KENYA OVC-CT PROGRAMME OPERATIONAL AND IMPACT EVALUATION

Baseline Survey Report

Alex Hurrell, Patrick Ward and Fred Merttens

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Executive summary

The Government of Kenya, with support from Unicef, has established a pilot programme of cash transfers to orphans and vulnerable children, which is administered by the Department of Children's Services (DCS) in what is now the Ministry of Gender. Its objective is to keep orphans and vulnerable children (OVCs) within their families and communities and to promote better nutrition and health and school enrolment, attendance and retention amongst the children. This is the second phase of the pilot programme and it will be independently evaluated as a basis for deciding whether, and how, it should be scaled up to a national level.

Oxford Policy Management has been contracted to undertake the evaluation. The core of the evaluation is a community-based controlled trial, with information collected using household and community interviews. The questionnaires capture information on a number of measures of the welfare of the children and their households. The evaluation will compare programme and control households at baseline and at follow-up, some 18 to 24 months later, and will use this comparison to assess the impact of the programme. The evaluation will also compare the impact of imposing conditions along with cash transfer as compared to cash transfers alone.

The evaluation covers Nyanza (Kisumu, Suba, Homa Bay and Migori districts), Nairobi, Kwale and Garissa, with four locations per district: two with programme intervention and two acting as controls.[1] The allocation of intervention and control status, and of imposing conditions or not, was done randomly.

The fieldwork for the baseline quantitative survey was conducted between March and August 2007 by Research Solutions Limited, using questionnaires in Swahili, Luo and Somali. It covered OVC households only. Information was collected on programme recipients, on control households that were selected to be comparable to the recipients, and on other OVC households in the study locations. Some 2,759 household were interviewed and included in the sample for analysis, 87% of the original intended sample.

The survey collected information on a range of measures of welfare in the study population. They included measures of household consumption expenditure that can be used to assess income poverty, and information on the education and employment of adults in the households, assets owned, housing conditions and other socio-economic characteristics. They also included information on child welfare measures, including anthropometric status, immunisation, illness and health-care seeking behaviour, school enrolment and attendance, child work and birth registration.

This report presents the findings of the baseline survey. It describes the characteristics of the programme recipients and of the control population, and assesses how similar the two appear to be. It presents the baseline levels of key indicators that will form the basis for the impact evaluation once the follow-up survey has been conducted. It also analyses the extent to which the programme has managed to identify and enrol its target group, including how successfully it has included poor OVC households.

Basic characteristics of OVCs and programme recipients

The programme has set up its activities and identified recipients in all of the evaluation locations. At the time of the baseline survey, the programme was reaching around 21% of OVCs households

[1] Conditions were imposed in Homa Bay, Kisumu and Kwale; there were no conditions imposed in Garissa, Migori and Suba. In Nairobi, conditions were imposed in one location (Kirigu), but not in the other (Dandora B).

in the evaluation locations and 22% of OVCs. Almost all OVC households contain orphans (96%) – it was much the most important reason for being classed as an OVC. A significant fraction of households also have a chronically ill care-giver or child. Child-headed households are rare and none were identified in the baseline survey. Around 75% of children in OVC households are OVCs (since these households may also contain children who are not classed as OVCs).

Around half of OVCs in the population as a whole are boys, as might be expected. However the programme appears to have selected somewhat more boys than girls as recipients – 56%, compared with 44% girls. If this difference is confirmed in the programme's records for all recipients, it might be necessary to assess what factors are driving the under-selection of girls and what can be done to address it.

A parent is most likely to be the main carer of OVCs, reflecting the fact that single orphans are much more common than double orphans. Grandparents are also quite often the main caregivers for OVCs, with 18% being cared for by a grandparent. The care of children who are completely unrelated appears to be very rare.

Caregivers are considerably more likely to be female, as might be expected. Around 22% of OVC caregivers in the study population as a whole are over 60, reflecting the important role of grandparents in caring for OVCs. This proportion reaches 37% in recipient households, due to the programme prioritising the most elderly care givers. Most caregivers report having some kind of income-earning activity, although 27% of carers in recipient households report that they have none. The most common activity is farming, although this will include small-scale subsistence farming that may bring in a quite limited income.

Targeting of the programme

In addition to collecting information on the consumption (income poverty) of the OVC households, the survey also collected information on the household characteristics that are used by the programme to identify the eligible household and to prioritise amongst them to select recipients. Together, this information means that the analysis can assess whether recipients are selected in accordance with programme rules and whether poor OVC households have been selected as recipients.

Almost all (98%) of the recipient households identified contain an OVC, i.e. contain an orphan, sick child or a chronically sick carer; screening at enrolment may even have further increased this proportion.

On many welfare indicators, recipients are on average somewhat more disadvantaged than the rest of the OVC population in their locations. Recipient households generally have poorer quality housing, fewer assets and lower levels of education amongst adults than non-recipient households. They are more likely to have malnourished children, although some other health indicators and school enrolment appear to be slightly better.

The analysis looked at the programme's coverage of poor OVC households, using household consumption levels as the measure of (income) poverty. It is important to note that the programme is not intended to address poverty as primary objective. It is a rights-based programme intended to support fostering of orphans and other vulnerable children, and the development of their potential (human capital). The selection of districts where the programme operates was not based on poverty criteria. Nevertheless, the programme decided to target support to poor OVC households in the face of limited resources, using household characteristics identified by the community. Due to limited funds, the programme also introduced an additional prioritisation process to select the most vulnerable from all households identified as eligible. The baseline survey covered these

recipients selected by the prioritisation process only, although there was a subsequent expansion to include all eligible households.

This complicates the analysis of poverty targeting. At the time of the baseline, some 21% of OVC households were identified for inclusion in the programme. One element of the analysis therefore looks at how effectively the programme has managed to select the poorest 21% of OVC households, on the basis that they can be considered the most vulnerable. Since the programme has the intention to reach a wider group of poor recipients, the analysis also addresses targeting issues with two higher-level cut-offs, the $1 and $2 per day poverty lines.

The analysis shows that 38 percent of recipients fall below the $1 per day poverty line and 84 percent fall below the $2 line. These figures are sensitive to fieldwork and analytical methods used and are not directly comparable to similar estimates for other populations. They show, however, that many programme recipients are in some sense 'poor'. They also show that how many recipients are considered to be poor is very sensitive to the poverty line that is chosen.

A direct comparison with national income poverty data is not considered reliable because of its sensitivity to the methods used. A comparison of non-income welfare indicators suggests that the study population, and programme recipients, are generally mildly worse off than the national population as a whole and not significantly worse off than the national rural population.

An analysis of the programme's targeting effectiveness shows that it is having difficulties directing resources at the poorest OVC households. Only around one quarter of the poorest households were selected for inclusion in the programme (at the time of the baseline survey). This reflects the limited coverage of the programme due to budget constraints, and the fact the programme selection process has not managed to identify the poorest recipients consistently. As a result, a large fraction of the poorest OVC households would not benefit from the programme. The subsequent enrolment of all eligible households will have increased coverage of the poorest after the baseline survey, since it increased coverage as a whole. However it is clear that the existing targeting system is not very effective at ensuring that, for any given level of coverage, the poorest OVC households are selected.

The corollary of this is that a significant fraction of less-poor households are being covered by the programme. Three quarters of recipients are not from the poorest 21% of households, and 62% are above the $1 per day poverty line. Far fewer recipients are above the $2 per day poverty line. However, the analysis shows that the differences between the poorest and the better-off households are not trivial: the average consumption level in the top fifth of households is almost five times that of the poorest, and support given to a better-off household is support denied to a poorer household.

A detailed analysis of the targeting process shows that there are two elements to the problem. The first is that the allocation of the numbers of recipients to be included in the programme *between* districts does not closely reflect the distribution of the number of poor OVC households. If it is to expand coverage, the programme needs to develop policies and procedures for allocating the number of recipients geographically based on estimates of need. The second is that the recipient selection process *within* each district and location is not sufficiently effective at identifying the poorest OVC households. The poverty criteria used to identify households as poor do not discriminate them very effectively. In fact, as reported by the programme, they appear to exclude very few households indeed. The subsequent prioritisation process used to select the most vulnerable for inclusion, based on the age of the caregiver, does help to include more poor households, but there is scope to strengthen it further. Overall, some 41% of recipients are in the poorest third of OVC households within their location, while 28% come from the top (better-off) third.

It seems likely that some form of poverty targeting will remain part of the programme's operations in the future. The issue of defining and identifying poor OVC households is an important, ongoing issue that the programme will need to address. The analysis presented in this report could usefully be complemented by analysis of national KIHBS, which could be used to assess overall poverty levels in OVC households compared with the national population and national poverty lines, and to propose an appropriate target group based on nationally representative data. The findings presented here suggest that this should be a priority for the programme.

Baseline welfare measures

Various measures of welfare are presented for the recipient and control populations, and compared between programme locations with and without conditions. Changes in these measures will form the basis for estimates of programme impact, and the impact of imposing conditions, once the follow-up survey has been conducted.

In general, the recipient and control households are somewhat poorer and more disadvantaged than the overall population of OVC households in the same locations. The programme and control populations appear to be broadly comparable to one another and there is no pattern of systematic differences between locations with and without conditions.

However, there are differences for specific indicators and sets of indicators between these various groups. By chance, households in the control locations appear to be somewhat better off economically than those in treatment locations, and this is reflected in differences in a number of other baseline welfare indicators. Birth registration is also somewhat higher in the control population. Community reports suggest some differences in access to services, also, with somewhat better access to health facilities in the control population but better access to schools amongst the recipients.

The pattern of differences in the health and nutrition indicators is puzzling. Programme locations with conditions appear to have significantly worse child nutrition indicators and significantly better other health indicators. This requires further investigation. Differences in some of the reported education measures are smaller but also suggest ensuring that a range of education indicators, including class repetition, are collected in the follow-up survey.

These differences are due to the study having to randomise a limited number of large geographical units. The design of the evaluation has a number of features that will help to minimise the implications of these differences. They include following up on the same households interviewed at baseline (panelling) and the comparison of changes in programme locations with those in control locations. Nevertheless it will need attention in the follow-up survey and analysis.

Table of contents

List of tables and figures

Abbreviations

DCS	Department of Children's Services, Ministry of Home Affairs
EA	Enumeration Area
GOK	Government of Kenya
MOHA	Ministry of Home Affairs
OPM	Oxford Policy Management
OVC	Orphan or Other Vulnerable Child
OVCs	Orphans and Other Vulnerable Children
UNICEF	United Nations Children's Fund

1 Introduction

1.1 The OVC cash transfer programme

1.1.1 Background

Kenya is a country of 34 million people, of which around half are children (under 18 years old), and many of whom are living in poverty. The crisis of HIV and AIDS has also worsened poverty in Kenya. High levels of poverty are found in: i) the poorest people living in arid areas where the economy revolves around pastoralists, ii) people who were otherwise poor anyway who have been affected by HIV and AIDS to the point whereby the economically active members of the household are either ailing due to HIV/AIDS or have died, and iii) people living in urban slums around cities and large towns where transient and migrant populations live.

The poverty of orphans and vulnerable children became the subject of discussion in the course of the parliamentary elections towards the end of 2002, with many parliamentary candidates pledging to allocate more resources to this group if elected. Commitment and action has been forthcoming and the Government of Kenya is in the process of developing a National Policy and a National Plan of Action for OVCs, a key aspect of which is the provision of a direct cash transfers to families caring for OVCs. It is intended that the cash transfer payments provided by the OVC Cash Transfer (OVC-CT) programme will strengthen the capacities of households and communities to be able to take care of OVCs, which has been identified as the key priority area in responding to the situation of OVCs in the country.

1.1.2 Programme implementation

Phase 1

The Government of Kenya (GOK) submitted a proposal in 2004 to the Global Fund for HIV, TB and Malaria, a key component of which was the funding of the development and expansion of a cash transfer scheme for the most vulnerable children. However, the proposal was not funded; a key weakness of the submission was that it proposed a programme that had never been tried in Kenya and that there was no basis on which to support the viability of the programme. The Department of Children's Services (DCS) in the Ministry of Home Affairs (MOHA), with assistance from UNICEF, embarked on an initiative to demonstrate the feasibility of such a welfare system in the country. By December 2004, 500 households in the districts of Garissa, Kwale and Nairobi were receiving a payment, which at the time was KSh 500 (approximately $6.50) per OVC per month. This marked Phase 1 of a pilot learning process, with the objective of informing the design of a larger scale pilot.

In April 2005, the Ministry of Home Affairs (MOHA) and UNICEF hosted a review workshop to identify lessons learned and facilitate the shaping of a larger pilot project that could form the basis for nationwide scale-up. The results presented at the workshop indicated that the scheme had had a positive impact on the welfare of the recipients, particularly in terms of education, health, and nutrition. At the same time, the DCS was expanding the programme to ten additional districts, building on some of the initial lessons, and a further 2,500 households were targeted. In total 3,000 recipient households were reached in Phase 1.

Phase 2

The Pilot was scaled up from the initial 3,000 OVC (Phase 1) to around 7,500 (Phase 2) during 2007. Apart from the initial 13 districts, the programme also began to be piloted in four new donor-funded districts in Nyanza Province (Kisumu, Homa Bay, Migori and Suba), where evidence

suggests HIV/AIDS prevalence is higher than in the rest of the country, and in two additional government-funded districts (Embu and Busia).

The primary objective of this phase of the pilot phase is to evaluate the potential role of cash transfers as an instrument to retain orphans and vulnerable children within their families and communities and in promoting better nutrition and health and school enrolment, attendance and retention. Important improvements in the design of the different processes have been made, including the targeting process and the delivery mechanism. It is expected that the design of the programme will be adjusted with the lessons learned from the implementation of Phase 2 and the results from the Operational and Impact Evaluation. Emphasis is also placed on informing the design of a monitoring and evaluation system for use in a scaled-up cash transfer programme. The outcomes of this process will inform the National OVC Policy development in regards to community-based safety nets for orphans and vulnerable children

The eventual target population of the programme is 100,000 households at a national scale. With an average of three OVCs per household, the OVC-CT programme would therefore cover around 300,000 OVC.

1.1.3 Programme objectives

As stated in the programme's Operation Manual, the overall objective of the OVC-CT programme is to provide a social protection system through regular cash transfers to families living with OVCs in order to encourage fostering and retention of OVCs within their families and communities and to promote their human capital development.

The specific objectives of the project in terms of household and child welfare are as follows:

Education:

- Increase school enrolment, attendance and retention for 6 to 17 year old children [2] in basic school (up to standard 8).

Health:

- Reduce the rates of mortality and morbidity among 0 to 5 year old children[3], through immunizations, growth control and vitamin A supplements[4].

Food security:

- Promote household nutrition and food security by providing regular and predictable income support.

Civil registration:

- Encourage caregivers to obtain identity cards within the first six months after enrolment

- Encourage caregivers to obtain birth certificates and identity cards for children

[2] Children up to 17 years old could still be enrolled in basic school

[3] The focus is on immunization, nutrition and children illness.

[4] In accordance with the official health regulations (Ministry of Health).

The programme was developed under a framework of child rights and, if there were the resources, might potentially cover all OVCs. However, resources are inevitably limited and the decision was taken to target the programme at poor OVC households. The programme is not intended primarily as an anti-poverty programme, however. The selection of districts for the pilot, for example, was not based on poverty criteria. Nevertheless there is an interest in how it might contribute to poverty reduction as one part of the wider GOK social protection framework.

1.2 The evaluation

Oxford Policy Management (OPM) has been contracted to undertake an independent evaluation of the current pilot phase of the programme. The purpose of the evaluation is to establish the **efficacy** and **efficiency** of the OVC cash transfer programme during the second pilot phase (Phase 2). Specifically the evaluation will look at determining the effectiveness of the processes used in the pilot with regard to:

- the targeting and eligibility criteria
- cash disbursement and accountability mechanisms
- the transaction costs associated at each stage of the project
- cash transfer utilisation
- the effect that the cash transfer has had on children, households and communities
- the impact of conditions related to the cash transfer provision

The evaluation therefore has two core objectives. Firstly, to evaluate the welfare and economic impacts of the pilot amongst those who benefit from it; and secondly, to evaluate the operational effectiveness of the pilot programme, including an evaluation of the extent to which it reaches those in greatest need (targeting effectiveness) and an assessment of cost.

