +43[NA]<br>+9.1% for every US$ incentive[NA] | | |
| **India/JYS[44]** | | | | | |
| % at least three antenatal care visits (95% CI)[2] | 45.7 (45.1–46.3) | 53.6 (53.0–54.3) | 10.7 (9.1–12.3)<br>11.1 (10.1–12.1)<br>10.9 (4.6–17.2) | Area of residence, poverty status, wealth quintile, caste, education, parity and maternal age | Not reported |
| % in-facility birth (95% CI)[2] | 41.0 (40.5–41.6) | 54.1 (53.5–54.8) | 43.5 (42.5–44.6)<br>43.9 (43.3–44.6)<br>49.2 (43.2–55.1) | | |
| % skilled birth attendance (95% CI)[2] | 48.7 (48.1–49.2) | 59.3 (58.7–60.0) | 36.6 (35.6–37.7)<br>36.2 (35.7–36.8)<br>39.3 (33.7–45.0) | | |
| **Nepal/SDIP[45]** | | | | | |
| % in-government facility birth | 20.7 | 10.5 | 24[NA] | | The effect of SDIP on utilization of institutional delivery care is immediate in the short term, but gradually eroded in the long term, probably as a consequence of the negative effect observed in one of the regions covered by SDIP |
| % skilled birth attendance | 18.9 | 23.8 | 13.0[NA] | | |
| % delivery at home | 73.6 | 84.0 | –5[NA] | | |

[NA] = significance level not available.

† $P < 0.001$.

‡ $< 0.05$.

1. G1 = communities receiving conditional cash transfer; G2 = communities receiving supply-side interventions to improve quality of health services together with a community-based nutrition intervention; G3 = communities receiving both the interventions; and G4 = control communities.
2. Net impact estimated through three different methods and respectively exact matching, with versus without, and difference-in-difference methods.

## Table 5.6 Microfinance interventions: impact on health care access and health-seeking behaviours

| Outcome | Baseline | Follow-up | Net change | Effect adjusted for |
|---|---|---|---|---|
| **RDP/ICDDR,B/Bangladesh[64]** | | | | |
| Type of self -are sought in the last 15 days by sick study participants[1] | | | | Age and sex of the ill person<br>Gender and literacy of head of the household<br>Household location[5]<br>Seasonality to account for morbidity variation<br>Type and duration of illness experienced |
| % self-care | | | | |
| - BRAC household - members | 22 | 57.8 | – | |
| - Poor non-BRAC household members | 24.1 | 55.8 | – | |
| - Non-poor household members | 16.4 | 50.2 | – | |
| % paraprofessional | | | | |
| - BRAC household members | 28.6 | 11.4 | – | |
| - Poor non-BRAC household members | 42.0 | 13.4 | – | |
| - Non-poor household members | 38.2 | 12.5 | – | |
| % qualified allopathic | | | | |
| - BRAC household members | 13.7 | 6.6 | – | |
| - Poor non-BRAC household members | 7.5 | 5.1 | – | |
| - Non-poor household members | 14.0 | 10.9 | – | |
| % unqualified allopathic | | | | |
| - BRAC household members | 25.9 | 21.6 | – | |
| - Poor non-BRAC household members | 18.6 | 21.3 | – | |
| - Non-poor household members | 21.9 | 21.2 | – | |
| % traditional | | | | |
| - BRAC household members | 9.8 | 2.7 | – | |
| - Poor non-BRAC household members | 7.7 | 4.4 | – | |
| - Non-poor household members | 9.4 | 5.1 | – | |
| **CFPR/TUP/Bangladesh[65,66]** | | | | |
| Type of self-care sought in the last 15 days by sick study participants | | | | Age and sex of the sick individual<br>Sex and education of the head of the household<br>Labour-selling status of the household |
| % self-care | | | | |
| - Ultra-poor households | 49.3 | 27.8 | –7.2 (–12.9–1.5)[6,**] | |
| - Control households[2] | 43.1 | 29.9 | | |
| % traditional healers | | | | |
| - Ultra-poor households | 8.5 | 11.1 | –1.3 (–4.8–2.2)[6,NS] | |
| - Control households[2] | 7.5 | 11.8 | | |
| % drugstore salesperson | | | | |
| - Ultra-poor households | 19.4 | 24.4 | 0.0 (–5.1–5.1)[6,NS] | |
| - Control households[2] | 22.4 | 26.5 | | |
| % paraprofessionals | | | | |
| - Ultra-poor households | 14.5 | 30.2 | 3.9 (–0.1–8.7)[6,NS] | |
| - Control households[2] | 14.3 | 25.9 | | |
| % professional allopaths (i.e. registered medical graduates) | | | | |
| - Ultra-poor households | 8.2 | 8.5 | 4.4 (1.1–7.7)[6,*] | |
| - Control households[2] | 10.7 | 5.9 | | |
| % households seeking formal allopathic care[3] | | | | |
| - Ultra-poor households | 22.7 | 38.7 | 9.2 (4.2–14.2)[6,***] | |
| - Control households[2] | 25.0 | 31.8 | | |
| % households spending > 25 taka for ill person | | | | |
| - Ultra-poor households | 32.8 | 45.5 | 11.2 (5.8–16.6)[6,***] | |
| - Control households[2] | 41.3 | 44.8 | | |

| Outcome | Baseline | Follow-up | Net change | Effect adjusted for |
|---|---|---|---|---|
| **NABARD/SHG/India[67]** | | | | |
| Exclusion to health care[4] | | | | |
| Early joiners (> two years) | – | – | OR = 0.6 (0.4–0.9) | Women's education, employment, caste, household landholdings |
| Late joiners ( two years) | – | – | OR = 0.6 (0.4–0.8) | |
| Not members, but SHG in the household | – | – | OR = 0.5 (0.3–0.9) | |
| Exposure to health risk[4] | | | | |
| Early joiners (> two years) | | | OR = 1.3 (0.9–2.2) | |
| Late joiners ( two years) | | | OR = 1.0 (0.7–1.4) | |
| **Cambodia Health Committee/Cambodia[40]** | | | | |
| Mean case notification rate per year | – | – | 1.5 (HHC) and 4.2 (Home DOTS) times higher than the reported national rate (144/100 000) | Not mentioned |
| Mean cure rate | – | – | 94% (HHC) and 99% (Home DOTS) | |
| Proportion of extrapulmonary cases detected | – | – | 4% (HHC) and 13% (Home DOTS)*** | |
| Delay between onset of symptoms and diagnosis of TB | – | – | 30 months (HHC) and 6 months (Home DOTS)*** | |
| **IMAGE/South Africa[68]** | | | | |
| Voluntary counselling and testing | | | | |
| Intervention group (%) | 12 | 29 | ARR = 1.6 (1.1–2.6) | Village pair, age, marital status and baseline measures of villages indicators |
| Control group (%) | 10 | 18 | | |

1. Self-care comprises cases in which no medication was used and cases involving the use of home-made remedies. Traditional methods include the use of faith-healing methods or homeopathic practitioners. The unqualified and the qualified allopathic categories represent the formal providers of medical care: the first group includes community health workers, village practitioners and medical assistants who have received basic preventive and curative training; the second group includes practitioners who have received professional medical training[64].
2. Controls drawn from a pool of ultra-poor households randomly selected in the same villages served by CFPR/TUP programme and not receiving benefits from the programme due to exclusion criteria.
3. Paraprofessionals and professional allopaths grouped together.
4. Reference group = non-SHG members.
5. Households were divided into households within or outside the embankment area, a large system of dams built for purposes of flood control, drainage and irrigation, in this case used as proxy of household socioeconomic position: households within the embankment area were considered to be socioeconomically better off due to the benefits of irrigation.
6. Change in percentage unit (95% confidence interval).
7. *** $P < 0.001$; ** $P < 0.01$; * $P < 0.05$; NS = not significant.

# 6. Analysis of the implementation findings

The social protection interventions we described have been shown to be feasible in a range of settings and effective in tackling some of the most important social determinants of TB. However, this does not automatically answer whether cash transfer and microfinance interventions can be implemented to strengthen TB control.

To address this question we drew upon the main programmatic lessons emerging from the interventions included in this review and appraised them in the light of TB control needs. This allowed the identification of a number of challenges that we have pragmatically divided into operational, logistic and sustainability categories. When appropriate, practical examples drawn from the interventions will be provided.

## 6.1 Operational challenges

### 6.1.1 Cash transfer interventions

The majority of cash transfer interventions included in this review have been implemented in countries where TB is not a public health priority or where the programme implementation is run with limited financial resources or not yet fully integrated within a national social protection policy to accommodate an additional objective such as the control of TB.

With the exceptions of Ecuador, Ethiopia and Malawi, all countries included in this review meet either one or both targets of 70% case detection rate and the 85% treatment success rate set by WHO. Arguably, it could be suggested that in these countries, the objectives of the respective cash transfer programmes, either conditional or unconditional, could be expanded to encompass the improvement of the local TB control strategy. Nonetheless, the imposition of additional conditionalities for the scope of TB control may divert human and economic resources from more compelling health or educational priorities. The implementation of conditional cash transfer interventions in these countries to enhance access to TB care and treatment adherence may not only be impractical, but also unethical if in these countries the local TB services are inadequate.

The quality of TB services available is one of the most critical aspects to take into consideration when predicting the likelihood of success of a conditional cash transfer programme in high TB burden countries for TB control purposes. High TB burden countries are not only characterized by weak health systems, but they also lack the adequate skills and administrative structures necessary to implement and manage conditionality. Both of these concerns were clearly observable during the SDIP programme in Nepal[45], showing considerable delay in the disbursement of cash (only 29% of the eligible women had been given the money at the time of discharge, as was the intervention protocol), poor financial and administrative management at district level, lack of clarity on the purposes and implementation of the intervention, and inadequate funding. In addition, qualitative and quantitative surveys on the provision of delivery care services showed that too few health centres and primary health care centres could provide all the elements of quality delivery care, making clear that the effective implementation of the programme required improvement in the availability of quality services[70]. By contrast, the experiences from Colombia, Honduras, Malawi and Nicaragua demonstrate that minimal infrastructures and administrative capacities do not necessarily preclude the success of conditional cash transfer interventions even in

very poor countries. In Honduras, for example, the targeted communities were selected based on their level of malnutrition. The communities were in mountainous and rural areas with limited health infrastructure and minimal administrative autonomy. In mid-2000 there were just 159 health care centres, most of them staffed with just an auxiliary nurse. Nonetheless, as also demonstrated in this review, PRAF had a significant impact on health care and utilization of preventive services[63].

In some cases, the programme implementation led to an improvement of required health care services[7]. One of the main components of PRAF in Honduras was in fact the strengthening of health care services[63]. RPS in Nicaragua was accompanied by important supply-side improvements thanks to the engagement of the public sector and local NGOs that wanted to provide health services and monitor participation[7].

The implementation of cash transfer interventions may be also challenged by ethical issues. Several authors have argued that conditionality may raise important questions around the concepts of choice, autonomy and decisional capacity of the poor[7], who through conditionality may be forced to choose some services instead of others (for example, to seek TB care when there are more compelling priorities in the household) or may be forced to act against their common belief or will. In this respect, this review provided conflicting results: the low uptake of the JSY programme in India among the poorest and least educated women demonstrates that cash incentives (even when conditional) do not necessary overcome cultural or geographical barriers hampering people's capacity to meet the behavioural requirements imposed by the programme[44]. On the other hand, the conditional cash transfer in Malawi suggests that monetary incentives of less than a tenth of a day's wage can dramatically change people's health-seeking behaviours by compensating the psychological (for example fear and stigma) and economic costs of HIV testing[46].

Extensive research on cash transfers to support families affected by HIV//AIDS has concluded that direct targeting of affected families or orphans poses significant problems[7]. Stigma represents the biggest challenge, as households with illness are singled out and identified. Furthermore, although TB-affected families are almost consistently poorer than the general population, targeting this population group still raise equity concerns, as households that are not impacted by the illness may be equally in need of assistance.

Several studies have also documented unanticipated and adverse effects of the programmes. In Honduras, Stecklov and colleagues found that the PRAF programme may have resulted in an increase of fertility by 2–4 percentage points, as only pregnant women were eligible for subsidy[71]. In Brazil, the lack of impact on child malnutrition was attributed to the fact that parents were withholding food from their children based on the mistaken assumption that child growth improvement would have made them no longer eligible for the programme[7].

In Mexico, the secondary analysis of PROGRESA data revealed that doubling the cash transfer to the household was associated with higher body mass index (+0.83, $P < 0.001$) both in males and females. It was also associated with higher prevalence of overweight (OR = 1.4, 95% CI = 1.1–1.7, P = 0.002) and grade II obesity (OR = 1.6, 95% CI = 1.0–2.4, P = 0.03). These results suggest that conditional cash transfers may be associated with unexpected negative effects in countries experiencing nutritional transition.

Finally, episodes of corruption and jealousy among community members were experienced during the Mchinji Social Cash Transfer programme in Malawi as a result of the relatively large size of the cash transfer, able to raise the household socioeconomic position of the beneficiaries well beyond the average of the household residents in the project area who were not beneficiaries[38].

### 6.1.2 Microfinance interventions

The implementation of microfinance interventions to support TB control is operationally challenged by the notion that microfinance institutions are normally reluctant to enrol very poor or disease-affected households. This may ultimately limit the use of microfinance for a TB preventive scope (by targeting very poor households that may at high risk of TB) and for strengthening case finding and treatment (by targeting TB-affected families).

Both supply-side and demand-side factors make it difficult to deliver microcredit programmes to people living in extreme poverty and those most vulnerable to TB[72]. In terms of supply-side factors, successful microcredit programmes are strongly dependent on the selection of clients who – although poor – are deemed able to pay back the

money borrowed. Preference is typically given to subjects having some sort of earnings and some assets, on the basis that even if the microcredit should not result in profitable activities, these households would be still able to repay the loan.

The demand-side factors to consider are that the extremely poor often do not select themselves to be in the programmes either because they do not consider themselves to be creditworthy or because they lack the confidence to be able to generate sufficient income to pay back the loan[72,73].

In this review we presented examples of successful programmes that focus specifically on the ultra poor, especially the Income Generation for Vulnerable Group Development (IGVGD) programme and CFPR/TUP. According to the authors, these programmes demonstrate that it is possible to bring even the most destitute households to a position where they can access microfinance services[74,75]. Nonetheless, when programmes are appraised in more detail, the successes of some programmes are not found to be due strictly to microfinance. In the process evaluation of IGVGD, for example, the authors found that the main incentive to participation was the receipt of supplementary food, whereas the microfinance benefit was probably the least successful component of the intervention. Although graduation to microcredit was considered to be the ultimate objective, only 20% of the ultra poor recruited actually graduated to become eligible for microfinance. Among those eligible, the default rate was relatively high (8%) by microfinance standards[73]. The major reasons reported for not wanting a loan was the fear of engaging in something that might increase debt and concern that the very small cash gain from income-generating activities would make repayment difficult[73]. Other authors have noted that the ultra-poor households eligible to borrow from microfinance institutions were significantly better off over a wide range of indicators than the ultra-poor households that did not report any affiliation with microfinance institutions[76]. Finally, even the IMAGE study revealed that the strongest impact on the study outcomes were observed only when microfinance was associated with the training intervention, suggesting that synergies between conventional poverty reduction strategies and health components are essential to achieve the intended objectives[69].

Provided microfinance interventions can incorporate health components, it remains unclear what partnership model between microfinance and public health institutions is the most efficient, under which criteria the partnership model should be decided, and which factors should be considered before embarking on interventions delivering combined health and development components. The IMAGE study attempted to address these questions through a formal process evaluation[77]. At the time of the trial, IMAGE used a linked partnership model whereby staff from the Rural AIDS Development Action Research Programme (RADAR) and the Small Enterprise Foundation (SEF) delivered respectively HIV education and microfinance services at the same time, but independently from each other. SEF managers deemed it feasible to collaborate with RADAR because the academic institution did not propose to make any major changes to the microfinance institution's delivery model. During the scale-up of the intervention, a parallel delivery model was tried whereby both sets of activities were managed by one organization (SEF), but this second model was deemed unfeasible for longer-term work. The IMAGE study also demonstrated that it is possible to combine microfinance with health-related initiatives without compromising the performance of the microfinance component. During the first 18 months of the trial, SEF records showed that the drop-out rate from microfinance was 11.1%, which was lower than SEF's overall average (16.2%), although the rate approached this average later on. After two years follow-up, cumulatively 31.3% of those originally recruited were no longer microfinance clients, but only 3% of them cited the added HIV training session as the reason. Of the US$ 290 000 disbursed, less than US$ 100 was not repaid. Microfinance performance was considered good even by the high standards of microfinance institutions; actually, SEF managers reported that microfinance fieldworkers working on IMAGE were among the highest performing for the microfinance institution[77].

## 6.2 Logistic challenges

### 6.2.1 Cash transfer interventions

The extremely positive results of most of the programmes included in this review demonstrate that it is possible to combine short-term reduction in rural poverty with improvement in health care access, even in very low-income settings. In

particular, the case of Zambia provides a model for low-income countries in sub-Saharan African[37], suggesting that even in relatively inaccessible settings with low population density and minimal ministerial capacity and weak infrastructure, it is possible to implement feasible, affordable and secure cash transfer schemes.

Among the others, the Social Cash Transfer programme of Zambia demonstrates how some of the logistic constraints linked to the transfer of money can be effectively overcome even in very poor settings. In Zambia, beneficiaries received their money through electronic transfer. Those situated within 15 kilometres of Kalomo opened savings accounts at the Kalomo branch of the Finance Bank, into which the money was transferred. Beneficiaries living further away visited pay-points established at rural health centres and schools. The financial transactions were monitored by the district social welfare officer.

Similarly, with the Dowa Emergency Cash Transfer Project in Malawi, an innovative element was introduced for the disbursement of cash: the smart card[26]. This card was issued by the Opportunity International Bank of Malawi as a delivery mechanism for the cash at the pay-points established every month for the duration of the intervention. All the cards were validated by fingerprint to avoid theft and corruption and were labelled as easy to use both by literate and illiterate clients, who also noted that the cards gave them a sense of social status and security (26). The pay-points were conveniently located in strategic areas served by the project and were announced with a considerable amount of notice. The cash disbursement was operated through a mobile bank moving around the different pay-points for one of two days. A typical pay-point served approximately 400–500 people and cash disbursement could last for the duration of the morning[26]. By March and April 2007, the mobile bank achieved 100% punctuality and the waiting times fell steadily from month to month as the disbursement procedure improved. Overall, 88 paydays took place, serving more than 10 000 beneficiaries for a total disbursement of more than 300 000 euros over the five months of the project. Despite this, there was no report of security incident, fraud or corruption[26].

The large, unmet demand for access to saving facilities in Malawi has been identified as one of the biggest logistic challenges hampering the capacity to maintain the Dowa Emergency Cash Transfer Project in Malawi[26]. The ability to save part of the cash transfer is in fact important for beneficiary households because saving allows them to distribute equally income and consumption across the seasons, thereby avoiding the cyclical occurrence of hunger and malnutrition and the need to revert to aid interventions paid by the government, donors and NGOs[26].