1.2.1 Key evaluation questions

The evaluation aims to answer the following key questions:

- Are cash transfers reaching the most vulnerable children and having a substantial impact on their welfare - both human development for the child and wider social benefit for the household? How much of an impact are cash transfers having?
- Does the impact justify the cost of the programme? Would a national programme be affordable and fiscally sustainable? On that basis, should the programme, or a variant of it, be scaled up to a national level?
- If the programme is to be scaled up, which aspects of its operation must be modified or strengthened for it to operate effectively at a national level? Which aspects of good practice should remain the same and be replicated?
- What is the impact or incentive effect of imposing conditions on recipients, versus not imposing conditions? What is the cost of doing so, for both households and the government? Does any additional impact warrant the additional cost? If households fail to comply with conditions, why is this so?

In attempting to answer these questions the evaluation will cover a range of cross-cutting issues and processes, including assessing the effectiveness of some of the key programme operations.

1.2.2 Evaluation design

Over the course of the evaluation, three main activities will be undertaken:[5]

1. A quantitative survey of households and communities
2. Qualitative data collection
3. A costing study

These activities will use a number of instruments:

- Household survey (a panel survey, with baseline + follow-up);
- Community quantitative survey (baseline + follow-up);
- Qualitative focus groups;
- Qualitative in-depth interviews;
- Programme financial documentation review.

The core of the evaluation is to assess the impact of the programme on the recipients by comparing them with a group of controls – similar households and children who do not benefit from the programme. Both groups are interviewed before the programme begins and after it has been operating for two years. The impact is assessed by comparing changes in the welfare of recipients, who should have improved as a consequence of the programme, to any changes in the control households. The information on the control households is used to allow for any other changes that may be happening in the population in general and have nothing to do with the programme. The evaluation will also assess the impact of imposing conditions on the recipients (on school attendance, etc) compared to a cash transfer alone. In the evaluation, the selection of locations to benefit from the programme with conditions, the programme without conditions, or no programme (controls) was done randomly. This strengthens the robustness of the findings.

The sample for the quantitative survey therefore consists of four groups.[6] They are:

- A – households with OVCs in the programme areas, selected for inclusion in the programme. These are divided into two groups – those in areas with conditions vs those where there are no conditions.
- B – households with OVCs in control areas that meet programme criteria and should, in theory, have been selected by virtue of meeting the definitions of high need as defined by the programme, if the programme operated there.
- C – households with OVCs in programme areas, but not selected for inclusion in the programme.
- D – households with OVCs in control areas that do not meet programme criteria and would not (in theory) have been selected if the programme operated there.

[5] A series of organisational reviews were also planned and the first was implemented. No further reviews will be undertaken, however, since the rest were cancelled in order to focus resources on the quantitative survey.

[6] It had initially been proposed to include a sample of non-OVC households to provide information on the characteristics of all households in the study population.

The baseline survey will be followed by a follow-up quantitative survey 24 months later. This will re-visit the same households that were interviewed in the baseline. The comparison of trends over time in the programme recipients (group A) and controls (B) provides the basis for the analysis of programme impact. Re-visiting the same households will help to adjust for any initial differences between the two groups at the time of the baseline.[7]

In addition, the evaluation will assess the impact of the imposition of conditions by comparing trends in recipients with and without conditions. Households from groups C and D provide information on all OVC households in the study population for comparison with the beneficiaries.

Some information on operational effectiveness will be derived from the second round of the quantitative survey and through the qualitative studies. Costing information will come from a separate costing study. More details on the design of the evaluation and the questions to be answered are given in the Evaluation Framework Document.

1.2.3 Key indicators

The quantitative survey measures a number of key indicators that reflect the objectives of the programme. Since the design of the programme was still being finalised while the questionnaire was being developed, the survey sometimes measured a wider range of indicators than might have been needed if programme design were already finalised. It succeeded, nevertheless, in capturing all of the key areas.

Child health, education, child rights and household income

The main child and household welfare indicators are:

- Health & nutrition indicators:
  - Vaccination rates;
  - Child malnutrition: stunting, underweight, wasting;
  - Treatment of child diarrhoea, ARI, fever; and
  - Incidence of diarrhoea and fever in children under 5.
- Education:
  - Primary and pre-school education enrolment, attendance and class repetition rates.
- Household consumption and poverty:
  - Household spending on food, primary school costs, health services and associated costs including transport and medicines; and
  - Total (per capita) consumption levels in the household.
- Child labour and work including the extent of participation, time spent.

These indicators are measured for all children in the households.

In addition, the evaluation as a whole will examine a set of indicators that assess 'output'-type measures for the programme and any additional consequences - intentional or not. They include:

[7] The analysis will use a 'difference in difference' estimate based on a panel of households. See the Evaluation Framework Document for more details on the design and planned analysis of the study.

- Important health-determining behaviour, such as: carer and child attendance at health & nutrition education / growth monitoring sessions; carer knowledge of health issues covered by these sessions; prevalence and impact of adult chronic illness; utilisation of VCT and ART services;
- Household relations around expenditure, including who makes decisions within the household on how to spend the cash;
- Impact on support from other households and programmes;
- Economic and social costs for households included in the scheme, and any impact on social relations; and
- Uptake of child birth registration documents and adult ID cards.

The simpler of these measures will be included in the second round of the quantitative survey. More complex or subtle effects may only be investigated in the qualitative studies.

Fostering

The programme has the fostering and retention of orphans in the community as a central objective. The household survey will track what happens to orphans in the sampled households over the period and will be able to compare programme and control households on the extent to which they remain in the households. This will provide information on the apparent impact of the programme on the retention of orphans in the household. However, it will provide little information on what happens to newly orphaned children. The community questionnaires have collected information on this and the follow-up survey will seek to assess any changes in community-level information. However it should be noted that this will be approximate, and precisely estimating the impact of the programme on fostering rates would require a different study design and a much larger sample. The evaluation is focussed, rather, on estimating the impact on the welfare of existing orphans.

1.3 The baseline survey

OPM was initially told to mobilise a team for January 2006. This team undertook design and piloting work, but the finalisation of the sample and implementation of the survey was constrained to follow the development and implementation of the Programme, which took longer than had been anticipated. The fieldwork for the baseline quantitative survey was eventually implemented between March and August 2007.

The evaluation covers Nyanza (Kisumu, Suba, Homa Bay and Migori districts), Nairobi, Kwale and Garissa. These districts were identified by the programme. The programme operates in a number of locations within these districts. [8] However, the evaluation is being undertaken in only four locations per district: two with programme intervention and two acting as controls. The evaluation locations were selected randomly after excluding any with particularly low poverty rates, inadequate capacity to supply the relevant health and education services, or large existing OVC support programmes. Intervention/control status was allocated randomly to give two of each per district.

The choice of which districts would impose conditions was also made randomly. Conditions were imposed in Homa Bay, Kisumu and Kwale; there were no conditions imposed in Garissa, Migori and Suba. In Nairobi, conditions were imposed in one location (Dandora B), but not in the other (Kirigu). The intervention and control locations will remain as intervention and control locations at

[8] Note that locations are the unit outside Nairobi. In Nairobi, sub-locations were identified. Where this document refers to locations, it should be taken to mean sub-locations in Nairobi.

least until the follow-up survey. After the follow-up survey, and subject to evaluation feedback, MOHA will then begin to phase the programme into the control locations.

Samples were drawn for the four groups of households identified in section 1.2.2. Programme recipient households were sampled from a list supplied by the Programme. Households in groups B, C and D (ie all except programme recipients) were sampled from a frame developed through undertaking household listing in a random sample of census enumeration areas (EAs). This listing collected information used to identify OVC households and to classify households as likely to be poor, based on socioeconomic information provided by the households. This was used to distinguish the group of poor OVC households that will act as controls (group B). Census enumeration areas were sampled with probability proportional to population size (PPS). The household listing took place between March and July 2006. More detailed information on the sampling process and the definition of the control group is given in Annex D.

The intended total sample size was 3,161. After refusals and other losses, a total of 2,759 household were interviewed and included in the sample for analysis (87%). The distribution of the completed sample is given in Table 1.1. Data was analysed using sampling weights calculated as the inverse of the relevant sampling fractions within the locations had been selected for inclusion in the study. The study does not provide information about the OVC population in the country as a whole, but only for the particular population included in the evaluation; the weights reflect this.

Table 1.1 Final sample size by study group

Selected to be a recipient/control household	Area		Total
	Programme	Control	
'Selected'	1,540 [A]	754 [B]	2,294
'Not selected'	238 [C]	227 [D]	465
Total	**1,778**	**981**	**2,759**

The survey fieldwork was conducted by Research Solutions Limited using seven teams of interviewers. After finalisation, questionnaires were translated to provide versions in Swahili, Luo and Somali. Much of the fieldwork took place during the long rains. This, together with remoteness of some of the areas, posed considerable logistic challenges for the fieldwork. All questionnaires were checked in the field by supervisors and independently double entered. Further information on the fieldwork and data entry is given in Annex E and Annex F.

1.4 Contents of the report

This report presents the findings of the baseline quantitative survey. It describes the characteristics of the programme recipients and of the control population, and assesses how similar the two appear to be. It presents the baseline levels of key indicators that will form the basis for the impact evaluation once the follow-up survey has been conducted. It also analyses the extent to which the programme has managed to identify and enrol its target group, including how successfully it has selected the poorest OVC households.

After this introductory chapter, Section 2 describes the basic characteristics of OVC households, the OVCs and their caregivers; Section 3 presents the targeting analysis; Section 4 presents the

baseline levels of the welfare indicators which will form the focus of the impact analysis once the follow-up survey has been implemented; finally Section 5 concludes.

The report benefited from comments given on a presentation of draft results to a group of stakeholders in June 2008.

1.5 Terminology and definitions

Location – A location is a geographical area corresponding to a specific official administrative unit. Each district (*wilaya*) is subdivided into divisions (*taarafa*), and these in turn are subdivided into locations (*kata*). The programme is being implemented by location, with the targeting taking place within each location in which the programme operates. In Nairobi locations are much larger (in terms of population) than in other areas, so here the programme is operating by sub-location (*kata ndogo*). In this report the term location refers to sub-locations in Nairobi and administrative locations in the other six distiricts covered by the evaluation (Kwale, Garissa, Homa Bay, Suba, Kisumu and Migori).

Programme location – a programme location is a location in which the OVC-CT programme is operating.

Evaluation location – an evaluation location is a location that is being covered by the evaluation. The evaluation covers four locations per district, two treatment locations and two control locations.

Treatment location – a treatment location is an evaluation location in which the programme is operating, i.e. it is a programme location covered by the evaluation. There are two treatment locations per district.

Control location – a control location is an evaluation location in which the programme is <u>not</u> operating. There are two control locations per district.

Enumeration area – a location is divided into sub-locations, and these in turn are sub-divided into enumeration areas. The enumeration areas do not correspond to any administration level of authority or unit, rather they are the small geographical unit used in the national census.

OVC household – an OVC household is any household containing at least one OVC (orphan or other vulnerable child). A child (aged below 18) is defined as an OVC if they are an orphan (single or double), they are chronically ill[9], or they are looked after by a carer who is chronically ill.

Recipient household – a recipient household is a household which is participating in the OVC-CT programme, i.e. is receiving cash transfer payments. All recipient households should be OVC households.[10]

Treatment household – a treatment household is any recipient household that is situated in a treatment location.

[9] According to the OVC programme's targeting manual, a chronically ill person is defined as: "a person who has at least been chronically ill for the last 3 months and is both physically ill and socially incapable of working. Among the illnesses under this category are the following: tuberculosis, HIV/AIDS or cancer. Chronically ill is defined as a disease which cannot be cured and is terminal."

[10] As a result of targeting errors a very small proportion of recipient households may not contain OVCs.

Control household – a control household is a household which has been identified as having similar characteristics to those of recipient households but which resides in a location in which the programme is not operating, i.e. situated in a control location. Control households are also referred to as pseudo-recipient households in this report. See Annex E for details of how the control group was defined and identified.

Household consumption expenditure

The household questionnaire collected information on each household's consumption and expenditure, which forms the basis for measuring income poverty. This measure is standardised for the number of household members and is used to compare households on their level of consumption and poverty. While it is possible for households to misreport consumption, it is usually reported much more reliably than household income.

In addition to comparing means, household can be divided into groups according to their level of consumption. In this report, two groupings are used. Households are divided into **quintiles** based on their relative level of consumption across **the whole study population**. This requires the use of an adjustment for price differences between locations. Households are also divided into consumption **terciles** based on their relative level of consumption **within** the location where they are located. It measures how poor a household is relative to other households in the same location and is headed 'location terciles'. Both measures are used in this report for different purposes.

The analysis also presents information on the proportion of households falling below $1 and $2 consumption per person per day, often used as international poverty lines. These figures are sensitive to the particular way that the household consumption information is collected and so should not be considered comparable to similar estimates from other sources.

The calculation of the consumption aggregate and related measures is described in detail in Annex C.

2 Characteristics of programme recipients

This section describes the basic characteristics of OVCs and their households, based on the findings from the household survey. It looks at the frequency of OVC households and their basic living conditions. It also describes caring arrangements and the characteristics of the caregivers.

2.1 Characteristics of OVC households

To develop the sample frame for the study population a household listing was undertaken in a randomly selected sample of enumeration areas (EAs) in every location covered by the evaluation (see Annex D for details of the sampling methodology). A short listings form was completed for every household in the EA which included questions on the number of children in the household, the number of orphans and the number of sick adults. Table 2.1 presents estimates of the proportion of households in control locations containing children, orphans and sick adults by district.

Although it was not possible to precisely classify listed households as OVC or non-OVC because of the limited information collected on the listing form, the proportion of households containing either at least one orphan or at least one child and at least one sick adult should give a reasonably close approximation to the proportion of households containing OVCs.[11] The estimates in the table below suggest that there are proportionately fewer OVC households in Nairobi than in the other districts, while Garissa and Suba have particularly high proportions of households with OVCs.

Table 2.1 Proportion of households in evaluation locations containing children, orphans and sick adults – by district (%)

	Nairobi	Homa Bay	Migori	Kisumu	Suba	Kwale	Garissa	All evaluation locations
Contain children	48	68	81	78	78	79	94	58
Contain at least one orphan	6	23	31	31	35	15	30	14
Contain at least one child and at least one chronically sick adult	3	9	11	12	8	9	17	7
Contain at least one orphan or at least one child and one sick adult (potential OVC)	7	26	35	35	38	21	39	16
N = number of households (unweighted)	6,752	2,500	2,769	3,014	1,775	1,748	1,923	20,481

Source: OPM OVC-CT household listings data. Notes: Within each evaluation location a random sample of EAs were selected. In each EA a full census of households was conducted. The EAs were randomly selected with probability proportional to population size. The EA sampling probabilities were used to construct appropriate sampling weights. The estimates are therefore representative of all households in evaluation locations.

[11] The household listings form was designed before the programme had finalised the precise definition used to classify OVCs. See Annex C for details of how OVC households were classified using the household listings data and how this relates to the overall sampling methodology.

OVC households make up the study population of the quantitative survey. Other estimates presented in this section relate to the characteristics of OVC households and their members only; as they do elsewhere in the report, unless indicated otherwise.

Table 2.2 below presents the characteristics that are related to the status as 'OVC' households. This and many subsequent tables are disaggregated by type of location (treatment or control) and within that by household treatment status – either as recipient or non-recipient households in programme areas, or control or non-control households in the control areas. Recipients are also divided between those in areas where the programme imposes conditions and those where it does not. This enables a comparison of they key groups in the study.

It can be seen that almost all OVC households contain orphans. A significant fraction of households also have a chronically ill care-giver or child. Child-headed households are very rare and none were identified in the baseline survey.

Not all the children living in OVC households are themselves OVCs – for example, a household might have fostered one or more children but also have children of their own. The survey found that, overall, around 75% of children in OVC households are themselves OVCs. This is slightly higher in programme recipients, at 81% - the programme has tended to select households with a higher fraction of OVCs in them. This is not the case in the controls.

Table 2.2 Characteristics of OVC households on OVC criteria

	Treatment locations					Control locations			
	Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
Mean number of children	3.5	3.2	3.3	3.6	3.5	3.5	3.0	3.2	3.4
Contain orphan(s) (%)	98	97	97	97	97	95	93	94	96
mean number of orphans contained	2.5	2.6	2.5	2.5	2.5	2.4	2.1	2.2	2.4
Contain child household head (%)	0	0	0	0	0	0	0	0	0
Contain chronically ill child (%)	8	12	10	9	9	10	10	10	9
Contain chronically ill caregiver(s) (%)	16	19	18	8	10	17	17	17	13
Contain OVC(s) (%)	100	100	100	100	100	100	100	100	100
mean number of OVCs contained	2.6	2.8	2.7	2.6	2.6	2.6	2.3	2.4	2.5
N = number of OVC households (unweighted)	**683**	**824**	**1,507**	**230**	**1,737**	**717**	**216**	**933**	**2,670**

Source: OPM OVC-CT evaluation baseline data (2007).