### 6.2.2 Microfinance interventions

None of the interventions included in this review explicitly mentioned logistic barriers to implementation; however, experience with people affected by HIV/AIDS suggests that targeting vulnerable populations such as TB-affected families with microfinance may be unsuccessful purely because of practical reasons[11]. First, microfinance institutions disburse loans in clusters of five in order to maximize the chance of repayment, but some may refuse to accept sick individuals because of the fear that they may die or may not be able to contribute to the repayment. Second, participants are required to attend regular group meetings and utilize savings, but sickness has often been identified as the main reason for failing to meet these obligations. And finally, microfinance institutions fear that illness-affected clients may default on their loans, may not continue to borrow or may want to withdraw their savings to respond to the economic costs of the disease. In the specific case of TB, members of TB-affected families, for example, may be forced to use the loan and profits to pay the treatment-related costs, may not be able to invest enough time in income-generating activities and may choose to invest their money to buy food rather than investing in creating business opportunities. All these legitimate concerns are somewhat contradicted by the community-based programme conducted in Cambodia, where the loan repayment rate approached 100% among TB-affected families benefiting from participation in village banks[40].

## 6.3 Sustainability challenges

### 6.3.1 Cash transfer interventions

The sustainability of cash transfer programmes largely depends on their integration into existing programmes and services provided by governmental institutions. Today most of the conditional or unconditional cash transfer programmes run

worldwide are led by governmental institutions and thus they should not be considered isolated poverty reduction strategy strategies, but instead one of the components of broad national social protection systems[19]. This is true for virtually all the countries in Latin America and it is definitively true also for Ethiopia[35], Zambia[37], the Mchinji programme in Malawi[38], Bangladesh[53], India[44] and Nepal[45].

Nonetheless, one aspect potentially limiting the sustainability of cash transfers, especially conditional, and their justification as tools for TB control purposes, is that the costs of conditional cash transfer programmes may be significant (table 6.1). Nearly half of the costs of these interventions are due to a number of features common to all cash transfer programmes, namely targeting, monitoring and conditioning the benefit (only for the conditional programmes), and, when included, coordinating the health care supply. In particular, estimates of conditionality costs (in setting, monitoring and enforcing conditions) range between the 3% of the costs of RPS in Nicaragua over two years, 9% for PRAF in Honduras over three years and 18% of PROGRESA in Mexico between 1997 and 2000[78]. Removing these costs would substantially reduce administrative costs, but it is impossible to determine whether this would reduce the effectiveness of the programmes[48] (table 6.1).

More difficult to judge is the resource availability in more deprived settings, such as those occurring in sub-Saharan countries. At the moment, the only indication of that comes from Zambia: the annual costs of the three pilot studies conducted in Zambia ranged between US$ 40.3 million and US$ 81.5 million respectively for the Kalomo and Katete districts[37]. A recent economic analysis showed that even if the pilot study in the Katete district was expanded throughout the country to target 450 000 beneficiaries with transfers of an average of US$ 15 per month, this would be merely 2.4% of the 2007 Zambian national budget or 0.7% of the gross domestic product (GDP) in 2007[37]. These data suggest that implementing social cash transfer on a national scale in Zambia is likely to be affordable. Nonetheless, public spending in Zambia on social assistance represents less than 0.1% of the GDP[37]. As a result, the decision to scale up social cash transfer across the country would require a significantly larger governmental investment and stronger political will[79].

As for impact sustainability, conclusions are uncertain. Evidence from the Rural Maintenance Programme in Bangladesh[53] showed that, at least after 25 months from the end of the programme participation, Rural Maintenance Programme ex-beneficiaries still showed a significantly higher monthly per capita household expenditure compared to control households (934 taka versus 628 taka, $P < 0.001$), suggesting that the programme can sustain significant long-term improvement in the income of programme beneficiaries[53]. The reason for the sustained livelihood improvement is probably the relatively large compulsory savings required for the women enrolled in the programme[53].

On the other hand, a time series analysis of data from SDIP in Nepal showed that the impact of the intervention would have disappeared just three years after its inception[45]. Similarly, the outcomes of the Mchinji beneficiary households remain unclear: although a small proportion of households demonstrated that they were able to start a business and owned productive assets, their average composition (mostly comprising elderly heads of households and orphaned children) led the authors to conclude that once the cash transfer was interrupted, the ultra-poor and labour-constrained households were likely to revert to the same socioeconomic position they were in before enrolment in the Mchinji project[38]. For this reason, the authors strongly advised that beneficiary households be provided with adequate advance notice and assistance with savings plans[38].

### 6.3.2 Microfinance interventions

Financial sustainability is today one of the main deterrents to the integration of health-related activities and objectives within microfinance programmes. Potential funders may fear that funds are used for other purposes, including TB control, which may threaten the performance of microfinance. It is likely, therefore, that to encourage the use of microcredit for public health purposes, including TB control, in the future it may be necessary to secure additional funding.

Some of the programmes included in this review, such as IGVGD in Bangladesh[73] and the intervention run by the Cambodia Health Committee[40], became part of the governmental activities of the host countries. In Cambodia, in particular, the interests on the loans provided through the village banking were used to establish

a Village Health Fund and enabled the training of 96 village agents who conducted community education and assisted in patient detection and follow-up. The food supplementation that was started in collaboration with the World Food Programme, consisting of a supplement of 15 kilograms of rice, 700 millilitres of cooking oil and two cans of fish, is now a nationwide component of the Cambodian National Health Strategic Plan for TB Control[40].

Impact sustainability has been tested by at least three BRAC impact evaluations[58,72,80]. In one study (Rural Development Programme), impact data were collected prospectively two years after the end of the intervention[80]. In the other two studies (IGVGD and CFPR/TUP), outcomes were monitored regularly at multiple points in time in order to assess the long-term impact of the intervention[58,72]. Of these three studies, only the Rural Development Programme and CFPR/TUP impact evaluations demonstrated that the effect of the intervention was maintainable. In these studies the effect on both food quantity and quality was maintained after the end of the intervention. Additionally, the proportion of CFPR/TUP beneficiaries who emerged from extreme poverty rose from 37% (at the end of the intervention) to 55% after two years from the end of the intervention[80]. Significant determinants of sustainability were identified through the earner–member ratio, change in self-perceived crisis coping ability, land accumulation, value of livestock and participation in social functions[80].

## Table 6.1 Cash transfer intervention costs

| Country/programme | Budget (US$) | N. beneficiary households | Average cash transfer/household/month (US$) | Costs transfer ratio (CTR) | Proportion of national GDP (%) |
|---|---|---|---|---|---|
| Mexico/PROGRESA[78,86] | 3 700 000 000 (2007) | > 5 000 000 (2007) | 20 | 0.04 | 0.7 (2005) |
| Honduras/PRAF[78] | 25 000 000 (2005) | 411 000 (2005) | 17 | 0.28 | NA |
| Nicaragua/RPS[19,78] | 22 000 000 over six years | 22 492 (2005) | 25 | 0.21 | 0.2 (for first three years) |
| Colombia/PFA[19,48] | 336 000 000 for first three years | 400 000 (2005) | 50 | 0.05 | 0.2 (2007) |
| Brazil/BF[19] | 4 500 000 000 (2008) | 11 800 000 (2008) | 30 | NA | 0.4 (2008) |
| Ecuador/BDH[19] | 194 000 000 (2005) | 1 046 416 (2006) | 15 | 0.04 | 1 (2004) |
| Jamaica/PATH[19,43] | 245 000 000 (2007–08) | 300 000 individuals (2008) | 45 | 0.13 | NA |
| Zambia/SCT[37,79] | 40 300 000/year | 200 000 | 15 | 0.15 | 0.4 (2007) |
| Malawi/Mchinji[38] | 185 000/month | 11 400 (2009) | 14 | 0.14 | NA |
| Malawi/DECT[26] | 430 000 in five months | 10 000 individuals | 11 | 0.08 | NA |
| Ethiopia/PSNP[36] | 500 000/year | 7 000 000 individuals | 45 (for all 2005) | NA | NA |
| Bangladesh/RMP[53] | 27 000 000 (2005) | 41 540 women (2006) | 22 per woman | NA | NA |

# 7. Discussion

Although no direct effect on TB could be demonstrated, the large majority of the cash transfer interventions reviewed in this document provide convincing evidence of the overall positive impact of cash transfer interventions, either conditional or unconditional, on some of the major social and structural determinants of TB. Concerning microfinance, impact evidence seems to be less conclusive than that observed for conditional cash transfer. However, collectively the evidence makes a strong case for the potential impact of these interventions on factors epidemiologically linked to TB.

Several limitations hamper the drawing of definitive conclusions: despite the extensive review of references, it is possible that important data have been left out, either because they have not yet been published or because they are available only within the circuits of NGOs and governmental bodies. Furthermore, it cannot be excluded that the same or better impacts can be achieved through other forms of social protection interventions that were not appraised in this review. However, it is unknown if and the extent to which these factors could have biased the results obtained. Secondarily, the evidence presented in this review comes from a very small and extremely heterogeneous pool of studies in terms of contexts, methods, outcomes and quality of evaluation. This heterogeneity is an inherent characteristic of this type of systematic review; it makes synthesis of the evidence methodologically challenging and means that the overall conclusions are likely to raise doubts rather than offer tangible policy recommendations. On the other hand, as suggested by Petticrew and colleagues, public health researchers should learn from economists and adopt a "mixed economy" approach, a method in which different type of experimental and non-experimental evidence, although heterogeneous, can be brought together to answer important policy questions[81].

Finally, the quality of the control group selected and adjustment for important confounding factors mean that the impact evaluations are not always methodologically rigorous (especially those derived from unconditional cash transfer and microfinance programmes).

Despite the above limitations, we can use the gathered evidence to answer the original questions posed by this review.

## 7.1 Do social protection interventions have a quantifiable impact on outcomes epidemiologically linked to TB?

### 7.1.1 Cash transfer

With the exception of the interventions in Ecuador, Ethiopia and Honduras, all the cash transfer interventions, either conditional or unconditional, appeared to have an impact on household socioeconomic position, whether measured through household consumption expenditure or asset ownership. The Zambia social cash transfer and the Mchinji intervention in Malawi did not show any significant impact on the household income level; however, participants in both interventions consistently reported an improvement in household living conditions. In Zambia, in particular, the social cash transfer appeared to mitigate the impact of HIV, probably as a result of the reduced vulnerability of the participant households. At least in Colombia, Mexico and Nicaragua, the observed effect on household socioeconomic position translated

into significant poverty reduction among the intervention households. This result was less evident in Bangladesh and Honduras, probably as a result respectively of the extremely poor household living conditions and the small size of the cash transfer.

The evidence presented demonstrated that cash transfers were mainly used to increase the household food expenditure. A significantly higher food share was also observed in those countries (such as Ecuador) where the interventions did not impact the overall level of household consumption expenditure. The increase in food expenditure was almost consistently accompanied by an increase in food intake, measured in terms of number of meals, food quantity or kilocalories consumed. As a result of the increased food intake, both the Zambia cash transfer and the Mchinji intervention beneficiaries consistently reported a significant reduction of the proportion of households still hungry after a meal. In particular, Mchinji participant households declared a significant reduction in the number of days without enough to eat and a significantly higher food storage capacity.

The significant positive impact on household food security was further confirmed by the marked improvement in the quality of food consumed. This effect was consistently documented both in terms of food diversity (such as the number of food groups consumed) and in terms of food categories consumed. In particular, beneficiary households of cash transfer interventions implemented in Colombia, Malawi, Mexico, Nicaragua and Zambia consistently documented a significant increase in the consumption of food containing proteins. At least for the interventions in Malawi and Zambia, this effect was not immediately attributable to any health or nutritional education provided to the beneficiaries. Despite this undoubted effect on household food security, the Mchinji and Bangladesh cash transfers could not demonstrate a significant effect on the nutritional status of the beneficiary households. The explanation probably lies in the so-called "leaking bucket effect", whereby the improvement in food access and utilization is offset by limited access to non-food inputs, such as poor-quality health care services, education and environmental sanitation[53].

All the interventions demonstrated a clear significant impact on the health-seeking behaviour of the beneficiary households, independent of the type of services and the age group categories assessed. In some interventions, for example Mexico, Zambia and the Mchinji social cash transfer in Malawi, beneficiary households reported an improvement in the health conditions of the household members, but it remains unclear whether these resulted from the improvement in health-seeking behaviour or the improvement in nutrition and hygiene conditions. The overall improvement in the health status of the cash transfer recipients in Zambia and Mexico probably explains the reduction respectively in household health expenditure and the frequency of hospitalization, as well as the use of private health care providers. Three aspects deserve special attention, given their potential implications for TB control. First, in Nicaragua, the improvement in health-seeking behaviour was particularly notable among the extremely poor. Furthermore, in Nicaragua the health care service supply was potentiated by government-contracted NGOs, probably contributing to the success of the intervention. Second, it is unclear whether cash transfers remove the cultural and economic barriers influencing the frequency and type of health care providers accessed. Whereas the only conditional cash transfer in Malawi demonstrated the capacity to overcome the psychological and economic barriers limiting people's access to HIV care services and – to some extent – also the geographical barriers, this was not observed among the JSY beneficiaries in India, where the intervention did not seem to be reaching the poorest women at the highest rate as planned[44]. Third, at least in Nepal, the cash transfer did not significantly reduce the catastrophic costs encountered by the intervention participants, as demonstrated by the still 2% of households pushed into poverty as a result of the delivery care payment.

### 7.1.2 Microfinance

In terms of household socioeconomic position and poverty, the evidence suggests that microfinance can increase household income and expenditure and effectively bring families out of poverty. However, as stated by Goldberg[39], the experiences discussed here are quite heterogeneous in terms of type of clients served, packages of benefits and contexts where they operate, making it difficult to conclude that "microfinance works". This does not imply that there is little to be optimistic about, but methodological flaws, particularly the lack of a proper control group, make it impossible to

draw conclusions about the genuine effectiveness of microcredit. The paradox of microcredit is that while it has had extraordinary successes as an antipoverty intervention, it is now almost impossible to find a community where at least some of its members do not have access to microcredit. This makes it even harder to identify a correct comparison group to measure its impact. As a consequence, today international experts seem to be more inclined to believe that there may be "little pockets here and there of people who are better off, but the average effect [of microcredit] is weak"[82]. In particular, it is argued that microcredit cannot transform lives, but at best can ameliorate difficult circumstances, giving people a more reliable source of credit[82].

In terms of food security and food consumption patterns, the paucity of data, together with the conflicting results, make evidence even less convincing. Only one intervention, CFPR/TUP, provided strong evidence that this intervention could significantly address food insecurity, dietary improvement and prevention of malnutrition among ultra-poor households[61]. For IMAGE and Wisdom[41,60], results did point in the hypothesized direction, but none of them reached the significance level. Although this clearly limits the strength of the study conclusions, in the evaluation of complex interventions with multiple outcomes, not only should the significance level be taken into account, but also the direction, consistency and congruency of observed outcomes[69].

When looking at the impact on health-seeking behaviours and health care access, results appear more encouraging, but again the limited number of studies hampers any definitive conclusions. Furthermore, in one case (Rural Development Programme, Bangladesh) the authors detected a negative effect of microcredit on access to formal health care services[64].

Besides the limited evidence, what makes the interpretation of the microfinance results even more difficult is that few of the interventions reviewed in this document are examples of "pure" microcredit. The vast majority of interventions are packages combining different components (such as education, vocational training and food support). Furthermore, most of the studies did not attempt to disentangle the effects of single components and assess the determinants of the intervention success. The only exception to this was the IMAGE study. When the authors compared the impact of the combined intervention (microfinance with a HIV training curriculum) with microfinance only, they found there was no evidence that one of the two interventions was producing a greater improvement in economic well-being, whereas only the combined intervention resulted in a significant improvement in all indicators of women's empowerment (intimate partner violence and HIV risk behaviours)[69]. In another study, BRAC assessed the determinants of poverty mobility (measured by change in household income growth)[58]. In their analysis, the authors found that poverty graduation was associated with initial household wealth, length of membership and changes in village-level infrastructure, suggesting that microfinance can only work if accompanied by structural changes at the community level[58].

## 7.2 What are the biggest challenges limiting the implementation of cash transfer and microfinance for TB control?

Although the large heterogeneity across interventions hampers any definitive conclusions about the effectiveness of interventions, it also suggests how the design and implementation of these interventions have been successfully tailored to local capacities, resources available and welfare priorities[7]. This result per se suggests that it may be possible to adapt these interventions to the scope of TB control and in contexts where TB is endemic.

Nonetheless, critical issues persist. First, the idea of conditioning the cash transfer has been challenged by several arguments relating to social externalities, power, autonomy and political economy[7]. More pragmatically, the adoption of conditional cash transfer programmes for TB control purposes is mainly challenged by the fact that the success of these strategies depends on the existence of effective primary health services and local infrastructures[17]. This means that the sole application of conditionality is unlikely to be the most efficient way to achieve a significant increase in case detection and treatment success rates in countries with limited administrative capacities and poor-quality TB care services. These arguments are apparently contradicted by the programmes conducted in Colombia, Malawi, Nicaragua and Zambia, suggesting that minimal infrastructures and administrative capacities do

not necessarily preclude the success of conditional cash transfer interventions. In some cases the implementation of the conditional cash transfer programme led to an acceleration of health care service improvement.

Second, it is unclear whether TB-affected families or very poor households at high risk for TB should be targeted by social protection interventions. In the case of microfinance, experiences with people affected by HIV/AIDS suggest that targeting vulnerable populations (such as TB-affected families) with microfinance may result in poor loan management, inadequate use of the loan for the intended purposes and weak repayment systems[11,25], though the experience from Cambodia with TB-affected families shows that this is not always the case. Targeting TB-affected families with cash transfers may be similarly challenging from an ethical perspective, as unaffected families may be equally in need of assistance. Furthermore, the potential for stigma needs to be carefully considered.

Targeting very poor households at high risk of TB is also controversial. Microfinance institutions are generally reluctant to enrol very poor households because of their uncertain repayment capacity. The IGVGD and CFPR/TUP interventions demonstrated that it is possible to bring even the most destitute households to a position where they can successfully access microfinance services[58,72]. Nonetheless, when the programmes were appraised in more detail it emerged that programme success did not appear to be principally due to microfinance. Authors reported that the main incentive to participation in IGVGD was the receipt of supplementary food, whereas the microfinance benefit was probably the least successful component of the intervention, with an 8% repayment default rate among the clients[72]. It is also notable that the most successful microfinance programmes included in this review involved creative and flexible collaboration between microfinance and safety net programmes (for example all the BRAC programmes)[72] or training and education components (for example the IMAGE intervention)[41]. In conclusion, targeting with microfinance ultra-poor families potentially at risk of TB is possible, but to be effective additional health, nutritional and educational support may be necessary. Targeting very poor households or TB-affected families can raise issues of accuracy, equity, sustainability and stigma, even for cash transfer interventions.

Finally, uncertain evidence was associated with both the financial and impact sustainability of these interventions, as well as the potential for unethical or unexpected events.