Table 2.3 below presents a range of socioeconomic characteristics of the OVC households. It includes household consumption and poverty, housing quality and infrastructure, and the ownership of assets. [12]

[12] See Annex C for details of how consumption expenditure aggregates have been constructed and used to assess the relative economic status of OVC households.

Table 2.3 Basic socio-economic characteristics of OVC Households

	Treatment locations					Control locations			
	Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
Consumption expenditure									
Mean monthly real consumption expenditure per adult equivalent (Kshs)	1,467	1,636	1,550	1,765	1,719	1,734	2,069	1,929	1,821
Proportion living on less than $1 a day[3]	41	35	38	30	31	32	22	26	29
Proportion living on less than $2 a day[3]	87	82	84	78	80	79	67	72	76
Distribution of OVC households by quintile (%):									
Quintile 1 (poorest)	28	24	26	22	23	21	15	17	20
Quintile 2	27	21	24	19	20	22	17	19	20
Quintile 3	20	22	21	22	22	19	17	18	20
Quintile 4	13	18	16	17	17	20	26	23	20
Quintile 5 (better off)	12	15	14	19	18	18	25	22	20
Household characteristics									
Median household size	5	5	5	5	5	5	5	5	5
Median number of rooms occupied by household	2	2	2	2	2	2	2	2	2
Proportion of OVC households which contains no adults who have reached Standard 8 (%)	50	52	51	29	36	37	29	32	34
Household dwelling – proportion of OVC households with (%)									
Poor quality walls (mud/cow dung/grass/sticks)	78	83	80	69	71	80	62	70	70
Poor quality roof (mud/cow dung/grass/sticks)	30	18	24	17	18	21	22	21	20
Poor quality floor (mud/cow dung)	75	64	69	59	61	68	48	56	59
Main source of cooking fuel is firewood or residue/animal waste/grass	84	88	86	80	82	73	70	71	77
Main source of lighting fuel is electricity	7	6	6	15	13	13	19	17	15
No toilet (toilet is of type none/pan/bucket)	56	58	57	42	45	51	38	43	44
Main source of drinking water during the dry season is river, lake or pond	36	63	49	49	49	46	38	41	45
Household assets – proportion of OVC households that own (%)									
Real estate (incl. dwelling)	84	77	81	80	80	76	68	71	76
Farming land	86	78	82	85	84	80	67	72	78
Livestock	72	81	76	74	75	69	63	65	70
Radio	38	38	38	50	48	49	54	52	50
Telephone / mobile	10	13	12	23	21	24	37	31	26
Bucket / basin	93	85	89	87	88	91	92	91	90
Table	80	85	82	90	88	85	85	85	87

	Treatment locations					Control locations			
	Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
Chair or wooden stool	91	88	90	93	92	91	92	91	92
Bed sheets	75	75	75	88	85	84	90	88	86
Blankets	81	89	85	87	86	86	85	86	86
Mosquito net	56	60	58	72	69	67	73	71	70
N = # OVC households (unweighted)	**682**	**824**	**1,506**	**230**	**1,736**	**717**	**216**	**933**	**2,669**

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) In order to enable valid inter-district comparison, rent has been excluded from the calculation of mean monthly real consumption expenditure. Real consumption expenditure per adult equivalent has been estimated by adjusting nominal expenditure for price differences across districts using a Paasche price index constructed using OPM OVC-CT baseline data from the household and community surveys. (2) Quintiles were defined over all evaluation locations using estimates of real consumption expenditure per adult equivalent such that each quintile contained 20% of the OVC households. (3) An income of $1 a day translates to a real consumption expenditure per adult equivalent of Ksh 1133.5 per month using the World Bank's most recent PPP exchange rate (2005) adjusted for inflation since 2005. (4) Due to targeting errors a small number of non-OVC households were included in the study population. These households were excluded in the estimation of the quintile cut-offs.

Average household consumption per adult equivalent – that is, adjusted for the number of individual in the household and their age and sex – is around 1,800 KSh per month in the study population as a whole. It is somewhat lower in the programme locations than in control locations. It is also (modestly) lower in the programme recipients compared to the non-recipients in programme areas; and in the controls households compared with non-controls in control locations. These differences are also reflected in the proportions that have consumption levels below $1 and $2 per person per day.

The programme has therefore managed to identify recipients that are a somewhat poorer than OVC households as a whole in these locations. The issue of how well the programme is targeted is addressed in detail in section 3. The process of selecting controls also appears to have identified households that are poorer than the other OVC households in the control locations to a similar degree. However, the controls are somewhat better off than the programme recipients. Recipients in programme areas with conditions also appear to be a little poorer than those in areas without conditions.

Overall, some 29 percent of the study population and 38 percent of recipients fall below the $1 per day poverty line, while 76 and 84 percent respectively fall below the $2 line. These figures need to be treated with some caution, since they are sensitive to the methods used to collect the data and to calculate them; they should not be directly compared with similar estimates for other populations. They are indicative of the fact that many programme recipients are poor, however, as well as how sensitive the level of poverty is to the particular poverty line that is chosen. These issues are considered in more depth in section 3.

The recipient and control households are broadly similar on the other indicators presented here, with controls tending to be a little better off than recipients. Recipients in areas with conditions are often worse-off than those without conditions on these indicators, also, although the pattern is variable.

The various differences between the study groups will be due to the fact that relatively few, large units (locations) were randomised and so differences between the populations could quite easily

occur by chance. They will need attention in the data analysis, which is designed to address such differences, as outlined in section 1.

2.2 Characteristics of OVCs

Table 2.4 below shows the characteristics of the OVCs themselves. This excludes non-OVC children living OVC households, who will benefit from the programme and will also be tracked in the study. However, this table presents information only on OVCs.

Table 2.4 Characteristics of OVCs

	Treatment locations					Control locations			
	Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
OVC status - proportion of OVCs with following characteristics (%):									
Orphan (single or double)	95	94	94	97	96	91	90	90	93
Single orphan	55	57	56	63	62	64	66	65	63
Double orphan	39	38	38	33	35	28	24	25	30
Chronically ill	4	5	4	3	4	4	4	4	4
Looked after by a caregiver who is chronically ill	16	20	18	8	10	19	17	18	14
Living in a child-headed household	0	0	0	0	0	0	0	0	0
Proportion of OVCs cared for by… (%)									
Parent	50	47	49	57	55	64	63	64	59
Grandparent	36	32	34	18	21	14	15	15	18
Other relative	14	20	17	26	24	21	21	21	23
Non-relative	1	0	0	0	0	0	0	0	0
Age (%):									
0-5	15	15	15	16	15	19	18	18	17
6-10	31	32	32	33	33	32	35	34	33
11-15	42	40	41	38	38	37	35	36	37
16-17	12	13	12	14	13	12	11	12	13
Gender:									
Proportion male	57	54	56	52	53	51	46	48	51
N = number of OVCs (unweighted)	**1,805**	**2,287**	**4,092**	**593**	**4,685**	**1,931**	**529**	**2,460**	**7,145**

Source: OPM OVC-CT evaluation baseline data (2007).

Some 93% of OVCs are orphans. A significant number are also affected chronic illness of the carer or (more rarely) themselves. OVCs most commonly fall into the age group 11-15, which will probably reflect the increasing chance of losing a parent as the child ages. Controls have a slightly higher proportion of children under five years of age.

A parent is most likely to be the main carer of OVCs, reflecting the fact that single orphans are much more common than double orphans. Grandparents are also quite often the main caregivers for OVCs, with 18% being cared for by a grandparent. However, it appears that children with other

familial relationships are, overall, more common still. The care of children who are completely unrelated appears to be very rare.

Programme recipients are more likely to be cared for by grandparents than are controls (or carers in OVC households as a whole), no doubt due to the age-based prioritisation process used by the programme.

Around half of OVCs in the population as a whole are boys, as might be expected. However the programme appears to have selected somewhat more boys than girls as recipients – 56%, compared with 44% girls. This is quite a substantial difference from the overall population and should be checked in programme records. If it is confirmed in for the programme as a whole, the programme might need to assess what factors are driving the under-selection of girls and what can be done to address it.

2.3 Characteristics of caregivers

It is important to identify the characteristics of the caregivers. The following table shows caregivers' age, gender and job type.

Caregivers are considerably more likely to be female, as might be expected. Around 22% of caregivers in the study population as a whole are over 60, reflecting the important role of grandparents in caring for OVCs. This is somewhat higher in control households compared with the population as a whole, and reaches 37% in recipient households, due to the programme prioritising the most elderly care givers in its prioritisation process.

Most caregivers report having some kind of income-earning activity, although 27% of carers in recipient households report that they have none, compared with 20% in the study population as a whole. The most common activity is farming. This will include small-scale subsistence farming that may bring in a quite limited income. Carers in control households are more likely have an income-earning activity than those in the recipient households.

Table 2.5 Characteristics of main caregivers in OVC Households

	Treatment locations					Control locations			
	Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
Mean number of children per caregiver	2.7	2.8	2.7	2.9	2.8	3.0	2.5	2.7	2.8
Gender – proportion male (%)	16	14	15	15	15	16	16	16	16
Age (%)									
<18	1	2	2	0	1	2	3	2	1
18-29	17	13	15	26	24	22	23	23	23
30-39	10	9	9	21	19	21	24	23	21
40-49	16	14	15	17	17	17	17	17	17
50-59	20	24	22	17	18	10	14	12	15
>60	37	38	37	18	22	26	19	22	22
Proportion by job type (%)									
No job	28	26	27	24	24	17	15	16	20
Regular wage employment	1	1	1	7	6	3	6	5	5
Manual labourer	6	3	5	4	4	6	8	7	5
Fisherman	0	2	1	0	0	0	1	1	1
Farmer	47	45	46	44	45	49	36	42	43
Livestock farmer	0	1	1	2	2	1	2	1	2
Casual work	10	11	10	10	10	11	8	9	10
Own business / employer	8	10	9	9	9	12	20	17	13
Apprentice	0	0	0	0	0	0	0	0	0
Other	1	1	1	0	0	0	4	2	1
N = number of caregivers (unweighted)	**844**	**950**	**1,794**	**286**	**2,080**	**831**	**261**	**1,092**	**3,172**

Source: OPM OVC-CT evaluation baseline data (2007).

3 Targeting effectiveness – are cash transfers reaching the most vulnerable children?

This section looks at how effectively the programme reaches its target population. It examines whether the programme is reaching OVCs and how effectively it is identifying poor OVC households to receive payments. It decomposes the second of these issues into whether the distribution of recipients by districts reflects their level of poverty; whether the criteria used to identify poor OVC households are appropriate; and how well these criteria are applied in practice. It also undertakes a limited comparison between the study population and the national population.

3.1 Income poverty: targeting poor OVC households

As outlined in section 1, the programme was not intended to be primarily addressing poverty. It is a rights-based programme intended to support fostering of orphans and other vulnerable children, and the development of their potential (human capital). The selection of districts where the programme would operate was based on information on HIV prevalence and operational issues (including which districts would receive donor support). Nevertheless, the programme decided to target support to poor OVC households in the face of limited resources. After rejecting some alternative approaches, poor was defined using criteria suggested by local communities. Due to limited funds, the programme also introduced an additional prioritisation process to select the most vulnerable recipients from all households identified as eligible. The baseline survey was conducted at the point that only these beneficiaries were included in the programme. With additional resources provided in the wake of the political violence in the country in 2007, the programme expanded coverage to include eligible households that had been excluded by the prioritisation process. The baseline survey does not include this latter group. The basis on which future programme expansion would be conducted is not clear: it is not necessarily the case that support would be provided to all households identified as eligible under the current criteria (and the analysis presented below suggests it should not).

This complicates the analysis of poverty targeting. At the time of the baseline, some 21% of OVC households were identified for inclusion in the programme. One element of the analysis presented below therefore looks at how effectively the programme's selection process has managed to select the poorest 21% of OVC households. This is because, if resources are limited to providing coverage at this level, they should be targeted at the poorest of the potential recipients. This is a reasonable basis for the analysis in the absence of any alternative, explicit definition of 'most vulnerable' from the programme. However, since the programme in fact has the intention to reach a wider group of poor recipients, the analysis also addresses targeting issues with two higher-level cut-offs, the $1 and $2 per day poverty lines.

Section 2 showed that 38 percent of recipients fall below the $1 per day poverty line and 84 percent fall below the $2 line. These figures need to be treated with some caution, since they are sensitive to the methods used to collect the data and to calculate them.[13] They cannot be considered comparable to similar estimates for other populations, such as the overall population in Kenya, due to this fact. They show, however, that many programme recipients are 'poor'; and that how many are considered poor is very sensitive to the particular poverty line that is chosen. It seems questionable that a $2 per day cut-off is appropriate, for example, given that three-quarters

[13] Amongst other things, the survey used a cut-down consumption expenditure questionnaire based on recall that might give different estimates from a more extensive list of consumption items and approaches based on a diary. The consumption aggregate used in this analysis also excludes rent and is expressed per adult equivalent, whereas other analyses may use per capita measures.

of all OVC households (in the study population) fall below it. The analysis presented in this section could usefully be complemented by analysis of national KIHBS, which could be used to assess overall poverty levels in OVC households compared with the national population and national poverty lines, and to propose an appropriate target group based on nationally representative data.

It seems likely that, under any future scenario, the programme will have to compete for resources with other strands of GoK policy; that resources will always be limited; and the programme would have difficulties making the case for providing support to better-off OVC households when there are other groups or priorities that may have a stronger call on public resources. It seems likely that some form of poverty targeting will remain part of the programme's operations in the future, as/if it expands nationally. For any given level of support, it will be important that resources be directed at the poorest OVC households, although the programme might develop additional or alternative definitions of 'vulnerable' if that is considered more appropriate. In either case, the issue of defining and identifying poor OVC households will an important, ongoing issue for the programme. The analysis presented in this section identifies some significant concerns about the existing process.

3.2 Comparison between the study and the national populations

The survey sample covered only OVC households in the selected study locations. It provided no information on the socioeconomic characteristics of the population as a whole in those locations and was not national in scope. It was therefore not designed to provide a robust assessment of how poor OVC households are in relation to non-OVC households, or how poor households in the selected locations are in relation to the whole Kenya population.

Some comparisons can be made between national survey findings and those of the baseline survey to help address this question. However, while efforts were made to make the survey instrument comparable to national surveys wherever possible, there is always a concern that differences in questionnaires, in field procedures or in analytical approaches limit the comparability of the estimates. This issue most significantly affects consumption and income poverty comparisons.

Table 3.1 shows the comparison between the national population (based on recent DHS estimates) and the study population for a number of socioeconomic characteristics. It distinguishes intervention and control areas and the recipient households. On the whole, the differences between the national and study population are not large. In terms of housing infrastructure, the study population and intervention areas within them tend to be slightly worse off than the national population as a whole, and slightly better off than the national rural population. The exception to this is 'the percentage without a toilet', where the situation seems to be much worse than the national average (and the differences are so large that it suggests there may be issues of comparability).[14] The recipient households, while somewhat worse off than the study population as a whole, are generally no worse than the national rural population. Differentials in the ownership of telephones and radios are quite large but in opposite directions: the study population is less likely to own a radio but more likely to own a telephone.

[14] The DHS answer category is 'no toilet/bush/field' while the baseline survey uses 'no toilet/pan/bucket' to be comparable with the programme targeting approach. It may be that this is part of the reason for the difference.