## 7.3 Persisting knowledge gaps

Beyond the issues of conditionality, targeting and sustainability, other aspects, not directly addressed by this review, have the potential to challenge the adoption of cash transfer and microfinance interventions in the field of TB control.

First, the design and implementation of successful social protection interventions cannot preclude attempts to gain a more rigorous understanding of the epidemiology of TB inequalities. It remains still unclear, for example, how to conceptualize these structural determinants and measure them in epidemiological terms: What is the causal pathway through which these determinants act to increase the risk of TB in a population, and which mechanisms are the most likely to be affected by social protection interventions? What is the residual impact of these determinants after accounting for individual-level risk factors, especially HIV? Does this impact vary across the different stages of TB?

Second, tackling the social and structural determinants of health is a complex task, whose achievement is likely to require the involvement of institutions from beyond the public health sector for the implementation of authentic cross-sectoral partnerships. So far programmatic experiences are scarce and little operational research has been conducted to assess how these partnerships can be most efficiently implemented, the relative advantages of different collaborative options[11], whether these models should be different depending on the size and the level of operation of the institutions involved (for example, governmental versus nongovernmental, local versus national level), and what additional capacity building and financial costs should be accounted for to manage the reciprocal expanded activities and mandate. These questions can be of even more concern in the case of TB, a disease whose control is currently strongly delegated to TB control programmes and institutions with a fairly rigid mandate and often constrained budgets. For example, it is not clear yet what criteria should be met by the social protection programme and the institution delivering it to be able to incorporate

also a TB control objective: Are the national TB control programmes the level at which these cross-sectoral partnerships are most likely to be successful, and if so, what forms of integration between programmatic institutions and TB control programmes can be designed to make these partnerships sustainable in the long run? What extent of improvement in the performance of the TB control programme should be achieved to justify the extra costs associated with the expansion of its mandate? What is the meaning of these cross-sectoral partnerships and what would be the role of the national TB control programme in countries where despite successful DOTS implementation, TB trends are still not reversing? The capacity to address these questions will largely influence the acceptability of social protection interventions by local national TB control programmes, the success of the partnerships created and ultimately the impact on TB.

Third, the relative advantages of different forms of social protection remain largely unknown. Several studies, for example, have demonstrated that food transfers can be successfully used to support TB-affected individuals urgently in need of nutritional rehabilitation to improve the disease outcome[83–85]. On the other hand, food transfers are not always able to promote treatment access and adherence to TB treatment[83]. Finally, compared to cash transfers, food transfers appear more likely to result in food security improvement; however, as for cash transfers, even with food transfers this does not necessarily translate into a quantifiable improvement in the nutritional status of the beneficiaries.

Whether the strategy adopted will aim to reduce TB susceptibility in the general population, improve nutritional status of TB patients or enhance case finding and treatment, important evidence gaps remain also in relation to the cost-effectiveness, acceptability and potential consequences on the local economy of interventions. Considerations about cost-effectiveness are hampered because of the limited number of studies comparing food and cash transfers and also because their relative effectiveness varies by outcome. In general, costs are estimated to be at least 25% higher in food transfer interventions compared to cash transfer ones[53]. This is consistent with what was observed in a food transfer intervention conducted in Timor-Leste to support TB treatment, where the incentives effectively doubled the cost of TB treatment per patient. These costs were not offset by a significant improvement in TB treatment outcomes[83], making for the moment arguable the case of food incentives for TB care support. It is possible that in Africa, where treatment adherence is lower and food insecurity more severe, this type of food incentive can be more cost-effective; however, future research is needed to confirm this eventuality. In terms of acceptability, it is known that intervention beneficiaries tend to generally express preference for the intervention received (for example, cash if cash is provided or food when food is provided)[26,53]; however, food and cash transfers have both advantages and disadvantages whose overall balance will vary across population and contexts and can influence the intervention's acceptability, sometimes in unpredictable ways. For example, while in Malawi the beneficiaries of the Dowa Emergency Cash Transfer Project expressed a preference for pure cash transfers mainly because of the flexibility of buying what they wanted to buy and the sense of empowerment resulting from the capacity to finally make choices[26], beneficiaries of the Productive Safety Net Programme in Ethiopia complained about the need to travel to markets rather than collecting food directly from the pay-points. It is generally acknowledged that cash transfers should be prioritized in areas where markets are available and functioning, whereas in areas constrained by physical inaccessibility of markets and limited food supply, food transfers are likely to be a better choice[75]. However, this conclusion is based upon a limited number of studies conducted on the general population. It is unknown whether the same determinants of acceptability would still be valid when the intervention is targeted to TB-affected families or individuals. Qualitative and ethnographic studies are essential to understand which type of transfer is likely to work better and why when the intervention aims to pursue TB control objectives.

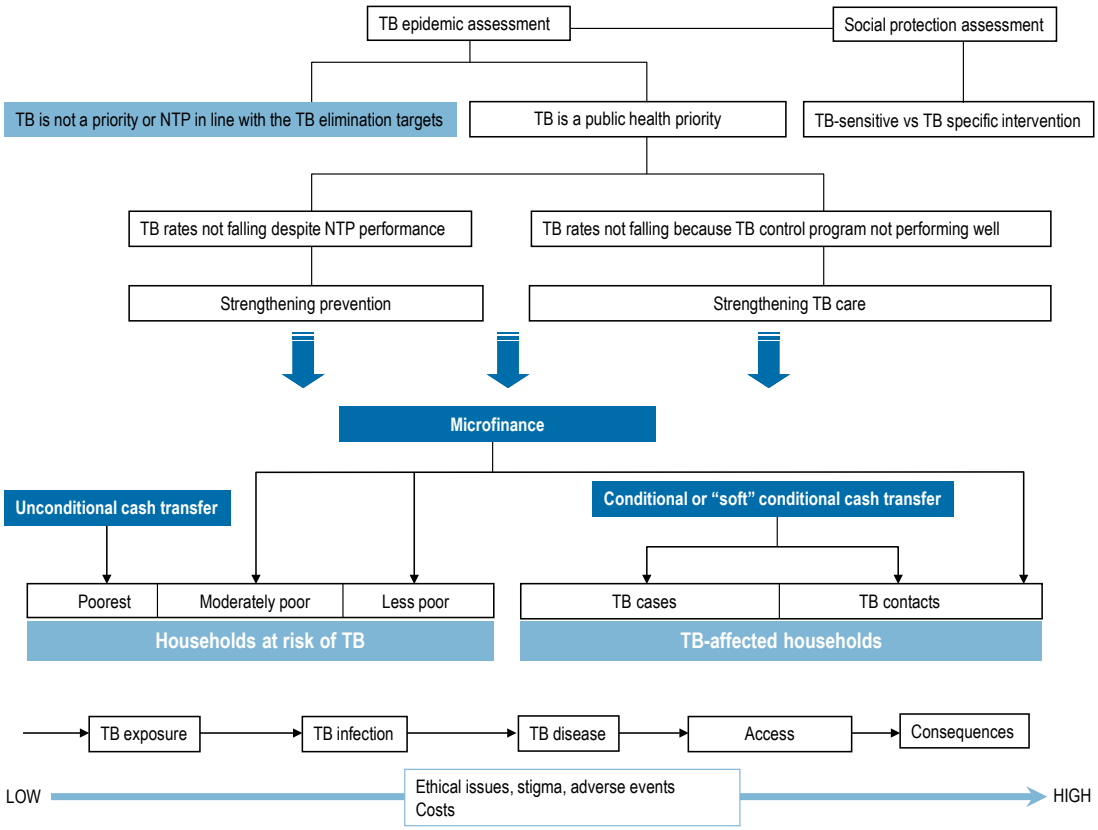
Finally, while food transfers have the capacity to interfere with the local food market (by undermining trade and reducing food supply into the market from farmers), the injection of cash into relatively weak economies can be associated with an increase of food prices because supplies may not be able to keep up with the increased demand created, a phenomenon that can ultimately penalize those not benefitting from the intervention[53].

# 8. Interim guidelines for future action: an implementation framework

Although the evidence gathered in this review is not yet sufficient to formulate concrete recommendations, it still has the capacity to indicate the place of social protection interventions in the fight against TB. Clearly these interventions should not be implemented at the expense of more traditional biomedical approaches. Nonetheless, cash transfer and microfinance interventions do appear to have the potential to effectively contribute to the prevention of unnecessary new cases of TB in the population (by reducing the susceptibility of individuals) and to strengthen the current TB control strategy (by creating better and more receptive conditions for the delivery, acceptance and success of biomedical strategies currently adopted).

While the lack of evidence directly referable to TB indicators limits the vision of the possible way forward, there are still important messages emerging from the range of experiences outlined in this review that can provisionally guide the implementation of cash transfer and microfinance interventions for TB control. This final section describes how the evidence gathered should inform an implementation framework until more direct evidence becomes available (figure 8.1).

## Figure 8.1 Implementation framework



There are several questions to consider in the design and implementation of social protection interventions finalized to the control of TB, the most important of which are the following.

## 8.1 What is the TB epidemiological context?

Is TB a priority that the programme should target or is there the urgent need to protect a population from destitution, which may contribute to people's vulnerability to TB? In the latter case, what is the extent of destitution the target population is suffering from? Is there evidence that TB incidence rates are not declining (or are increasing) despite the good performance of the TB control programme? What are the supply- or demand-side factors that affect the TB control programme performance? If they are mostly on the demand side, what are the barriers that prevent people from accessing TB care services? Is TB impacting households to the extent that it is impossible for them to meet potential conditionalities imposed?

In terms of epidemiological context, the use of these interventions seems to be justifiable either in countries where TB is not falling despite the performance of the national TB control programmes, or in countries where TB rates are still high because economic, geographical, cultural or health system barriers limit the performance of the national TB control programme (figure 8.1). The specific context should inform the scope of the interventions that can either strengthen TB prevention or enhance access to TB care. In turn, the choice of the intervention objective should guide the selection of the most appropriate social protection approach and ultimately help in identifying the best solution to the main challenges identified in this review.

Below we have provided a range of possible options for each challenge. Given the lack of direct evidence, these options should be considered as interim suggestions, the appropriateness of which has to be verified through proper impact and process evaluation studies.

### 8.1.1 Conditionality options

The use of conditional forms of cash transfer may find its best application to enhance TB care access, in terms of TB testing or chemoprophylaxis among TB contacts or TB treatment adherence for TB patients (16). As discussed, this may not be a viable option in contexts characterized by inadequate TB care services and limited administrative capacities. However, as happened for PRAF in Honduras and RPS in Nicaragua, it could be that the introduction of conditional cash transfer for strengthening TB care may also accelerate the improvement of required health care services. Nonetheless, it is unlikely that these changes would happen soon. In these circumstances, it may better to test conditionalities on a small scale and only under very specific TB control-related behaviours. Alternatively, it may be more appropriate to completely remove any conditionality and use the cash transfers to address household food insecurity and living conditions to reduce TB vulnerability among TB close contacts or members of communities with high TB prevalence. The unconditional cash transfer interventions reviewed in this document demonstrate, in fact, that conditionality can be eliminated to tailor the cash transfer to the local conditions[26,37,38] without affecting the capacity of the intervention to impact major TB vulnerability determinants such as food insecurity and low socioeconomic position.

Another option (figure 8.1), as suggested by Adato and colleagues, would be to apply a "soft" form of conditionality in which conditions are simple or made less stringent in areas characterized by poor TB services or in the case of mobility impairment of the cash recipients[7]. There is also the possibility to link TB control activities to cash transfer programmes in a way that facilitates attendance of TB care services without making it compulsory (for example, by conditioning the cash transfer on the attendance of workshops and training sessions about TB to help TB-affected families to overcome the fear and the stigma of approaching the TB services without imposing on them their attendance).

In conclusion, should conditionality be deemed feasible and appropriate for the scope of the intervention, it should be always be preceded by the formal assessment of the features of the local TB epidemic and designed with a certain degree of flexibility and creativity in order to meet the specific challenges.

### 8.1.2 Targeting options

Interventions aiming to reduce TB susceptibility in a population should be mainly targeted to households that because of TB history or their

socioeconomic profile could be considered at high risk of TB. While microfinance interventions may be at increased risk of failing if they are targeted to very poor households, evidence from this analysis suggests that this approach may be successful even with extremely vulnerable households, provided microfinance is combined with education and other forms of socioeconomic safety nets[40,41,72,73]. Alternatively, microfinance services could be targeted to the least poor in the socioeconomic spectrum of the target population (figure 8.1).

This is a possible solution, but inevitably this approach will reach fewer families and will be more likely to miss those most in need of social protection. A possible way to avoid mistargeting and allow for greater accuracy in the selection of beneficiaries is the use of multiple criteria[7]. These criteria are largely interrelated and could include (a) living in extreme poverty, as assessed by econometric or asset-based indices; (b) not having household members able to work (as a consequence of age of the household members, illnesses and other disabilities); (c) having a high dependency ratio; and (d) not having other forms of social assistance[7]. Greater sensitivity in the targeting process can make the programme more financially sustainable, and also protect the intervention beneficiaries from the jealousy and hostility of other community members not targeted by the intervention[38].

If instead TB-affected households are chosen to be the beneficiaries of the cash transfer or microfinance intervention, stigma may be avoided by selecting the households based on characteristics that capture both TB-affected families and destitute households[7]. This is, for example, the approach used in the Social Cash Transfer programme in Zambia, where targeting criteria did not distinguish between HIV-affected households and those that were incapacitated by other factors. Rather, by targeting households that were destitute or without members able to work, the programme managed to target households likely to be HIV affected without stigmatizing them or excluding households equally in need of social support[37].

In these cases, the accuracy of the targeting should be always verified through qualitative assessment and TB surveys aimed to determine how many TB-affected families were actually captured by the targeting criteria. Because TB-affected families tend to experience consistently severe forms of social and material deprivation, this approach is likely to be even more efficient than in the case of HIV-affected families, which are not always the most destitute in a community.

For the future, more operational research should be undertaken to understand better the relative advantages of different targeting options in different epidemic settings able to achieve a balance between cost containment and equitable inclusion.

### 8.1.3 Ethics and costs issues

The burden of ethical concerns and costs is likely to be greatest for interventions aiming to strengthen TB care for TB-affected households and less for strengthening prevention for households at risk of TB (figure 8.1).

In terms of costs, the financial burden of these interventions is likely to be less for microfinance, which in principle is self-financing, than for cash transfer programmes, which by definition require that funds are donated to recipients. Nonetheless, in our analysis we could not find any evidence that resources had been secured to guarantee the long-term financial sustainability of the microfinance interventions implemented. This is essential to ensure the financial sustainability of the interventions and most importantly to avoid a situation where excessive debt forces clients further into poverty and despair.

Concerns about the costs of cash transfers should be balanced against the potential mitigation effect of the impact of TB on households, communities and the national economy. A variable proportion of these costs is for administrative expenses and especially conditionality costs. Removing these costs would substantially reduce administrative costs, but it is unknown whether this would reduce the effectiveness of the programmes[48]. In TB control terms, possible options to make these interventions financially more feasible and sustainable could include setting very strict exit strategies for the beneficiaries (for example, treatment or chemoprophylaxis completion, household socioeconomic position upgrading), or applying conditionality only under very specific TB control-related behaviour to reduce the cash transfer size. As demonstrated by this analysis, these programmes are more likely to be successful when integrated within national social security policies. In the light of TB control this may mean ensuring that TB patients become part of local social protection strategies, as is already happening for orphans, pensioners or chronically ill people in several parts

of the world[19]. This does not have to happen from the beginning of the intervention, but it does appear to be the only way to make the use of cash transfer sustainable for TB control purposes.

The unethical and unexpected adverse effects observed in some cash transfer interventions remind us that interventions mobilizing resources among severely deprived populations should be handled with caution. Although isolated, some of these experiences showed that paradoxically even economic growth has the potential to increase the prevalence of some important TB risk factors, such as smoking, alcohol consumption, obesity and possibly diabetes[86]. This is particularly true in those countries where this growth is too rapid or not accompanied by an equal distribution of resources, education, cultural and normative progress, and public health policies able to promote healthy behaviours. However, as observed in Brazil and Ecuador, the main danger of offering money or food as an incentive to encourage TB patients to be tested or complete treatment is that the extreme poor may react by engaging in practices that allow them to continue to qualify, that is, TB patients may wish to remain sick to secure for themselves and their households the incentive provided.

Given the small number of interventions evaluated and the relatively short follow-up period characterizing most of the impact studies, it may be premature to judge the applicability of social protection interventions for TB control just based on these potential unexpected effects. However, future TB policy changes will have to acknowledge these complexities and remember that poverty alleviation strategies are no magic bullets, but only one component of a broad range of activities necessary to ensure sustainable development.

## 8.2 What is the best partnership model between TB control and social protection programmes?

In principle, given the complexity and the scale of the interventions described in this review, it may be easier and more efficient to work in collaboration with well-established social protection platforms operating within vulnerable communities and expand their scope to encompass TB control objectives (TB-sensitive interventions), rather than improvising independent, ex novo interventions addressing exclusively TB control (TB-specific interventions). The use of TB-sensitive interventions would have the multiple potential to benefit from the expertise of local institutions, enhance coordination, reciprocally boost the rational and financial investment both for TB control and social protection interventions, and ultimately contribute to the generation of better and stronger impact and operational evidence. Most importantly this would ultimately result in interventions that are inclusive, non-stigmatizing and non-discriminatory and that promote equity[14]. Nonetheless, the countries most in need of social protection are also those where the need to incorporate other interventions may be overwhelming and potentially able to divert human and financial resources from more compelling social protection objectives. Furthermore, these interventions may often lack the necessary baseline data to demonstrate an impact of the interventions on TB indicators[14]. In these circumstances, a TB-exclusive approach in which social protection interventions are designed ex novo specifically for TB control purposes may be more feasible and more useful to generate evidence.

The decision between TB-sensitive and TB-exclusive interventions should be always preceded by a careful consideration of the local public health relevance of TB and the strength and focus of the existing social protection programme. At the same time, broadening the scope of microfinance institutions or cash transfer programmes may encounter the diffidence of funders, who may be hesitant to sponsor collaborative projects in which the TB control component may interfere with the performance of the original programme. Furthermore, such flexibility may imply additional costs associated with setting up new operating procedures, staff training and the creation of new joint forms of management. The costs of flexibility may be a deterrent especially for microfinance, where the pressure to demonstrate financial sustainability remains the biggest obstacle to the introduction of any health-related objective in the microfinance industry's agenda[11].

A potential solution could be to consider these further inputs separately from the core services of the intervention and to identify an ad hoc donor potentially happy to cover at least part of these additional costs. An alternative approach could be to preliminarily implement a TB-specific intervention, completely separate from the existing social protection programme. If the impact evidence demonstrates a clear positive effect of the intervention, TB experts can advocate broadening the scope of the existing social protection intervention to make it more TB sensitive.