Table 3.1 Comparison between study and national population – key indicators

Indicator	OVC-CT programme evaluation baseline survey (OVC households)				DHS 2003 (All households)		
	Treatment locations	Control locations	Whole sample	Recipient s only	Urban	Rural	Total
Household characteristics							
Mean household size	5	5	5	5	4	5	4
Mean number of rooms occupied by household[15]	2	2	2	2	2	3	3
Household dwelling – proportion of households with… (%)							
Poor quality roof (mud/cow dung/grass/sticks)	18	21	20	24	4	29	23
Poor quality floor (mud/cow dung)[16]	61	56	59	69	19	77	62
Main source of cooking fuel is firewood or residue/animal waste/grass	82	71	77	86	11	86	67
Main source of lighting fuel is electricity[17]	13	17	15	6	50	5	16
No toilet (toilet is of type none)	45	43	44	57	5	21	16
Main source of drinking water during the dry season is river, lake or pond[18]	49	41	45	49	5	54	42
Household assets – proportion of households that own… (%)							
Real estate (incl. dwelling)[19]	80	71	76	81	16	81	64
Radio	48	52	50	38	81	71	74
Telephone / mobile	21	31	26	12	33	6	13
Education							
Proportion of children aged 6-15 years currently enrolled in school	83	86	84	87	91	90	89
Health							
Proportion of children aged 0-59 months (i.e. < 5 years old) malnourished (<2sd) on height for age (***stunted***)[1]	28	29	29	33	24	32	30
Proportion of children aged 0-59 months (i.e. < 5 years old) malnourished (<2sd) on weight for age (***underweight***)[1]	17	16	17	21	13	21	20
Proportion of children aged 0-59 months (i.e. < 5 years old) malnourished (<2sd) on weight for height (***wasted***)[1]	4	5	4	7	4	6	6
Proportion of children aged 12-23 months (aged 1) fully	74	74	74	76	59	56	57

[15] The DHS 2003 gives figures for the mean number of persons per sleeping room.

[16] DHS 2003 equivalent categories include earth/mud/dung/sand.

[17] DHS 2003 asks only whether the household has electricity or not.

[18] DHS 2003 asks only source of drinking water; of the DHS categories here we include spring/river/stream/ pond/lake/dam (Dam is 3.3%).

[19] DHS 2003 asks whether household owns a) the structure of the house, and b) the land on which the structure sits. The national total for households who own their own house (and presumably the land it sits on) is 70.5%, somewhat closer to the baseline survey estimates.

Indicator	OVC-CT programme evaluation baseline survey (OVC households)				DHS 2003 (All households)		
	Treatment locations	Control locations	Whole sample	Recipient s only	Urban	Rural	Total
vaccinated							
Proportion of children aged 0-59 months (i.e. < 5 years old) that have been ill with diarrhoea at any time within the last month treated with additional fluids or ORS[20]	66	69	68	62	52	50	51
Health facility usage							
Proportion of children aged 0-59 months (i.e. < 5 years old) with diarrhoea in last month for whom treatment was sought from a health facility or provider[21]	46	43	45	45	–	–	30
Proportion of children aged 0-59 months (i.e. < 5 years old) with symptoms of ARI and/or fever in last month for whom treatment was sought from a health facility or provider[22]	69	68	68	74	54	44	46
N = # households (unweighted)	1,736	933	2,669	1,506			8,542

Source: OPM OVC-CT evaluation baseline data (2007).

In terms of social indicators, the study population is somewhat less likely to have children enrolled in school, but has similar levels of child malnutrition and is more likely to have children who are fully vaccinated and who are treated with ORS when sick with diarrhoea. The proportions of children who are taken to health facilities are broadly similar.

Overall, across a wide range of social indictors, the study population (and beneficiaries) appears to be mildly worse off than the national population as a whole and no worse than the national rural population. While some indicators may have improved in the national population in the period since the DHS (four years), this is unlikely to have been so large as to make this general conclusion invalid. This does not seem surprising since the programme did not have a specific policy of geographical targeting through identifying and working in the very poorest parts of Kenya.

Comparison of poverty rates in the evaluation sample and national poverty rates as estimated from the recently completed KIHBS are more problematic. This comparison is particularly sensitive to differences in the instrument and field procedures, as outlined above. The national estimates are derived from an approach that is different, and more comprehensive, than the baseline survey could be. While it would have been desirable to have a more comparable estimate, this limitation is the consequence of trading off the value of this information against the need to collect other types of information in some depth; the study was not designed to make such national comparisons. A crude comparison of households' reported consumption expenditure with the national poverty line suggests that some 78% of recipient households are below the national poverty line (see annex C). This is much higher than in the national population as a whole in the KIHBS (where it is 38%). However, the comparison of other social indicators shown above suggests that the populations are

[20] The DHS 2003 gives proportion of children under five years who had diarrhoea (or ARI symptoms/fever) in the two weeks preceding the survey.

[21] See note above.

[22] See note above.

not so different; a significant part of the difference is likely to be due to differences in methods rather than real differences in consumption levels. This analysis is not pursued further in this report; rather the $-per-day poverty lines are used. Analysis of the KIHBS data could usefully shed further light on the level of poverty in OVC households in general.

3.3 Recipient selection process

The programme targets resources at orphans and other vulnerable children. This is operationalised in line with the programme manual, which outlines the following process for deciding whether a household is eligible.

Within each geographic area in which the programme is operating, households were selected on the basis of their OVC and poverty status according to a defined set of selection criteria.

A household was classified as eligible for the programme if it satisfied both of the following conditions:

1. household contains at least one OVC
    a. A child (aged below 18) is defined as an OVC if:
        - they are an orphan (single or double); or
        - they are chronically ill;[23] or
        - they are looked after by a carer who is chronically ill

and

2. the household is poor
    a. A household was considered to be poor by the programme if it was observed to exhibit at least **eight** out of 17 specific poverty characteristics[24]

Since there were not sufficient financial resources to provide support to all eligible household, they were prioritised according to the following process, to identify the most vulnerable:

- Households are ranked by the age of child caregiver (from youngest to oldest if caregiver is less than 18 years of age; from the older to youngest down if caregiver is aged 18 or above).

[23] According to targeting manual a chronically ill person is defined as: "a person who has at least been chronically ill for the last 3 months and is both physically ill and socially incapable of working. Among the illnesses under this category are the following: tuberculosis, HIV/AIDS or cancer. Chronically ill is defined as a disease which can not be cured and is terminal." (Note this is not a standard definition of chronic illness).

[24] The 17 poverty characteristics are: (1) None of the adults in the household reached standard 8; (2) Caregiver is not currently working or s/he is working and is none or farmer or labourer; (3) Caregiver has less than two acres of land; (4) Construction materials of the walls is mud/cow/dung or grass/sticks/makuti; (5) Construction materials of the floor is mud/cow-dung; (6) Construction materials of the roof is mud/cow-dung; (7) Toilet is of the type none/pan/bucket; (8) Source of drinking is water is river, lake, pond or similar; (9) Source of lighting fuel is firewood; (10) Source of cooking fuel is firewood or residue/animal waste/grass; (11) No real state property here or elsewhere; (12) Two or less traditional zebu cattle; (13) No hybrid cattle; (14) Five or less goats; (15) Five or less sheep; (16) No pigs; (17) No camels.

- If two or more child caregivers have the same age, then the ranking is done by the number of OVCs, orphans and disabled household members.

Finally, a ranked list of eligible households for each programme location was sent back to communities for a final check of eligibility and level of vulnerability. Selected households were then invited to attend the enrolment event and formally enrol as recipients of the programme.

The baseline survey household questionnaire recorded the same information as was used by the programme to determine eligibility. Therefore it was possible to classify every household in the survey as either eligible or ineligible for the programme, based on what was reported in the survey.[25] Following the terminology used by the programme, a household is defined as 'eligible' if it satisfies the eligibility criteria outlined above.

The survey also collected information on the consumption-expenditure of households, which is used to define whether households are (income) poor. The issue of whether the targeting criteria, (a) as applied and (b) if correctly applied, succeed in identifying the poorest OVC households can therefore be addressed in the analysis.

Key questions:

Do the programme's targeting criteria effectively target poor OVC households?

Are these targeting criteria being appropriately implemented in the recipient selection process?

Is the net effect that the programme is successful in selecting poor OVC households?

3.4 Coverage and leakage – are the poorest OVC households being selected?

The OVC-CT programme's target population are the most vulnerable OVC households. Coverage is measured as the proportion of the target population that is receiving transfers. Leakage occurs when cash transfers are received by households that are not in the target population. A standard measure of leakage is therefore the proportion of recipients who are not part of the target population. Note that this analysis is based on who had been selected as a recipient at the time of the baseline. No cash had been paid to any households at that time, and the term 'leakage' does not imply that money was being diverted: it simply compares who had been selected to benefit from the programme with the target group who should benefit.

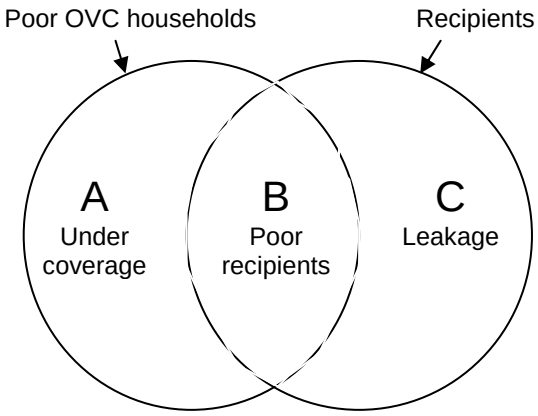
Therefore, in relation to diagram below, leakage and coverage are defined as follows:

$$leakage = \frac{C}{B+C} \times 100$$

[25] Note that due to missing data a small number of sampled households (less than 1%) could not be classified as eligible/ineligible.

$$\text{cov}erage = \frac{B}{A+B} \times 100$$

Coverage and leakage



Targeting in the OVC-CT programme effectively took place in two stages, both of which have an impact on targeting performance:

1. A *de facto* specific number of recipients (quota) was allotted to each location covered by the programme, since total funds were only sufficient to support a certain total number of households
2. The programme identified all eligible OVC households, and from them attempted to identify the poorest OVC households in each location with which to fill the quota

Targeting errors can therefore occur if:

- location quotas are not determined on the basis of the relative prevalence of poor OVC households
- the programme does not succeed in identifying the poorest OVC households in each location

It is of interest to the evaluation to assess both whether the poorest OVC households have been selected across the study population as whole (which reflects both processes) **and** whether the poorest households within each location have been selected (which reflects only the second of the two). It is for this reason that the overall consumption quintiles and the location-specific consumption terciles, as described in section 1, are defined. Both are used in the following analysis.

3.4.1 Cross-location targeting – are the location recipient allocations appropriate?

Table 3.2 below shows that the programme is reaching 21% of OVC households in the treatment locations; this translates into reaching 22% of OVCs. A comparison of coverage rates with poverty rates across the seven districts suggests that the number of recipients allocated to the treatment

locations in each district is not appropriate. For example, programme coverage in Kisumu is lower than in Nairobi, even though it has much higher poverty rates.

This is because the allocation of recipients to geographical areas was not generally made on the basis of estimates of the prevalence of poor OVC households: the programme did not seem to have any clear strategy on this issue at the time the numbers were allocated.[26] If it is to expand coverage, the programme needs to develop policies and procedures for allocating the number of recipients geographically based on estimates of need.

Table 3.2 Poverty rates and programme coverage

	Nairobi	Homa Bay	Migori	Kisumu	Suba	Kwale	Garissa	Non-conditional locations	Conditional locations	All treatment locations
Programme coverage:										
Proportion of OVC households in treatment locations benefiting from the programme (%)	21	20	20	15	29	33	20	25	19	21
Poverty:										
Proportion of OVC households in treatment locations which are living on less than $1 a day (%)[1]	7	48	32	23	27	48	57	34	30	31
Proportion of OVC households in treatment locations which are living on less than $2 a day (%)	53	92	87	75	80	84	89	84	76	80
N (= # OVC households)	226	209	402	318	271	143	167	947	789	1,736

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) An income of $1 a day translates to a real consumption expenditure per adult equivalent of Ksh 1133.5 per month using the World Bank's most recent PPP exchange rate (2005) adjusted for inflation since 2005.

Since the programme is covering 21% of OVC households in the treatment locations then, if there were perfect targeting at the poorest households, it should be the poorest 21% of OVC households that are benefiting from the programme. This is used as one of the measures to assess coverage and leakage. It translates to all those households with a real per capita consumption expenditure per adult equivalent per month of less than KSh 917.4.

Targeting of this group won't be perfect for a number of reasons, including the fact that the programme intended to reach a wider group of recipients if funds were available. Nevertheless, we may compare the distribution of the poorest OVC households with the number of recipients allocated by district. Table 3.3 below reveals that the allocation of recipients does not agree closely with distribution of the poorest 21% of OVC households across the treatment locations. The initial allocation of recipients across locations is therefore likely to contribute to targeting difficulties.

[26] In fact the evaluation team became involved in the question at some points because of concerns that the allocation would be distorted if not adjusted (though only for the study population).

Table 3.3 Distribution of poorest OVC households and and recipient allocation

	Nairobi	Homa Bay	Migori	Kisumu	Suba	Kwale	Garissa	Non-conditional locations	Conditional Locations	All treatment locations
Distribution of the poorest 21% of OVC households in treatment locations by district (%)[1]	3	22	21	18	10	15	11	44	56	100
Distribution of recipient allocation in treatment locations by district (%)	15	15	21	15	15	14	6	49	51	100

Source: OPM OVC-CT evaluation baseline data (2007).

3.4.2 Within-location targeting

The focus of this sub-section is the effectiveness of the programme's targeting procedures at selecting the poorest OVC households *within* each location, which is a necessary (but not sufficient) condition for effective targeting overall.

Table 3.4 tabulates the distribution of recipient OVC households by location consumption tercile. This assesses how poor the recipients are in comparison with other OVC households in the location where they live. The tercile cut-off points are defined separately for all the 14 treatment locations covered by the evaluation such that for each location each tercile contains a third of OVC households in that location. The tercile cut-offs are presented in Table C.5 in Annex C.

The estimates reveal that, while the programme does to some degree succeed in targeting transfers at relatively poorer OVC households within each location, there is significant scope for improvement, with some 28% coming from the top tercile and only 41% coming from bottom tercile. This means that 28% of recipients count amongst the better off third of OVC households in their location, whilst just 41% of recipients are amongst the poorest third.

Table 3.4 Distribution of OVC households benefiting from the programme in the treatment locations – by location consumption tercile (%)

	Non-conditional locations	Conditional locations	All treatment locations
Location tercile:			
Tercile 1 (poorest)	37	45	41
Tercile 2	31	30	31
Tercile 3 (better off)	32	25	28
Overall	100	100	100
N = # OVC households benefiting from the programme (unweighted)	824	682	1,506

Source: OPM OVC-CT evaluation baseline data (2007). Notes: Location consumption terciles were defined by location using estimates of (nominal) consumption expenditure per adult equivalent such that each tercile contained a third of OVC households in each location. Note that the sample for defining the tercile cut-offs is quite small in some of the locations (particularly in Garissa).

3.4.3 Coverage and leakage

The previous two sub-sections suggest that targeting effectiveness is being reduced by the allocation of recipients across districts and limited effectiveness in selecting the poorest OVC households within each location.

The net effect of these two problems is illustrated in the following table which presents various estimates of coverage and leakage. The coverage estimates show the proportion of poor OVC households that are benefiting from the programme, whereas the leakage estimates show the proportion of recipients that are above any given poverty line. The three poverty lines detailed above are used.

Table 3.5 Poverty targeting – coverage and leakage

	Non-conditional locations	Conditional locations	All treatment locations
Coverage of the poorest OVC households:			
Proportion of the poorest 21% of OVC households in programme locations who are recipients (%)[2]	25	24	24
Proportion of OVC households living on less than $1 a day which are recipients (%)[3]	25	26	26
Proportion of OVC households living on less than $2 a day which are recipients (%)	24	21	22
Leakage to non-poor OVC households:			
Proportion of recipients that are not within the poorest 21% of OVC households (%)	77	74	75
Proportion of recipients living on more than $1 a day (%)	65	59	62
Proportion of recipients living on more than $2 a day (%)	18	13	16
N (= # recipient households)	844	696	1,540

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) Leakage and coverage estimates do not have the same denominator and are not expected to sum to 100%. (2) This translates to all those households with a real per capita consumption expenditure per adult equivalent of less than Ksh 917.4. (3) An income of $1 a day translates to a real consumption expenditure per adult equivalent of Ksh 1133.5 per month using the World Bank's most recent PPP exchange rate (2005) adjusted for inflation since 2005.

The key point to note from Table 3.5 is that only around one quarter of the poorest households were selected to benefit from the programme at the time of the baseline survey. This reflects the limited coverage of the programme at that time (21% of households) due to budget constraints and the fact the programme has not managed to focus the transfers on the poorest recipients. This means that a large fraction of the poorest OVC households will not benefit from the programme. The subsequent enrolment of all eligible households will have increased coverage of the poorest after the baseline, since it increased the coverage as a whole. However it is clear that the existing targeting system is not very effective at ensuring that, for any given level of coverage, the poorest OVC households are selected.