# 9. Conclusions

Addressing TB controls means essentially to tackle the unacceptable socioeconomic inequalities driving the global distribution of this disease and its adverse consequences. This review did not, and realistically could not, provide a comprehensive assessment of all the social protection interventions available, nor did it provide definitive answers about their potential role in reducing the burden of inequalities. It rather aimed to stimulate new thinking, research and practice, all of which is essential to build innovative and effective efforts for TB control. Big conceptual and methodological obstacles persist: to date the wide literature on the social and structural determinants of TB has led to no concrete policy recommendations, mainly because socioeconomic interventions for public health purposes are a relatively new concept still based on rapidly evolving methodology. Furthermore, even when potentially feasible ideas are available, researchers are reluctant to join initiatives with actions going beyond their range of expertise. These factors have all contributed to maintaining the distance between biomedical sciences and other disciplines outside the health care sector, undermining our efforts towards TB elimination.

By highlighting practical lessons, challenges and successes of these interventions, this review has contributed to gaining a deeper understanding of the potential for synergy between social protection interventions and TB control. We hope that this document will encourage TB researchers to collaborate across sectors to test feasible and ethical interdisciplinary interventions targeting economic stability, housing, urban regeneration, food security and other social and structural determinants of TB. The need for this research has never been greater, given the currently deteriorating economic conditions worldwide, the alarmingly high urbanization rate and the rapid population growth in developing countries. As in the 19th century, with adequate cultural and economic investments, TB control can become once again a model of public health intervention combining scientific knowledge and humanitarian ideals.

# References


1. *Closing the gap in a generation: health equity through action on the social determinants of health*. Commission on Social Determinants of Health Final Report. Geneva, World Health Organization, 2008.
2. Lönnroth K, Jaramillo E, Williams BG, Dye C, Raviglione M. Tuberculosis: the role of risk factors and social determinants. In: *Equity, social determinants and public health programmes*. Geneva, World Health Organization, 2010:221–237.
3. Raviglione MC. TB prevention, care and control, 2010–2015: framing global and WHO strategic priorities. In: *Stop TB Symposium: addressing poverty through quality TB control and research*. 40th Union World Conference on Lung Health, Cancun, Mexico, 2009.
4. Lönnroth K, Castro KG, Chakaya JM, et al. Tuberculosis control and elimination 2010–50: cure, care, and social development. *Lancet*, 2010, 375:1814–1829.
5. Dye C, Lönnroth K, Jaramillo E, Williams BG, Raviglione M. Trends in tuberculosis incidence and their determinants in 134 countries. *Bulletin of the World Health Organization*, 2009, 87:683–691.
6. Oxlade O, Schwartzman K, Behr MA, et al. Global tuberculosis trends: a reflection of changes in tuberculosis control or in population health? *International Journal of Tuberculosis and Lung Disease*, 2009, 13:1238–1246.
7. Adato M, Bassett L. *What is the potential of cash transfers to strengthen families affected by HIV and AIDS? A review of the evidence on impacts and key policy debate*. Joint Learning Initiative on Children and HIV/AIDS. Washington, DC, International Food Policy Research Institute, Food Consumption and Nutrition Division, 2008.
8. Devereux S, Sabates-Wheeler R. *Transformative social protection*. IDS Working Paper 232. Brighton, United Kingdom, University of Sussex, Institute of Development Studies, 2004.
9. aids2031 Social Drivers Working Group. *Revolutionizing the AIDS response: building AIDS-resilient communities*. Synthesis Paper. Washington, DC, International Center for Research on Women, 2010.
10. Kim J, Lutz B, Dhaliwal M, O'Malley J. The "AIDS and MDGs" approach: what is it, why does it matter, and how do we take it forward? *Third World Quarterly*, 2011, 32:141–163.
11. *Global review of good practices on the intersections between HIV/AIDS and economic empowerment*. Final Report. Ford Foundation, 2009.
12. Temin M. *HIV-sensitive social protection: what does the evidence say?* New York, United Nations Children's Fund, 2010.
13. Yetes R. *Social protection in the context of the HIV epidemic: state of the evidence and implications for further action*. New York, United Nations Children's Fund, 2010.
14. *UNAIDS expanded business case: enhancing social protection*. Geneva, Joint United Nations Programme on HIV/AIDS (UNAIDS), 2010.
15. Beith A, Eichler R, Weil DE. Worldwide: incentives for tuberculosis diagnosis and treatment. In: Eichler R, Levine R, Performance-based Incentives Working Group, eds. *Performance incentives for global health: potential and pitfalls*. Washington, DC, Center for Global Development, 2009:237–255.
16. Hargreaves JR, Boccia D, Evans CA, Adato M, Petticrew M, Porter JD. The social determinants of tuberculosis: from evidence to action. *American Journal of Public Health*, 2011, 101:654–662.

17. Rawlings LB, Rubio GM. Evaluating the impact of conditional cash transfer programs. *World Bank Research Observer*, 2005, 20:29–55.

18. Samson M, van Niekerk I, Mac Quene K. *Designing and implementing social transfer programmes.* Cape Town, Economic Policy Research Institute, 2006.

19. Fiszbein A, Schady N. *Conditional cash transfers: reducing present and future poverty*. Washington, DC, World Bank, 2009.

20. Mohindra KS, Haddad S. Evaluating the unintended health consequences of poverty alleviation strategies: or what is the relevance of Mohammed Yunus to public health? *Canadian Journal of Public Health*, 2008, 99:66–68.

21. Daley-Harris S. *State of the Microcredit Summit Campaign: report 2009*. Washington, DC, Results Educational Fund, 2009.

22. Pronyk PM, Hargreaves JR, Morduch J. Microfinance programs and better health: prospects for sub-Saharan Africa. *Journal of the American Medical Association*, 2007, 298:1925–1927.

23. Bond V, Chileche M, Sullivan C, Magazi B. *The converging impact of tuberculosis, HIV/AIDS, and food insecurity in Zambia and South Africa: final working report, February 2009*. Johannesburg, Regional Network on HIV/AIDS, Livelihoods, and Food Security (RENEWAL), 2009.

24. Thornton RL. Demand for and impact of learning HIV status. *American Economic Review*, 2008, 98:1829–1863.

25. Datta D, Njuguna J. Microcredit for people affected by HIV and AIDS: insights from Kenya. *Journal of Social Aspects of HIV/AIDS Research Alliance*, 2008, 5:94–102.

26. Devereux S, Mthinda C, Power F, Sakala P, Suka A. *An evaluation of Concern Worldwide's Dowa Emergency Cash Transfer Project (DECT) in Malawi, 2006/07*. Lilongwe, Malawi, Concern Worldwide, 2007.

27. Harling G, Ehrlich R, Myer L. The social epidemiology of tuberculosis in South Africa: a multilevel analysis. *Social Science and Medicine*, 2008, 66:492–505.

28. Tocque K, Bellis MA, Beeching NJ, Syed Q, Remmington T, Davies PD. A case-control study of lifestyle risk factors associated with tuberculosis in Liverpool, north-west England. *European Respiratory Journal*, 2001, 18:959–964.

29. Ogilvie D, Hamilton V, Egan M, Petticrew M. Systematic reviews of health effects of social interventions: 1. Finding the evidence: how far should you go? *Journal of Epidemiology and Community Health*, 2005, 59:804–808.

30. Zaza S, Wright-De Aguero LK, Briss PA, et al. Data collection instrument and procedure for systematic reviews in the Guide to Community Preventive Services. Task Force on Community Preventive Services. *American Journal of Preventive Medicine*, 2000, 18:44–74.

31. Egan M, Bambra C, Petticrew M, Whitehead M. Reviewing evidence on complex social interventions: appraising implementation in systematic reviews of the health effects of organisational-level workplace interventions. *Journal of Epidemiology and Community Health*, 2009, 63:4–11.

32. Armstrong R, Waters E, Doyle J. Systematic reviews in health promotion and public health interventions. In: Higgins JPT, Green S, eds. *Cochrane handbook for systematic reviews of interventions: version 2*. The Cochrane Collaboration, 2008, chapter 21.

33. Popay J, Roberts H, Sowden A, et al. *Guidance on the conduct of narrative synthesis: final report*. Swindon, ESRC Methods Programme, 2006.

34. Arai L, Britten N, Popay J, et al. Testing methodological developments in the conduct of narrative synthesis: a demonstration review of research on the implementation of smoke alarm interventions. *Evidence and Policy*, 2007, 3:361–383.

35. Gilligan DO, Hoddinott J, Taffesse AS. *An analysis of Ethiopia's Productive Safety Net Program and its linkages*. Washington, DC, International Food Policy Research Institute, 2008.

36. Devereux S, Sabates-Wheeler R, Tefera M, Taye H. *Ethiopia's Productive Safety Net Programme (PSNP): trends in PSNP transfers within targeted households*. Final Report. Sussex and Addis Ababa, Institute of Development Studies and Indak International, 2006.

37. Schüring E. *Cashing in: how cash transfers shore up Zambian households affected by HIV*. Berlin, GTZ, 2009.

38. Miller C, Tsoka M, Reichert K. *Impact evaluation report: external evaluation of the Mchinjii Social Cash Transfer pilot*. Washington, DC, Center for International Health and Developement, 2008.

39. Goldberg N. *Measuring the impact of microfinance: taking stock of what we know*. Washington, DC, Grameen Foundation, 2005.

40. Thim S, Sath S, Sina M, et al. A community-based tuberculosis program in Cambodia. *Journal of the American Medical Association*, 2004, 292:566–568.

41. Pronyk PM, Hargreaves JR, Kim JC, et al. Effect of a structural intervention for the prevention of intimate-partner violence and HIV in rural South Africa: a cluster randomised trial. *Lancet*, 2006, 368:1973–1983.

42. Gertler PJ, Boyce S. *An experiment in incentive-based welfare: the impact of PROGRESA on health in Mexico*. San Francisco, University of California Berkeley, 2001.

43. Levy D, Ohls J. *Evaluation of Jamaica's PATH program: final report*. Washington, DC, Mathematica Policy Research, 2007.