The corollary of this is that a significant fraction of less-poor households are being covered by the programme. Three quarters of recipients are not from the poorest 21% of households, and 62% are above the $1 per day poverty line. Only 16% of recipients are above the $2 per day poverty line, however. Nobody would argue that households living on $2 per day are rich, or that they could not make good use of a cash transfer to support OVCs. However, it must be remembered that for any particular coverage level, and unless coverage for the poorer households is 100%, then support given to a better-off household is support denied to a poorer household, who may need it more.

Table 3.6 Distribution of recipients by consumption quintile

	Proportion of recipients (%)	Mean real monthly consumption expenditure (per adult equivalent)
Consumption quintile:		
Quintile 1 (poorest)	26	696
Quintile 2	24	1,132
Quintile 3	21	1,551
Quintile 4	16	2,036
Quintile 5 (better off)	14	3,345
Overall	100	1,550

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) In order to enable valid inter-district comparison, rent has been excluded from the calculation of mean monthly real consumption expenditure. Real consumption expenditure per adult equivalent has been estimated by adjusting nominal expenditure for price differences across districts using a Paasche price index constructed using OPM OVC-CT baseline data from the household and community surveys. (2) Quintiles were defined over all evaluation locations using estimates of real consumption expenditure per adult equivalent such that each quintile contained 20% of the OVC households. They therefore refer only the study population, and do not reflect the national distribution of consumption.

This is illustrated in Table 3.6, which shows the proportion of recipients by consumption quintile (households divided into five equal groups based on their consumption levels). The differences between the poorest and the better-off households are not trivial: the average consumption level in the top quintile is almost five times that of the poorest. Only half of recipients are in the bottom 40% of the population. Some 14% of recipients count amongst the best off 20% of OVC households in the evaluation locations, with a mean real monthly consumption expenditure (per adult equivalent) of Ksh 3,345, while other much poorer households are not benefiting from the programme.[27]

The challenge of improving targeting to redirect resources at the poorest households is an important one. The next section examines why the targeting process is not always identifying the poorest OVC households within each location.

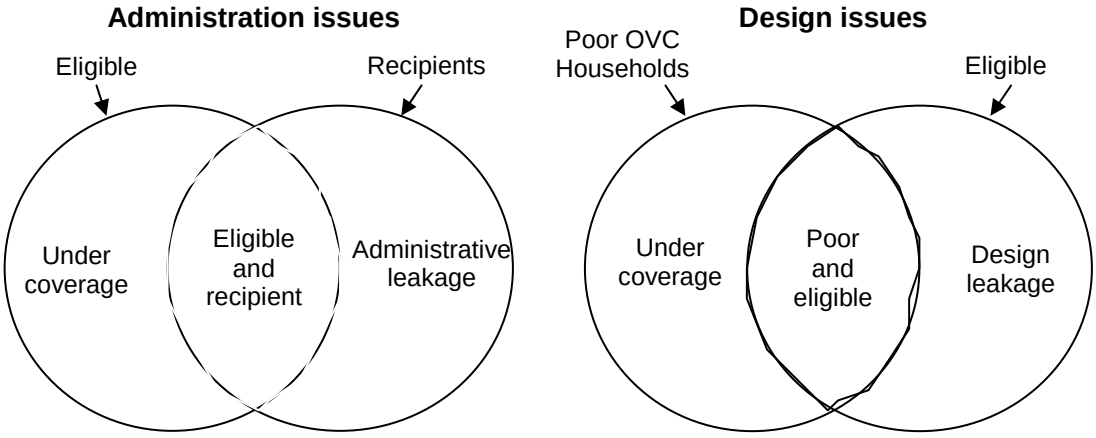
[27] For a family comprising of two adults and three children aged 5-14, for example, this translates to a total monthly household consumption expenditure of Ksh 13,213. Note that these targeting findings are not simply driven by the fact that the programme includes Nairobi. Similar concerns are identified if Nairobi is excluded from the analysis.

3.5 Decomposing the targeting problem – separating administration and design effects

The previous sub-section showed that targeting errors are being caused by both inappropriate recipient allocations across locations and by difficulties in identifying the poorest OVC households. To better understand the second of these concerns, it is useful to decompose the targeting problem, into issues of (a) design and (b) administration.

Design issues relate to how well the eligibility criteria succeed in pinpointing poor OVC households. If there are large numbers of poor OVC households that do not satisfy the eligibility criteria, or large numbers of non-poor OVC households that do, then there will be significant targeting errors.

Administrative issues relate to how successfully the targeting process is implemented. If the eligibility criteria are well designed but not properly implemented then there are likely to be significant targeting errors. On the other hand, administrative leakage may sometimes result in improved targeting, particularly if the eligibility criteria have been badly designed. In some cases, for example, communities may 'bend the rules' in order to allow poor but ineligible household to benefit from the programme.



3.5.1 Design issues – if applied correctly, would the eligibility criteria effectively target poor OVC households?

Key questions:

1. What proportion of OVC households meet the programme's eligibility criteria?
2. Do the programme's eligibility criteria successfully target the poorest OVC households in each location? What proportion of poor OVC households meet the programme's eligibility criteria?
3. What proportion of the households which meet the programme's eligibility criteria are not in fact poor?
4. Does the recipient prioritisation process (by caregiver age) succeed in targeting the poorest eligible households?

The programme reaches 21% of OVC households in the treatment locations. Table 3.7 shows that many more OVC households meet the criteria for potential inclusion than were covered by the programme funds at the time of the baseline. In fact, eligibility rates are so high that it appears that, as they are currently applied, the eligibility criteria are practically redundant, since they appear to exclude very few households.[28]

This means that the second stage process of prioritising households must screen large numbers of potential recipients and from amongst them select the poorest effectively. The effectiveness of this process will be the key determinant of overall targeting performance.

Table 3.7 Proportion of OVC households satisfying the programme's eligibility criteria

	Nairobi	Homa Bay	Migori	Kisumu	Suba	Kwale	Garissa	Non-conditional locations	Conditional locations	All treatment locations
Eligible households:										
Proportion of all OVC households in programme areas which meet the programme's eligibility criteria (%)[1]	84	96	97	97	95	100	100	97	94	95
N = # OVC households (unweighted)	226	209	401	316	271	143	166	945	787	1,732

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) Household defined as eligible if it meets the programme's eligibility criteria (determined using OPM OVC-CT evaluation data). Under 1% of sampled households could not be classified as eligible due to missing data.

As expected, given such indiscriminate eligibility criteria, Table 3.8 confirms that the eligibility criteria do not successfully pinpoint the poorest OVC households. Even the better-off households

[28] This analysis was revised in the light of clarification supplied by the programme about how the eligibility criteria were applied.

are likely to pass the test, and two thirds of the households identified as eligible fall above the $1 per day poverty line.

Table 3.8 Design leakage and potential coverage of poor OVC households in treatment locations

	Non-conditional locations	Conditional locations	All treatment locations
Potential coverage of the poorest OVC households:[2]			
Proportion of the poorest 21% of OVC households in treatment locations which meet the programme's eligibility criteria (%)[2]	100	100	100
Proportion of OVC households living on less than $1 a day which meet the programme's eligibility criteria (%)[3]	98	100	99
Proportion of OVC households living on less than $2 a day which meet the programme's eligibility criteria (%)	97	98	98
Design leakage:			
Proportion of eligible households that are not within the poorest 21% of OVC households (%)	77	78	78
Proportion of eligible households living on more than $1 a day (%)	66	68	67
Proportion of eligible households living on more than $2 a day (%)	16	20	18
N = # eligible households (unweighted)	925	768	1,693

Source: OPM OVC-CT evaluation baseline data (2007).

Table 3.9 below assesses why the eligibility criteria do not successfully identify the poorest OVC households *within each treatment location*, by assessing how much they are associated with poverty. It shows that there is significant scope for improving them.

Some of the poverty indicators perform badly in the sense that almost no OVC households display this characteristic, in particular Indicator 6 (mud/cow dung roof). Others perform badly in the sense that almost all households across all five quintiles exhibit this characteristic, e.g. Indicator 17 (own no camels). Others perform badly because there is no clear pattern in the variation better the poorest and better off groups.[29]

The average poverty score is over ten, suggesting that increasing the score required to be classified as poor by the programme (currently eight) might improve the targeting. However, the combination of these characteristics in line with the programme's selection rules shows only a very weak relationship with households (relative) consumption levels. In other words, the programme should re-assess the poverty targeting criteria that it uses.

[29] Note that many of these characteristics do show a relationship with consumption levels *across the population as a whole* (see Annex C), so their selection for use by the programme is understandable. However, much of this is due to variation *between* locations; they do not differentiate households *within* locations very successfully, which is what is required of them here.

Table 3.9 Proportion of OVC households in the treatment locations satisfying each of the programme's poverty indicators – by location consumption tercile (%)

	Tercile 1 (poorest)	Tercile 2	Tercile 3 (better off)	Overall
Proportion of OVC households with each of the following poverty characteristics (%):				
(1) Household contains no adults that have reached Standard 8	32	37	38	36
(2) Caregiver is not currently working *or* working as a farmer/labourer	85	73	68	76
(3) Caregiver has less than two acres of land	61	65	54	60
(4) Construction material of household dwelling walls is mud/cow dung or grass/sticks/makuti	71	68	65	68
(5) Construction materials of household dwelling floor is mud/cow dung	69	57	57	61
(6) Construction materials of household dwelling roof is mud/cow dung	0	0	0	0
(7) Household toilet is of the type none/pan/bucket	43	46	47	45
(8) Household's source of drinking water is river, lake, pond or similar	51	55	41	49
(9) Household's source of lighting fuel is firewood	9	2	2	5
(10) Household's source of cooking fuel is firewood or residue/animal waste/grass;	82	83	79	82
(11) Household owns no real estate property	17	21	22	20
(12) Household owns just two or less traditional zebu cattle	89	82	79	84
(13) Household owns no hybrid cattle	100	97	95	98
(14) Household owns five or less goats	94	88	92	91
(15) Household owns five or less sheep	98	96	94	96
(16) Household owns no pigs	99	100	100	99
(17) Household owns no camels.	97	95	96	96
Average number of characteristics satisfied (poverty score)	10.9	10.6	10.3	10.6
Proportion poor on programme's definition (poverty score of eight or higher)	100	94	91	95
N = # OVC households (unweighted)	715	522	499	1,736

Source: OPM OVC-CT evaluation baseline data (2007). Notes: Location consumption terciles were defined by location using estimates of (nominal) consumption expenditure per adult equivalent such that each tercile contained a third of OVC households in each location.

As noted previously, the fact that almost all OVC households are eligible means that the prioritisation of eligible households becomes critical. The programme prioritises eligible households according to the age of the main caregiver (youngest to oldest for caregivers under 18; oldest to youngest for caregivers over 18).

Table 3.10 below presents the distribution of eligible households in treatment location by location consumption tercile for each priority ranking quintile. Priority ranking quintiles were defined by first ranking all eligible households according to the programme's prioritisation criteria; eligible households were then assigned to a quintile such that each ranking quintile contains 20% of eligible households in each location. This therefore enables an assessment of how well this prioritisation procedure succeeds in targeting the poorest eligible households, and in fact the

programme's criteria for prioritising eligible households do tend to target those eligible households which are relatively poorer within each location. There is, however, clear scope for improvement since the relationship is quite weak.

Table 3.10 Distribution of eligible households in the treatment locations – by priority ranking and location consumption tercile (%)

	Tercile 1 (less well off)	Tercile 2	Tercile 3 (better off)	Overall
Priority ranking quintile:				
Quintile 1 (highest priority)	43	33	24	100
Quintile 2	40	36	24	100
Quintile 3	39	24	37	100
Quintile 4	29	28	43	100
Quintile 5 (lowest priority)	32	45	22	100

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) Location consumption terciles were defined by location using estimates of (nominal) consumption expenditure per adult equivalent such that each tercile contained a third of OVC households in each location. (2) Priority ranking quintiles were defined by first ranking all eligible households according to the programme's prioritisation criteria: by the age of child caregiver (from youngest to oldest if caregiver less than 18 years of age; from the older to youngest down if caregiver is over 18). Eligible households were then assigned to a quintile such that each ranking quintile contains 20% of eligible households in each location.

3.5.2 Administration issues – are the eligibility criteria being correctly applied in practice?

Key questions:

1. What proportion of the households that meet the programme's eligibility criteria are benefiting from the programme?
2. What proportion of recipient households are not in fact eligible, i.e. do not meet the programme's eligibility criteria?

Coverage of eligible households by the programme basically coincides with the programme coverage rate (22% versus 21%), as shown in Table 3.11. This is because very few ineligible households are covered, which would be expected given that most households pass the eligibility test.

There are very few ineligible recipients – overall just 4%, meaning that the programme leakage to ineligible households is low. This is higher in Nairobi, at 10%. Overall, just 2% of recipient households fail the programme's poverty eligibility criteria. A further (small) 2% do not contain OVCs, although it should be noted that even these households might have been screened out in

the programme enrolment process, which came after the baseline survey. The programme has therefore avoided leakage to non-OVC households.

In addition, a comparison of recipient's ethnic group (tribe) with information on the majority ethnic group in each area did not show any evidence that minorities were being disproportionately excluded from the programme (table not shown).

Table 3.11 Administrative leakage and coverage of eligible households in the treatment locations

	Nairobi	Homa Bay	Migori	Kisumu	Suba	Kwale	Garissa	Non-conditional locations	Conditional locations	All treatment locations
Coverage of eligible households:[1]										
Proportion of eligible households in programme areas which are recipients (%)	24	20	21	15	30	32	21	25	19	22
N = # eligible households (unweighted)	211	206	393	311	265	142	166	925	769	1,694
Administrative leakage:										
Proportion of recipient households that do not meet the criteria set by the programme for inclusion (%)	10	2	2	4	3	2	6	4	3	4
Of which……										
…. contain no OVCs (%)	5	1	1	2	1	1	6	2	2	2
…. fail programme's poverty test (%)	5	1	1	1	2	1	0	2	2	2
N = # recipient households (unweighted)	**205**	**180**	**350**	**279**	**238**	**125**	**159**	**842**	**694**	**1,536**

Source: OPM OVC-CT evaluation baseline data (2007).

4 Welfare indicators – baseline levels

This section presents the baseline levels of the key non-income welfare indicators which will form the focus of the evaluation of programme impact at follow-up. It also compares the recipient and control households, and the conditional and unconditional programme populations on a range of such measures. While they cannot be expected to be identical, substantial differences are of interest because it means that the 'starting points' for these indicators are not the same.

Once the follow-up survey has been implemented the programme's impact on a range of health, education and other welfare indicators will be assessed by comparing the change that has occurred amongst the programme recipients, against the change experienced by the control group. Similarly, judgements can be made about the impact of imposing conditions by assessing making this comparison separately for the conditional and unconditional treatment locations. In theory, this approach should 'cancel out' any differences in starting levels of the indicators and their (time-invariant) determinants. It will also be possible to test for impact on welfare indicators by estimating econometric models that regress the change in each indicator on a range of explanatory variables.

4.1 Child welfare

The estimates in this section relate to all children living in OVC households (i.e. including non-OVCs).[30] This is because the benefits of the cash support are expected to affect all children in the household. Furthermore, in programme locations where conditions are being imposed, they are applied to all children in the household, not just OVCs. Therefore the programme is expected to have a positive welfare impact on all children in OVC households, not just OVCs.

Table 4.1 below presents the baseline health and nutrition indicator levels. This is a puzzling table. Overall the health indicators suggest that levels of child health are often worse amongst OVC households in control locations as compared to treatment locations. In particular, the incidence of malnutrition is higher, and children are more likely to have been ill with a fever, cough or diarrhoea. This is somewhat counter-intuitive given that control households appear to be somewhat better off economically than recipients (see Section 2, Table 2.3 above) and that relatively better off households are probably more likely to seek and have access to healthcare services.

The differences between the recipient households in conditional and unconditional locations are more surprising still. Children in the conditional locations have substantially worse (chronic) malnutrition indicators, while most other health indicators are substantially better. This appears contradictory (although not impossible) and raises concerns about whether some estimates may have been systematically skewed by inaccurate reporting by survey respondents in recipient households in conditional locations. It is known that the programme had begun to disseminate information about its activities and it is possible that some households may have given falsely positive reports because they believed it would have an impact on the level of support they would receive. It should be noted, however, that conditionality was assigned by district, and therefore these variations could simply reflect differences in household behaviour, food supply and/or in the supply of health services across districts.[31] This requires further investigation.

[30] A similar table for OVCs alone can be found in Annex A (Table A.1).

[31] It would clearly be of substantial concern if there has been extensive deliberate misreporting. Some indicators are essentially unfalsifiable, however, eg card-based vaccination coverage rates, anthropometric measures. Furthermore, the programme had not developed detailed policies on conditions at the time of the baseline survey. Some additional analysis will be undertaken around this issue in the follow up survey.

Table 4.1 Health and nutrition indicators – all children in OVC households

		Treatment locations					Control locations			
		Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
1a	proportion of children < 6 years old malnourished (<2sd) on height for age (stunted)[1]	35	27	32	25	27	37	20	28	27
1b	proportion of children < 6 years old malnourished (<2sd) on weight for age (underweight)[1]	23	16	20	16	17	23	8	15	16
1c	proportion of children aged. < 6 years old malnourished (<2sd) on weight for height (wasted)[1]	6	7	7	2	3	7	3	5	4
2	proportion of children aged aged 1 – 3 years in recipient households fully vaccinated [2]	87	55	75	56	60	70	78	74	66
3	proportion of children < 5 years old in recipient households been ill with a fever or cough or diarrhoea	62	62	62	67	66	65	72	69	68
4	proportion children aged 1-3 years with a health card	62	43	54	45	47	63	64	63	55
5	proportion of children < 5 years old who have been weighed by a health worker within the last six months	38	21	31	24	25	22	19	21	23
6	proportion of children < 5 years old who have been ill with a fever, cough or diarrhoea at any time within the last month whose caregiver sought advice or treatment from an appropriate source of care[3]	71	72	72	71	71	75	85	80	75
7	proportion of children < 5 years old who have been ill with diarrhoea at any time within the last month given extra liquids or ORS to drink	77	70	74	68	69	67	68	68	68
8	proportion of children < 5 years old) whose caregiver has heard of malaria and know effective ways of preventing it[4]	99	96	97	96	96	97	100	98	97

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) See Annex B for details of the anthropometric analysis and definition of ***stunted***, ***underweight*** **and** ***wasted***. (2) A child is defined as fully vaccinated is they have received at least three DPT, three polio, one BCG and one measles vaccination injections. (3) An appropriate source of care is defined as being a hospital, government health centre, mission/church/mosque hospital, private hospital/clinic, mobile clinic or community health worker. (4) The malaria prevention measures that are defined as effective are: sleeping under a bed net; clearing away standing water; and spraying to kill mosquitoes.

As might be expected, given that the control selection process generally succeeded in selecting a somewhat poorer than average group of households, the children in these households generally have somewhat poorer health indicators than the rest of the (control) population. This is true for the recipients when considering the anthropometric measures, but not for other indicators, and tends to be driven by the conditional/unconditional differences outlined above.

Table 4.2 Education indicators – all children in OVC households

		Treatment locations					Control locations			
		Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
1	proportion of children aged 4 or 5 (48-71 months) currently attending nursery (pre-school)	53	70	62	63	63	57	64	61	62
2a	proportion of children aged 6-17 years ever attended school	92	89	90	85	86	89	88	89	87
2b	proportion of children aged 6-12 years ever attended primary school	87	85	86	79	80	84	84	84	82
2c	proportion of children aged 13-17 years ever attended secondary school	10	14	12	15	15	16	20	18	16
3a	proportion of children aged 6-17 years currently enrolled in school	86	85	85	82	83	85	86	85	84
3b	proportion of children aged 6-12 years currently enrolled in primary school	85	83	84	77	78	82	84	83	80
3c	proportion of children aged 13-17 years currently enrolled in secondary school	6	8	7	9	9	10	12	11	10
4	proportion of children aged 6-17 (currently enrolled in school) present in school on most recent day open	96	90	94	96	95	96	95	95	95
5	mean number of days of school missed in the most recent two months for children aged 6-17 years who are enrolled in school	1.3	1.4	1.3	1.3	1.3	1.9	1.4	1.6	1.5
6	proportion of children aged 6-17 years currently enrolled in school that are repeating a class	11	13	12	9	10	12	11	12	11

Source: OPM OVC-CT evaluation baseline data (2007). Notes: Children in Kenya generally begin primary school when they are 6-8 years old. There are eight classes in primary school (Standard 1 – Standard 8), but due to class repetition students may attend primary school for more than eight years. There are six classes in secondary school (Form 1 – Form 6).

Table 4.2 presents indicators of school enrolment and attendance for children living in OVC households. The baseline indicator levels are broadly similar across treatment and control locations, although some are slightly better in control locations. In programme locations, children in recipient households have slightly higher attendance and enrolment rates than all children in OVC households. This raises a similar concern about possible intentional misreporting by recipients. Similarly, some care must be taken in interpreting reported absence from school, although differences are almost negligible.[32] The follow-up survey should also look at class transition and repetition rates, in addition to reported attendance levels, since these measures are unlikely to be falsified.

[32] It was the impression of the fieldteams that, early in the fieldwork, interviewed households were not always truthful in reporting their children's absence from school, although once this problem was identified then strategies were developed to deal with it.

As for the child health indicators, the education indicators have also been estimated for just OVCs. These are presented in Table A.2 in Annex A. Comparing Table A.2 with Table 4.2 reveals very little difference in the education indicators between OVCs and non-OVCs living in OVC households.

Table 4.3 Other welfare indicators – all children in OVC households

		Treatment locations					Control locations			
		Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
1a	proportion of children (aged 0-17) holding a birth certificate or birth registration form	22	17	20	24	23	33	30	32	27
1b	proportion of children aged 0-5 holding a birth certificate or birth registration form	24	20	22	26	25	39	38	38	32
1c	proportion of children aged 6-10 holding a birth certificate or birth registration form	23	14	19	24	23	32	23	27	25
1d	proportion of children aged 11-17 holding a birth certificate or birth registration form	21	17	19	22	22	31	32	32	26
2a	proportion of children aged 5-17 years doing paid work	8	7	7	2	3	5	3	4	3
2b	proportion of children aged 5-10 years doing paid work	4	1	3	1	1	1	0	1	1
2c	proportion of children aged 11-17 years doing paid work	10	11	10	3	5	8	5	6	5
3	mean number of hours worked per week for children (aged 5-17) that are involved in paid work	13	16	14	-	15	16	-	14	15
4a	proportion of children aged 5-17 years doing unpaid work[2]	84	77	80	82	82	75	79	77	79
4b	proportion of children aged 5-10 years doing unpaid work[2]	72	67	70	69	70	62	68	65	67
4c	proportion of children aged 11-17 years doing unpaid work[2]	92	84	88	91	91	85	88	86	89
5	mean number of hours worked per week for children (aged 5-17) doing unpaid work[2]	19	17	18	17	17	14	14	14	16

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) There are not enough observations to generate reliable estimates for Indicator 3 (mean hours worked per week) for children in non-recipient and non-control households. (2) Examples of unpaid work include housework or doing work for the family farm or business.

Additional indicators are presented in Table 4.3. Indicators 1a – 1d relate to whether or not children hold a birth certificate or registration form. The estimates suggest that younger children (aged less than six) are slightly more likely to have one or both of these items, perhaps reflecting improvements in birth registrations in recent years. Children in control locations are more likely to have a birth certificate or registration form than those in treatment locations.

Indicators 2a – 2c relate to the proportion of children doing paid work. Unsurprisingly older children are more likely to do paid work, but the overall proportion of children doing paid work is relatively low. However, Indicator 3 suggests that where children do undertake paid work the average number of hours worked per week is significant. Indicators 4a – 4c reveal that the majority of children in OVC households do unpaid work in the household (e.g. housework, work for family farm or business, etc), and Indicator 5 shows that those children work 2-3 hours every day on average. Unsurprisingly, older children are considerably more likely to do unpaid work.

Children appear slightly more likely to be engaged in paid or unpaid activities in programme locations compared with controls. Those in conditional locations are more likely to be working than those in unconditional locations.

4.2 Household-level welfare measures

Table 4.4 below presents six more welfare indicators. These indicators all relate to the overall welfare of the household as a whole. Again the estimates suggest that households in control locations appear to have higher welfare levels than those in treatment locations. Expenditure on health and education is somewhat lower in conditional areas compared with unconditional locations. Around 20% of all OVC households, and over one quarter of programme recipients, report receiving some form of external support.

Table 4.4 Household welfare indicators

		Treatment locations					Control locations			
		Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
1	mean monthly real household consumption expenditure per adult equivalent[1]	1,467	1,636	1,550	1,765	1,719	1,734	2,069	1,929	1,821
2	mean monthly food consumption expenditure (household total)[2]	3,976	4,080	4,027	4,528	4,422	4,075	4,810	4,503	4,461
3	food share of consumption expenditure	65	70	67	61	62	67	57	62	62
4	mean monthly health expenditure per capita (excluding AIDS drugs)[2]	32	39	35	48	46	51	67	61	53
5	mean monthly education expenditure per child[2]	96	137	116	166	155	132	185	163	159
6	proportion of households receiving external support	23	33	28	22	23	19	21	20	22

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) Monthly household consumption expenditure has been adjusted for regional price variations. (2) Expressed in nominal terms, i.e. has not been adjusted for regional price variations. (3) Sources of support include local community, friends or relatives, NGOs, etc.

4.3 Differences in community characteristics

This section examines a number of characteristics reported in the community interviews, including reports on the supply of health and education services. Between them, the three sets of tables

suggest that there are some differences between the intervention and control locations, although the differences are not systematic. Control locations tend to report better access to health services. If necessary, this information can be used in modelling changes in the indicators in the final analysis to be undertaken after the follow-up survey.

Table 4.5 General community characteristics

	Treatment locations					Control locations			
	Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
Proportion of OVC households living in a community with the following characteristics (%)									
Accessible by car	59	95	77	76	76	70	75	73	75
Accessible by car all year round	29	25	27	36	34	30	46	39	37
Public motor transport links with district centre	58	71	64	71	70	89	89	89	79
More than 10km away from nearest place where birth certificates are issued	90	59	74	74	74	73	74	74	74
More than 10km away from nearest place where ID cards are issued	22	38	30	27	28	47	39	42	35
Children (aged under 18) work for money	65	95	79	78	78	66	73	70	74
Young children (aged under 12) work for money	25	45	35	35	35	34	34	34	35
Mean time required to travel from household's community to (hours)[1]									
District centre	2.2	2.9	2.6	2.0	2.1	2.5	2.6	2.6	2.4
Daily market	0.9	0.7	0.8	0.8	0.8	0.7	0.6	0.7	0.7
N = # of OVC households (unweighted)	696	844	1,540	238	1,778	754	227	981	2,759

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) Travel time required when using the normal mode of transport for that community.

Table 4.6 Supply of health services

	Treatment locations					Control locations			
	Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
Distance to health provider – proportion of OVC households. (%)									
Within 10km of a hospital (government / private / NGO)	75	50	63	85	80	67	63	65	73
Within 5km of a health centre (government / private / NGO/ mission)	46	44	45	47	46	58	69	65	55
Within 5km of a government dispensary, private chemist or community drug centre	64	66	65	64	64	89	89	89	76
Within 5km of a private doctor or nurse	37	21	29	32	31	41	23	30	31
Community health worker services – proportion of OVC households in communities that receive. (%)									
Regular visits from health workers	48	39	44	41	41	60	58	59	49
Regular visits from health workers that provide vaccinations	47	28	38	37	37	52	51	52	44
Regular visits from health workers that can weigh and measure small children and record results on the health card	36	23	30	31	31	24	23	23	27
Regular visits from health workers that can supply drugs to treat malaria	14	25	19	16	16	16	14	15	16
N - # of OVC households (unweighted)	696	844	1,540	238	1,778	754	227	981	2,759

Source: OPM OVC-CT evaluation baseline data (2007).

Table 4.7 Supply of education services

	Treatment locations					Control locations			
	Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
Distance to education facilities – proportion of OVC households. (%)									
Within 2km of a government nursery	76	80	78	81	80	79	75	76	78
Within 2km of a primary school (government / private / NGO)	93	95	94	93	93	77	80	79	86
Within 2km of a secondary school (government / NGO)	51	59	55	58	58	43	56	51	54
N - # of OVC households (unweighted)	696	844	1,540	238	1,778	754	227	981	2,759

Source: OPM OVC-CT evaluation baseline data (2007).

5 Conclusions

This report has presented the findings from the baseline survey of the independent evaluation of the OVC-CT programme. It has presented the baseline estimates against which programme impact will be assessed at follow-up and has compared the programme and control populations at baseline. It has also assessed how successful the programme has been in reaching its target group i.e. poor OVC households.

The survey showed the overwhelming predominance of orphanhood as a basis for inclusion as an OVC. It identified a concern that there seems to be an over-representation of boys amongst programme recipients. It found that a parent is still the most likely individual to be the main carer of OVCs and that the care of children who are completely unrelated appears to be rare. It showed the important role of grandparents as carers, particularly in recipient households.

5.1 Targeting

The targeting analysis showed that almost all (98%) of the recipient households identified contain an OVC, i.e. contain an orphan, sick child or a chronically sick carer; screening at enrolment may even have further increased this proportion. On many welfare indicators, recipients are on average somewhat more disadvantaged than the rest of the OVC population in their locations. Recipient households generally have poorer quality housing, fewer assets and lower levels of education amongst adults than non-recipient households. They are more likely to have malnourished children, although some other health indicators and school enrolment appear to be slightly better.

It is recognised that the programme is not intended to combat poverty as a primary objective, and that the analysis of poverty targeting is complicated by a number of factors. Nevertheless, the programme decided to target support to poor OVC households in the face of limited resources. The analysis of how successful poverty targeting has been is therefore important.

The analysis shows that 38 percent of recipients fall below the $1 per day poverty line and 84 percent fall below the $2 line. Many programme recipients are in some sense ‘poor’. However, it is also clear that how many recipients are considered to be poor is very sensitive to the poverty line that is chosen.

It is clear that the programme is having difficulties directing resources at the poorest OVC households. Only around one quarter of the poorest households were selected for inclusion in the programme. As a result, a large fraction of the poorest OVC households will miss out on support, while households who are appreciably better off will benefit. This reflects problems in the allocation of the numbers of recipients *between* districts, and the identification of the poorest recipients *within* them.

It seems likely that some form of poverty targeting will remain part of the programme’s operations in the future. The issue of defining and identifying poor OVC households is an important, ongoing issue that the programme will need to address.

Baseline welfare measures

Various measures of welfare are presented for the recipient and control populations, and compared between programme locations with and without conditions. Changes in these measures will form the basis for estimates of programme impact, and the impact of imposing conditions, once the follow-up survey has been conducted.

In general, the recipient and control households are somewhat poorer and more disadvantaged than the overall population of OVC households in the same locations. The programme and control populations appear to be broadly comparable to one another and there is no pattern of systematic differences between locations with and without conditions.

However, there are differences for specific indicators and sets of indicators between these various groups. By chance, households in the control locations appear to be somewhat better off economically than those in treatment locations, and this is reflected in differences in a number of other baseline welfare indicators. Birth registration is also somewhat higher in the control population. Community reports suggest some differences in access to services, also, with somewhat better access to health facilities in the control population but better access to schools amongst the recipients.

The pattern of differences in the health and nutrition indicators is puzzling. Programme locations with conditions appear to have significantly worse child nutrition indicators and significantly better other health indicators. This requires further investigation. Differences in some of the reported education measures are smaller but also suggest ensuring that a range of education indicators, including class repetition, are collected in the follow-up survey.

These differences are due to the study having to randomise a limited number of large geographical units. They must be considered in the analysis undertaken after the follow-up survey. The design of the evaluation will help to address them.

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Annex A Child welfare indicators – additional tables

Table A.1 Health and nutrition indicators – all OVCs

		Treatment locations					Control locations			
		Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
1a	proportion of children aged 0-59 months (i.e. < 5 years old) malnourished (<2sd) on height for age (stunted)	28	29	28	23	24	45	18	31	27
1b	proportion of children aged 0-59 months (i.e. < 5 years old) malnourished (<2sd) on weight for age (underweight)	19	15	17	11	12	28	7	16	14
1c	proportion of children aged 0-59 months (i.e. < 5 years old) malnourished (<2sd) on weight for height (wasted)	6	6	6	1	2	7	3	5	4
2	proportion of children aged 12-47 months (aged 1 - 3) in recipient households fully vaccinated	83	54	70	55	58	74	75	75	67
3	proportion of children aged 0-59 months (i.e. < 5 years old) in recipient households been ill with a fever or cough or diarrhoea	65	64	64	78	75	68	81	75	75
4	proportion children 12-47 months(i.e. aged 1-3) with a health card	52	41	47	35	37	58	58	58	48
5	proportion of children aged 0-59 months (i.e. < 5 years old) been weighed by a health worker within the last six months	29	21	25	28	27	20	19	20	24
6	proportion of children aged 0-59 months (i.e. < 5 years old) that have been ill with a fever, cough or diarrhoea at any time within the last month whose caregiver sought advice or treatment from an appropriate source of care	72	67	69	70	70	73	87	80	75
7	proportion of children aged 0-59 months (i.e. < 5 years old) that have been ill with diarrhoea at any time within the last month treated appropriately (food, drink, ORS)	73	67	70	72	72	73	70	71	72
8	proportion of children aged 0-59 months (i.e. < 5 years old) whose caregiver has heard of malaria and know effective ways of preventing it	98	96	97	99	98	95	99	97	98

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) A child is defined as fully vaccinated is they have received at least three DPT, three polio, one BCG and one measles vaccination injections. (2) An appropriate source of care is defined as being a hospital, government health centre, mission/church/mosque hospital, private hospital/clinic, mobile clinic or community health worker. (3) An appropriate treatment of diarrhoea is defined as being given more to drink and/or ORS. (4) The malaria prevention measures that are defined as effective are: sleeping under a bed net; clearing away standing water; and spraying to kill mosquitoes.