44. Lim SS, Dandona L, Hoisington JA, Spencer LJ, Hogan MC, Gakidou E. India's Janani Suraksha Yojana, a conditional cash transfer programme to increase births in health facilities: an impact evaluation. *Lancet*, 2010, 375:2009–2023.

45. Powell-Jackson T, Dev Neupane B, Tiwari S, Morrison J, Costello A. *Evaluation of the Safe Delivery Incentive Programme: final report of the evaluation*. Support to the Safe Motherhood Programme. Katmandu, Nepal, 2008.

46. Thornton R. *The demand for and impact of learning HIV status: evidence from a field experiment*. Harvard University, 2005.

47. Hoddinott J, Skoufias E, Washburn R. *The impact of PROGRESA on consumption: a final report*. Washington, DC, International Food Policy Research Institute, 2000.

48. Maluccio JA, Flores R. *Impact evaluation of a conditional cash transfer program: the Nicaraguan Red de Protección Social*. Washington, DC, International Food Policy Research Institute, 2005.

49. Attanasio O, Battistin E, Fitzsimons E, Mesnard A, Vera-Hernandez M. *How effective are conditional cash transfers? Evidence from Colombia*. Briefing Note 54. London, Institute for Fiscal Studies, 2005.

50. Attanasio O, Mesnard A. *The impact of conditional cash transfer programme on consumption in Colombia*. London, Centre for the Evaluation of Development Policies, Institute for Fiscal Studies, 2005.

51. Tembo G, Freeland N. *Impact of social cash transfers on household welfare, investment and education in Zambia*. Wahenga Brief. 2009.

52. Schüring E, Boonstoppel E, Michelo S. *Final evaluation report: Kalomo Social Cash Transfer scheme*. Lusaka, Zambia, Ministry of Community Development and Social Services and German Technical Cooperation (GTZ), 2007.

53. Ahmed AU, Quisumbing R, Hoddinott JF. *Relative efficacy of food and cash transfers in improving food security and livelihoods of the ultra-poor in Bangladesh.* Washington, DC, International Food Policy Research Institute, 2007.

54. Soaeres FV, Perez Ribas R, Osorio RG. *Evaluating the impact of Brazil's Bolsa Família cash transfer programmes in comparative perspective*. Brasilia, International Poverty Centre, 2007.

55. Skoufias E. *PROGRESA and its impact on the welfare of rural households in Mexico.* Washington, DC, International Food Policy Research Institute, 2005.

56. Schady N, Rosero J. *Are cash transfers made to women spent like other source of income?* Policy Research Working Paper 4282. Washington, DC, World Bank, 2007.

57. Rabbani M, Prakash VA, Sulaiman M. *Impact assessment of CFPR/TUP: a descriptive analysis based on 2002–2005 panel data*. CFPR/TUP Working Paper Series No. 12. Bangladesh, BRAC, 2006.

58. Halder SR. Poverty outreach and BRAC's microfinance interventions: program impact and sustainability. *IDS Bulletin*, 2003, 34(4):44–53.

59. Haseen F. Change in food and energy consumption among the ultra poor: is the poverty reduction programme making a difference? *Asia Pacific Journal of Clinical Nutrition*, 2007, 16(Suppl. 1):58–64.

60. Doocy S, Teferra S, Norell D, Burnham G. Credit program outcomes: coping capacity and nutritional status in the food insecure context of Ethiopia. *Social Science and Medicine*, 2005, 60:2371–2382.

61. Haseen F. *Change in food and nutrient consumption among the ultra poor: is the CFPR/TUP programme making a difference?* CFPR/TUP Working Paper Series No. 11. Bangladesh, BRAC, 2006.

62. Barber SL, Gertler PJ. Empowering women to obtain high-quality care: evidence from an evaluation of Mexico's conditional cash transfer programme. *Health Policy and Planning*, 2009, 24:18–25.

63. Morris SS, Flores R, Olinto P, Medina JM. Monetary incentives in primary health care and effects on use and coverage of preventive health care interventions in rural Honduras: cluster randomised trial. *Lancet*, 2004, 364:2030–2037.

64. Ahmed SM, Adams AM, Chowdhury M, Bhuiya A. Changing health-seeking behaviour in Matlab, Bangladesh: do development interventions matter? *Health Policy and Planning*, 2003, 18:306–315.

65. Ahmed SM, Petzold M, Kabir ZN, Tomson G. Targeted intervention for the ultra poor in rural Bangladesh: does it make any difference in their health-seeking behaviour? *Social Science and Medicine*, 2006, 63:2899–2911.

66. Ahmed SM, Rana Masud AKM. *Customized development interventions for the ultra poor: preliminary changes assessment of health and health seeking-behaviour (CFPR/TUP 2002 to 2004).* CFPR/TUP Working Paper Series No. 7. Bangladesh, BRAC, 2005.

67. Mohindra K, Haddad S, Narayana D. Can microcredit help improve the health of poor women? Some findings from a cross-sectional study in Kerala, India. *International Journal for Equity in Health*, 2008, 7:2.

68. Pronyk PM, Kim JC, Abramsky T, et al. A combined microfinance and training intervention can reduce HIV risk behaviour in young female participants. *AIDS*, 2008, 22:1659–1665.

69. Kim J, Ferrari G, Abramsky T, et al. Assessing the incremental effects of combining economic and health interventions: the IMAGE study in South Africa. *Bulletin of the World Health Organization*, 2009, 87:824–832.

70. Powell-Jackson T, Morrison J, Tiwari S, Neupane BD, Costello AM. The experiences of districts in implementing a national incentive programme to promote safe delivery in Nepal. *BMC Health Services Research*, 2009, 9:97.

71. Stecklov G, Winters P, Todd J, Regalia F. Unintended effects of poverty programmes on childbearing in less developed countries: experimental evidence from Latin America. *Population Studies*, 2007, 61:125–140.

72. Hashemi S. Linking microfinance and safety net programs to include the poorest: the case of IGVGD in Bangladesh. Consultative Group to Assist the Poorest, *Focus Note Series*, 2001, 21:1–11.

73. Halder SR, Mosley P. Working with the extra-poor: learning from BRAC experiences. *Journal of International Development*, 2004, 16:387–406.

74. Matin I, Hulme D. Programs for the poorest: learning from the IGVGD program in Bangladesh. *World Development*, 2003, 31:647–665.

75. Ahmed SM. Combining health and social protection measures to reach the ultra-poor: experiences of BRAC. In: *Global Forum Update on Research for Health, volume 4. Equitable access: research challenges for health in developing countries*. London, Pro-Brook Publishing, 2007.

76. Matin I. The very poor who participate in microfinance institutions and those who never have. *Small Enterprise Development*, 2005, 16:51–57.

77. Hargreaves J, Hatcher A, Strange V, et al. Process evaluation of the Intervention with Microfinance for AIDS and Gender Equity (IMAGE) in rural South Africa. *Health Education Research*, 2010, 25(1):27–40.

78. Caldes N, Coady D, Maluccio JA. The cost of poverty alleviation transfer programs: a comparative analysis of three programs in Latin America. *World Development*, 2006, 34:818–837.

79. *Assessing administrative capacity and costs of cash transfer schemes in Zambia: implications for roll-out.* Brasilia, International Policy Centre for Inclusive Growth, 2010.

80. *How sustainable is the gain in food consumption of the CFPR/TUP beneficiaries?* Working Paper 18. BRAC, 2007.

81. Petticrew M, Whitehead M, Macintyre SJ, Graham H, Egan M. Evidence for public health policy on inequalities. 1: the reality according to policymakers. *Journal of Epidemiology and Community Health*, 2004, 58:811–816.

82. Bennett D. Billions of dollars and a Nobel prize later, it looks like microlending doesn't actually do much to fight poverty. *Boston Globe*, 20 September 2009.

83. Martins N, Morris P, Kelly PM. Food incentives to improve completion of tuberculosis treatment: randomised controlled trial in Dili, Timor-Leste. *British Medical Journal*, 2009, 339:b4248.

84. Paton NI, Chua YK, Earnest A, Chee CB. Randomized controlled trial of nutritional supplementation in patients with newly diagnosed tuberculosis and wasting. *American Journal of Clinical Nutrition*, 2004, 80:460–465.

85. Range N, Andersen AB, Magnussen P, Mugomela A, Friis H. The effect of micronutrient supplementation on treatment outcome in patients with pulmonary tuberculosis: a randomized controlled trial in Mwanza, Tanzania. *Tropical Medicine and International Health*, 2005, 10:826–832.

86. Fernald LC, Gertler PJ, Hou X. Cash component of conditional cash transfer program is associated with higher body mass index and blood pressure in adults. *Journal of Nutrition*, 2008, 138:2250–2257.

# SOCIAL DETERMINANTS OF HEALTH

ACCESS TO POWER, MONEY AND RESOURCES AND THE CONDITIONS OF DAILY LIFE —
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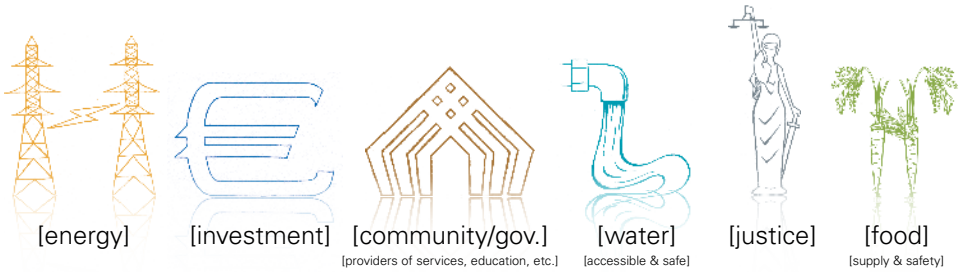


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