Table A.2 Education indicators – all OVCs

		Treatment locations					Control locations			
		Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
1	proportion of children aged 4 or 5 (48-71 months) currently attending nursery (pre-school)	60	68	64	67	67	51	63	58	62
2a	proportion of children aged 6-17 years ever attended school	93	89	91	86	87	90	90	90	89
2b	proportion of children aged 6-12 years ever attended primary school	88	86	87	80	82	85	87	86	84
2c	proportion of children aged 13-17 years ever attended secondary school	10	13	12	15	14	16	21	19	16
3a	proportion of children aged 6-17 years currently enrolled in school	87	85	86	82	83	86	88	87	85
3b	proportion of children aged 6-12 years currently enrolled in primary school	87	85	86	78	80	83	86	85	82
3c	proportion of children aged 13-17 years currently enrolled in secondary school	6	8	7	8	7	11	12	12	9
4	proportion of children aged 6-17 (currently enrolled in school) present in school on most recent day open	96	91	94	96	95	96	95	95	95
5	mean number of days of school missed in the most recent two months for children aged 6-17 years who are enrolled in school	1.3	1.4	1.3	1.4	1.4	1.8	1.4	1.6	1.5
6	proportion of children aged 6-17 years currently enrolled in school that are repeating a class	11	13	12	9	10	12	11	11	10

Source: OPM OVC-CT evaluation baseline data (2007). Notes: Children in Kenya generally begin primary school when they are 6-8 years old. There are eight classes in primary school (Standard 1 – Standard 8), but due to class repetition students may attend primary school for more than eight years. There are six classes in secondary school (Form 1 – Form 6).

Table A.3 Other welfare indicators – all OVCs

		Treatment locations					Control locations			
		Recipient – Conditions	Recipient – No conditions	Recipient – Overall	Non-recipient	Overall	Control	Non-control	Overall	Overall
1a	proportion of children (aged 0-17) holding a birth certificate or birth registration form	22	16	19	21	21	33	31	32	26
1b	proportion of children aged 0-5 holding a birth certificate or birth registration form	25	17	21	21	21	39	44	42	32
1c	proportion of children aged 6-10 holding a birth certificate or birth registration form	22	14	18	22	21	30	21	25	23
1d	proportion of children aged 11-17 holding a birth certificate or birth registration form	21	17	19	21	21	32	33	33	26
2a	proportion of children aged 5-17 years doing paid work	7	7	7	3	4	5	3	4	4
2b	proportion of children aged 5-10 years doing paid work	3	1	2	1	1	1	0	1	1
2c	proportion of children aged 11-17 years doing paid work	10	11	11	4	5	8	5	7	6
3	mean number of hours worked per week for children (aged 5-17) that are involved in paid work	13	16	15	-	16	17	-	15	15
4a	proportion of children aged 5-17 years doing unpaid work[2]	84	78	81	83	83	76	78	77	80
4b	proportion of children aged 5-10 years doing unpaid work[2]	73	68	70	73	72	64	67	66	69
4c	proportion of children aged 11-17 years doing unpaid work[2]	92	85	88	91	90	84	87	86	88
5	mean number of hours worked per week for children (aged 5-17) that are involved doing unpaid work[2]	19	17	18	18	18	14	15	14	16

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) There are not enough observations to generate reliable estimates for Indicator 3 (mean hours worked per week) for children in non-recipient and non-control households. (2) Examples of unpaid work include housework or doing work for the family farm or business.

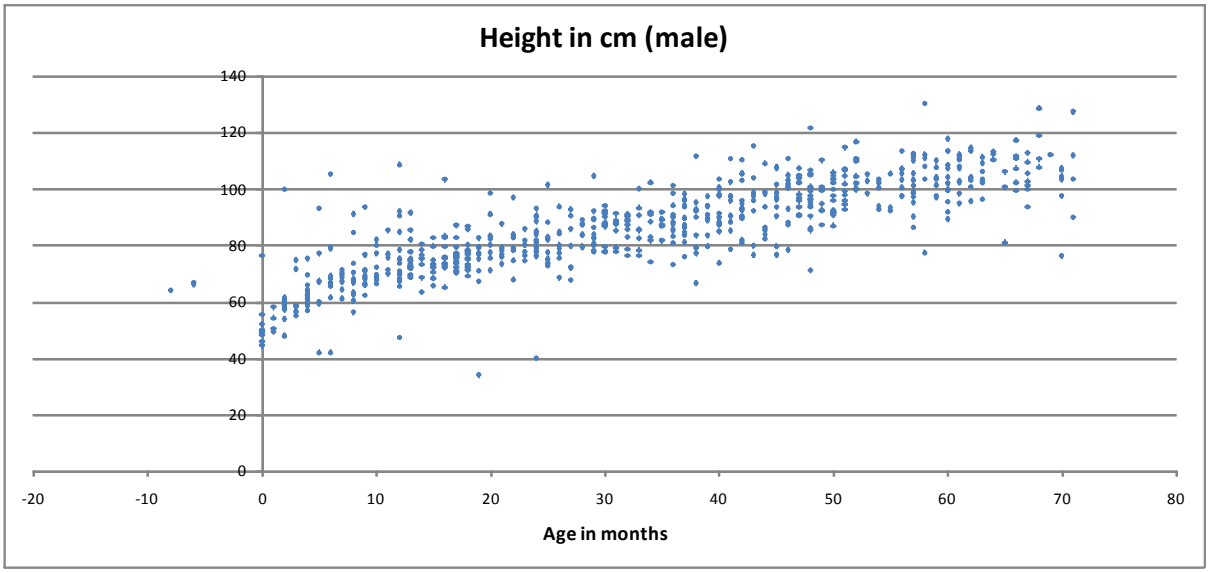
Annex B Anthropometric analysis

B.1 The data

In total, out of a total survey population of 15,464, there were 1,994 children under six years old, representing 12.89% of all observations. Of these, we had at least month and year of birth for 72.87%, or 1,453 observations in total. In addition, we had both height *and* weight measurements for 89.48% of all children for whom we had recorded anthropometric data, or 1,641 out of 1,834 observations in total. Of those for whom we had recorded anthropometric data, we had month and year of birth for 1,347 observations, or 73.45%. Of these, we had both height *and* weight measurements for 92.65%, or 1248 observations in all. Of these, 681 were male (54.57%) and 567 female (45.43%). Scatter graphs for height and weight by sex are given below.

Age in months was calculated by taking the date of birth—expressed as the number of days elapsed since 1st January 1960—away from the date of interview—similarly expressed—and dividing the result by 30.4 (average number of days per month in one year). The day of birth was posited as the 15th of the month for all cases for which we didn't have a day of birth. By this process we had 1347 observations with complete date of birth.

Figure B.1 Height in cm (male)

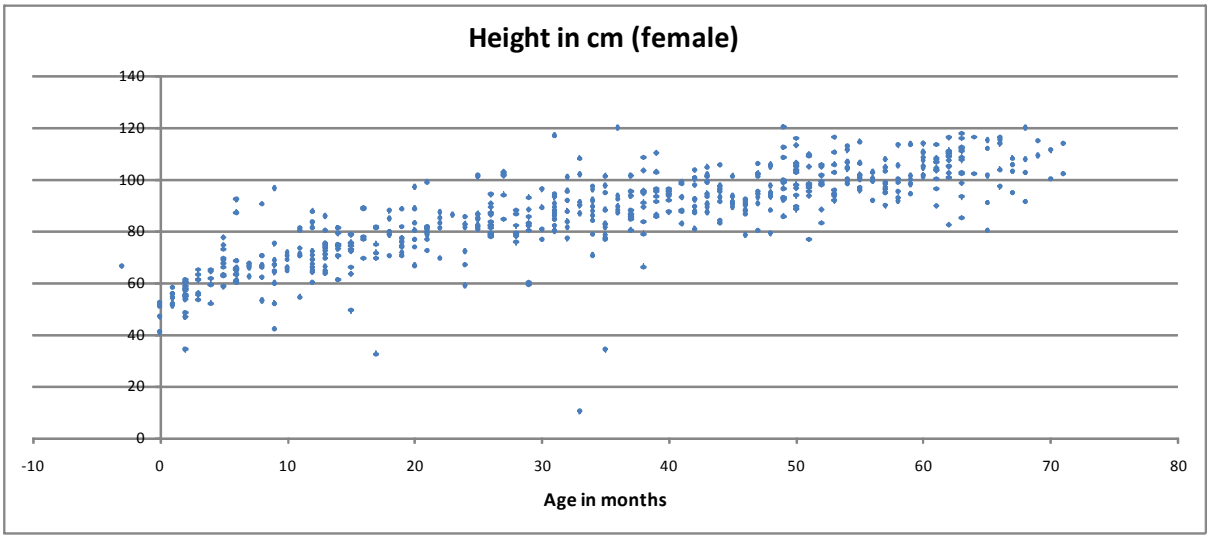


Source: OPM OVC-CT evaluation baseline data (2007).

Figure B.2 Weight in kg (male)

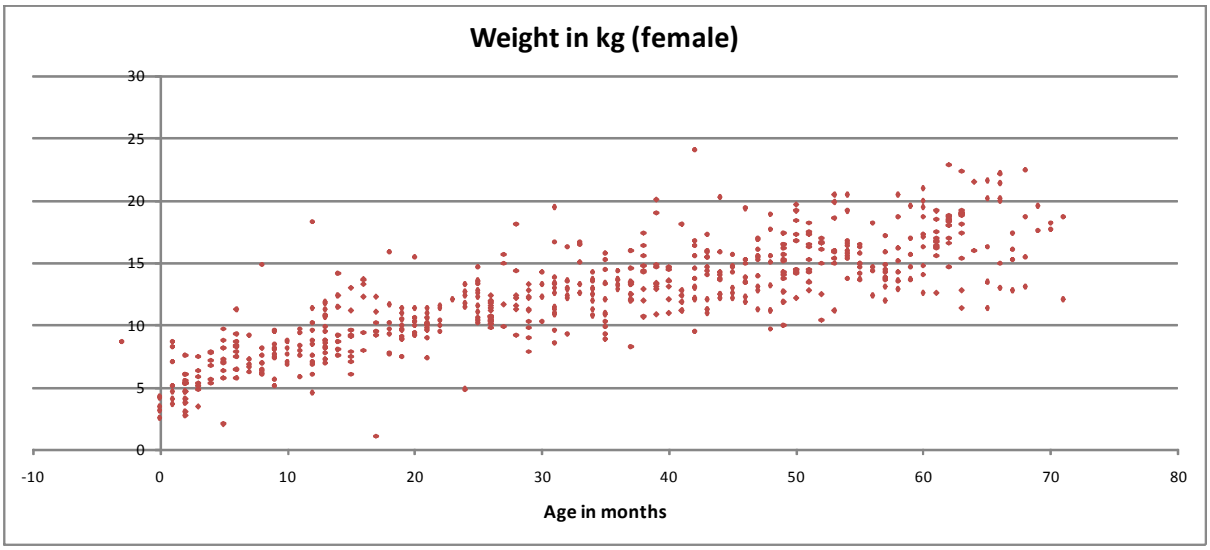
Source: OPM OVC-CT evaluation baseline data (2007).

Figure B.3 Height in cm (female)



Source: OPM OVC-CT evaluation baseline data (2007).

Figure B.4 Weight in kg (female)



Source: OPM OVC-CT evaluation baseline data (2007).

B.2 Method

Using Epi Info NutStat software, the above data produced Z-scores for each observation according to the 1978 CDC/WHO growth reference curves, a normalized version of the 1977 National Center for Health Statistics (NCHS) growth reference curves, developed using data from the Fels Research Institute and US Health Examination Surveys[33]. These normalized growth curves are recommended by the World Health Organization (WHO) for international use[34].

B.3 Calculating anthropometric indicators

Height and weight for age indices can be calculated for individuals from birth up to 18 years of age. Weight for height indices are calculated for males to 138 months (11.5 years) of age and less than 145 cm (57 inches) and for females to 120 months (10 years) of age and less than 137 cm (53 inches). WH cannot be calculated for children less than 49 cm (19.3 inches). For children less than 2 years of age, recumbent (i.e., lying down) length measurements are assumed; for children 2 years of age and older, height refers to standing height.

No anthropometric indices are calculated if sex is unknown or miscoded because there are separate growth reference curves for males and females. If weight is unknown, only HA is calculated; if height is unknown, only WA is calculated; and if age is unknown, only WH is calculated. When age is unknown, children shorter than 85 centimetres are assumed to be less than two years of age; otherwise, WH is calculated with the assumption that the child is two years of age or older.

[33] Dibley MJ, GoldsbyJB, Staehling NW, Trowbridge FL. Development of normalized curves for the international growth reference: historical and technical considerations. Am JClinNutr 1987;46:736-48.

[34] WHO working group. Use and interpretation of anthropometric indicators of nutritional status. Bull WHO 1986;64:929-41.

The preferred anthropometric indices for determining nutritional status are weight-for-height, height-for-age and BMI-for-age, as these discriminate between different physiological and biological processes[35].

Low weight-for-height or BMI-for-age is considered an indicator of acute under-nutrition (thinness or wasting) and is generally associated with failure to gain weight or a loss of weight. Low height-for-age is considered an indicator of chronic under-nutrition (shortness or stunting), which is frequently associated with poor overall economic conditions and/or repeated exposure to adverse conditions. BMI-for-age is also used to assess overweight and at risk for overweight. Weight-for-age is primarily a composite of weight-for-height and height-for-age, and fails to distinguish tall, thin children from short, well-proportioned children.

The distribution of the indices can be expressed in terms of Z-scores[36], percentiles, and percent of median. Z-scores, also referred to as standard deviation (SD) units, are frequently used. The Z-score in the reference population has a normal distribution with a mean of zero and standard deviation of one. For example, if a study population has a mean WHZ of 0, this indicates that it has the same median WH as the reference population. The Z-score cutoff point recommended by WHO, CDC, and others to classify low anthropometric levels is two SD units below the reference median for the three indices. The proportion of the population that falls below a Z-score of -2 is generally compared with the reference population in which 2.3% fall below this cutoff. The cutoff for very low anthropometric levels is usually more than three SD units below the median (denoting 'severe' cases).

Percentiles, or centiles, range from zero to 100, with the 50th percentile representing the median of the reference population. Cutoff points for low anthropometric results are generally <10th percentile, <5th percentile or <3rd percentile. In the reference population, 5% of the population falls below the 5th percentile; compare this with the proportion that falls below this cutoff point in the study population. Cutoff points for risk of overweight and overweight are >=85th to <95th percentiles and >=95th percentile of BMI-for-age. In the reference population, 10% and 5% of the population fall within or above these cutoff points, respectively.

The calculation of the percent of median does not take into account the distribution of the reference population around the median. Therefore, interpretation of the percent of median is not consistent across age and height levels or across the different anthropometric indices[37].

B.4 Results

1248 observations for which we had complete anthropometric data were fed into the EpiNut software, producing z-scores for HA, WH and WA. Unrealistic outliers were discarded for all observations: less than -6 or greater than 6 for HA and WA; less than -4 or greater than 6 for WH. Forty-seven observations or 3.77% of 1,248 were discarded for HA, 4.89% for WH (61 observations), and 0.88% for WA (11 observations).

[35] WHO working group. Use and interpretation of anthropometric indicators of nutritional status. Bull WHO 1986;64:929-41. GorsteinJ, SullivanK, Yip R, de OnisM, Trowbridge F, Fajans P, ClugstonG. Issues in the assessment of nutrition status using anthropometry. Bull WHO 1994;72(2):273-83.

[36] DibleyMJ, StaehlingN, Nieburg P, Trowbridge FL. Interpretation of Z-score anthropometric indicators derived from the international growth reference. Am JClinNutr 1987;46:749-62.

[37] WHO working group. Use and interpretation of anthropometric indicators of nutritional status. Bull WHO 1986;64:929-41.

The results revealed that 31.89% of all sample children are either stunted or severely stunted (14.07% severe cases); 6.57% of all sample children are either wasted or severely wasted (1.94% severe cases); and 19.73% of all sample children are either underweight or severely underweight (6.87% severe cases)[38]. 2% of all sample children are both stunted *and* wasted. The (unweighted) proportion of children stunted, wasted and underweight by district is given in Table B.1 below.

Table B.1 Proportion of children stunted, wasted and underweight by district – unweighted (%)

District	Stunted	Underweight	Wasted
Garissa	34	30	18
Homabay	28	15	4
Kisumu	25	19	10
Kwale	48	34	7
Migori	30	15	5
Nairobi	23	15	6
Suba	36	17	6
Total	**32**	**20**	**7**

Source: OPM OVC-CT evaluation baseline data (2007).

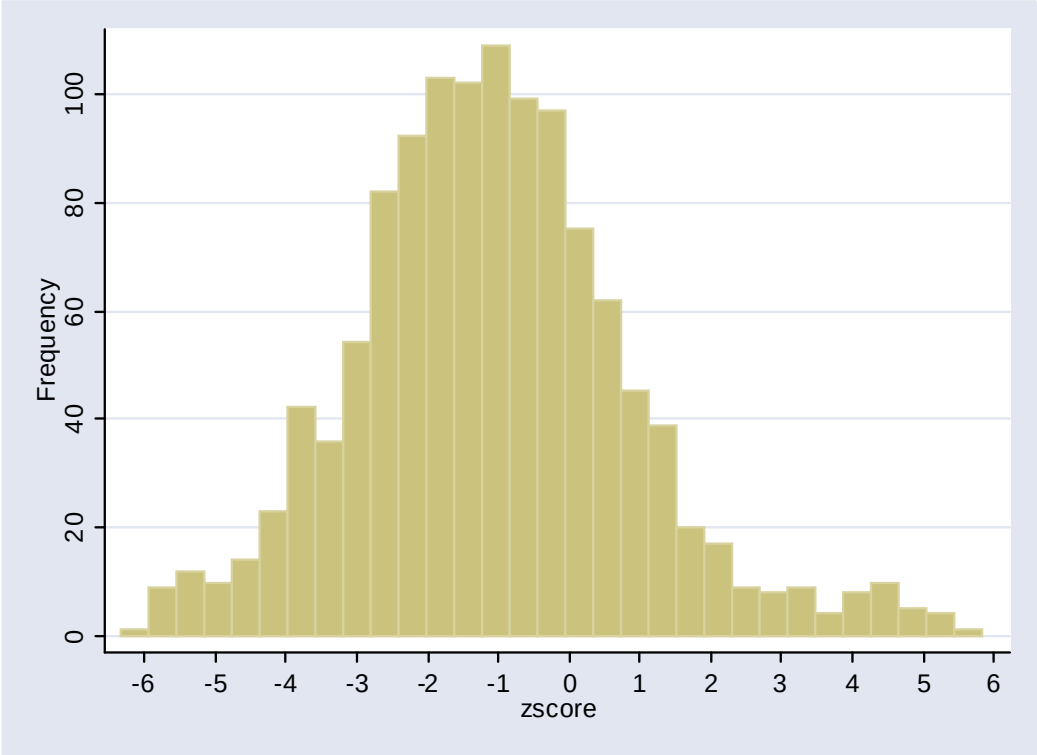
It should be acknowledged that because the reference population data derives from the US, and the study population from the poorer sections of Kenya, one would expect to find the mean of the study population to be somewhat lower than the mean of the reference population. This is indeed the case, with the mean values closer to -1 than 0 for all cases but wasting: -1.08, -0.09, and -0.80 for HA, WH and WA respectively[39]. Historgrams for HA, WH, and WA are given below.

[38] The 2003 Kenya Demographic and Health Survey found 30.3% stunting for children under five (11.0% severe); 5.6% wasting (1.2% severe); and 19.9% underweight (4.1% severe). (Central Bureau of Statistics (CBS) [Kenya], Ministry of Health (MOH) [Kenya], and ORC Macro. 2004. Kenya Demographic and Health Survey 2003. Calverton, Maryland: CBS, MOH, and ORC Macro.)

The 2000 Unicef MICS country-wide report for Kenya found 35.3% stunting for children under five (14.7% severe); 6.0% wasting (1.4% severe); and 21.2% underweight (5.7% severe). http://www.childinfo.org/MICS2/newreports/kenya/kenyaTables.PDF

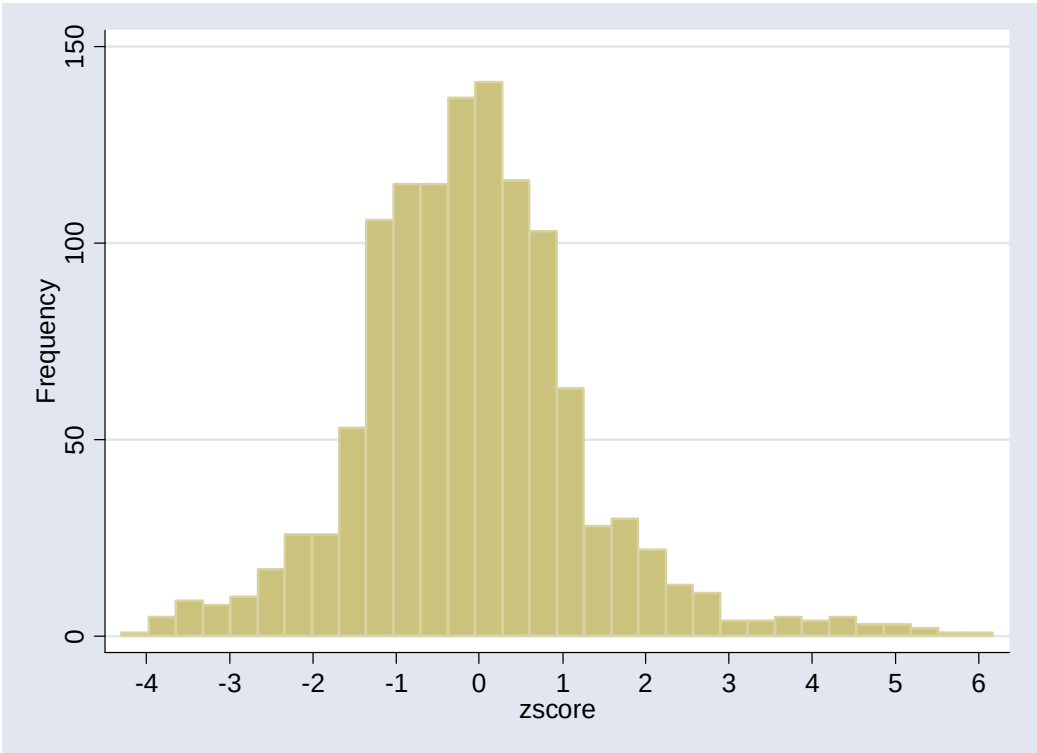
[39] The mean z-scores found by the Kenya DHS 2003 for HA, WH and WA were: -1.2, -0.2 and -0.9 respectively.

Figure B.5 Height for age z-scores



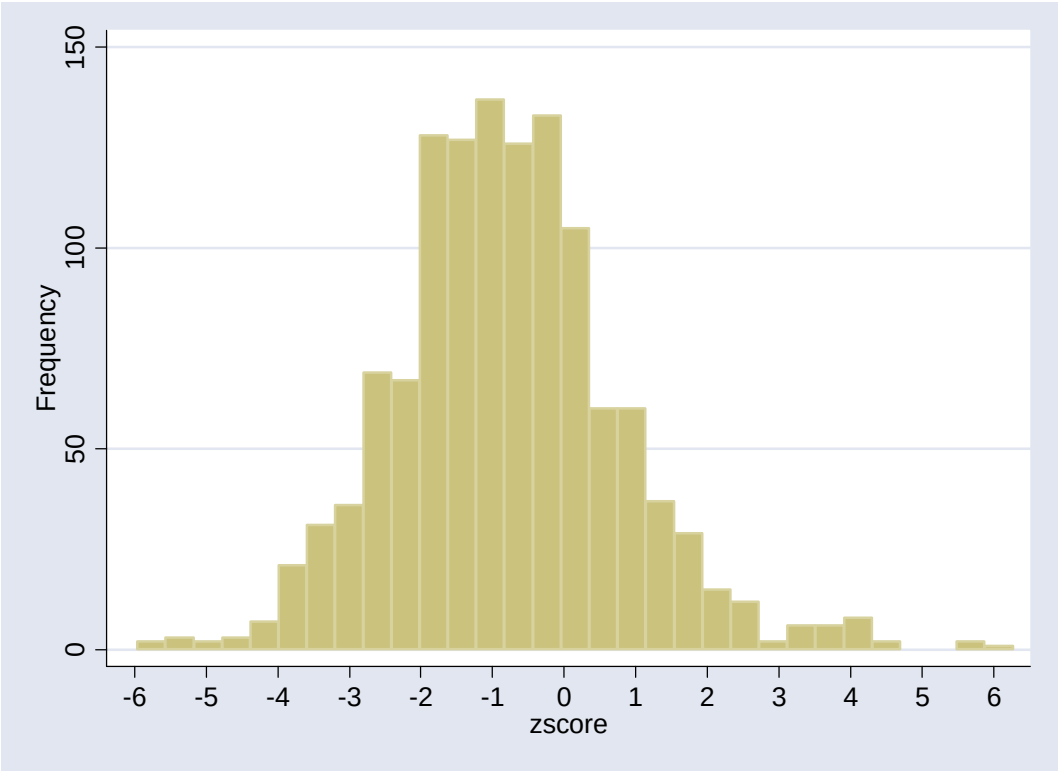
Source: OPM OVC-CT evaluation baseline data (2007). Notes: severe stunting is reflected in z-scores<=-3.

Figure B.6 Weight for height z-scores



Source: OPM OVC-CT evaluation baseline data (2007).Notes: severe wasting is reflected in z-scores<=-3.

Figure B.7 Weight for age z-scores



Source: OPM OVC-CT evaluation baseline data (2007). Notes: severely underweight is reflected in z-scores<=-3.

Table B.2 Mean z-scores for HAZ, WAZ, WHZ by district

District	Stunting	Wasting	Underweight
Garissa	-0.74	-0.83	-1.40
Homabay	-1.07	0.21	-0.58
Kisumu	-0.72	-0.13	-0.75
Kwale	-1.89	-0.36	-1.46
Migori	-0.98	0.13	-0.49
Nairobi	-0.82	-0.14	-0.68
Suba	-0.95	-0.09	-0.78

Source: OPM OVC-CT evaluation baseline data (2007).

Annex C Assessing socioeconomic status

C.1 Calculating monthly household consumption expenditure

In order to assess the socio-economic status of OVC households, consumption expenditure information was recorded in the survey questionnaire. The quantity, value and main source(s) of food consumed during the seven days prior to the interview was recorded for an exhaustive list of 19 categories of food items. The value of non-food consumption expenditure was recorded for 41 separate items covering fuel and energy, clothing and footwear, household and personal care, household furnishings and maintenance, transportation, communication, recreation, house rent, and other. Depending on the item the value consumed in the past one month, three months or 12 months was recorded as applicable. Some lumpy and infrequent expenditure items were excluded, while consumption flows from durable items could not be estimated.

For each household an aggregate consumption measure was calculated. All expenditure was expressed in monthly and *per adult equivalent* terms.[40]

[40] As was used for the KIHBS 2005/06 basic report, the Anzagi-Bernard adult equivalence scale was employed: children aged 0-4 are weighted as 0.24; children aged 5-14 are weighted 0.65; and all household members aged 15 years and over are assigned a value of unity.

Table C.1 Mean household consumption expenditure per adult equivalent and budget shares

	Urban		Rural		All OVC households in evaluation locations	
	Consumption expenditure (Kshs)	Budget share (%)	Consumption expenditure (Kshs)	Budget share (%)	Consumption expenditure (Kshs)	Budget share (%)
Cereals	302	11.2	279	18.6	285	15.5
Bread	81	3.0	23	1.5	39	2.1
Tubers	73	2.7	46	3.0	53	2.9
Poultry	22	0.8	31	2.0	28	1.5
Meat	82	3.0	33	2.2	46	2.5
Fish	73	2.7	68	4.5	69	3.8
Milk and eggs	108	4.0	55	3.7	70	3.8
Oil and fats	69	2.6	67	4.5	68	3.7
Fruits	42	1.5	23	1.5	28	1.5
Vegetables	111	4.1	129	8.6	124	6.7
Pulses	68	2.5	49	3.2	54	2.9
Sugar	103	3.8	99	6.6	101	5.5
Non-alcoholic beverages	20	0.8	15	1.0	17	0.9
Alcohol	2	0.1	3	0.2	3	0.2
Restaurants	22	0.8	4	0.3	9	0.5
Spices and condiments	10	0.4	10	0.7	10	0.5
Tobacco	3	0.1	6	0.4	5	0.3
Water	42	1.5	32	2.1	34	1.9
Fuels	222	8.2	179	11.9	191	10.4
Clothing & footwear	140	5.2	59	3.9	82	4.4
Household & personal care	118	4.4	59	3.9	75	4.1
Furnishings & maintenance	20	0.7	9	0.6	12	0.7
Transportation	203	7.5	75	5.0	111	6.0
Communication	66	2.4	17	1.1	30	1.7
Recreation	25	0.9	6	0.4	11	0.6
House rent	357	13.2	3	0.2	102	5.5
Education	210	7.8	71	4.7	110	6.0
Health	98	3.6	50	3.3	63	3.5
TKK	7	0.2	3	0.2	4	0.2
Total	**2,697**		**1,501**		**1,835**	

Source: OPM OVC-CT evaluation baseline data (2007). Notes: Consumption expenditure presented here is in nominal terms, i.e. has not been adjusted to reflect price differences across districts. Rent expenditure is included in these totals.

C.2 Comparative socio-economic status of OVC households

It is expected that poverty levels amongst OVC households will differ across the seven districts in which the evaluation is taking place. The table below shows clearly that this is the case. Furthermore, the OVC households in the rural evaluation locations are more likely to be poor than

those in urban locations. As expected the OVC households in the Nairobi sub-locations are relatively better off than all others, even after adjusting for regional price differences.

Real monthly consumption expenditure was calculated using a Paasche price index to adjust for regional price variations and excluding rent expenditures (see next sub-section for the justification of exclusion of rent expenditures). The Paasche index was constructed using data from both the household and community questionnaires relating to the price of 20 different items (mainly food items, but also some non-food items) and relative budget shares. The list of included prices is the following:

1. Maize flour (sifted) - 1kg
2. Rice - 1kg
3. Other grains - 1kg
4. Bread - No
5. Potato (Irish) - 1kg
6. Sweet potatoes and other tubers - No
7. Beans - 1kg
8. Other pulses - 1kg
9. Eggs - No
10. Fresh fish - No
11. Beef - 1kg
12. Chicken - No
13. Milk - 1 litre
14. Banana - No
15. Cooking fat - 1kg
16. Sugar - 1kg
17. Salt - 1kg
18. Tea leaves - 100gr
19. Soap - 1 bar
20. Paraffin - 1 litre

The budget shares used to calculate the weights applied the prices of the 20 items listed above to the following consumption groups:

1. Maize (grain+flour)
2. Rice
3. Other grains
4. Bread
5. Potato (Irish)
6. Sweet potatoes and other tubers
7. Beans

8. Other pulses
9. Eggs
10. Fish (fresh+dried)
11. Beef
12. Chicken and other meat
13. Milk
14. Banana and other fruits
15. Cooking fat and oils
16. Sugar
17. Spices
18. Tea
19. Soap and other toiletries
20. Paraffin and charcoal

The overall average coverage of the consumption expenditure on these groups is about 60%.

Table C.2 Consumption and asset indicators by district

	Nairobi	Homa Bay	Migori	Kisumu	Suba	Kwale	Garissa	Urban	Rural	All OVC households in evaluation locations
Distribution of study population (weighted):										
Proportion of households (%)	17	15	21	19	11	9	7	26	74	100
Consumption expenditure:										
Mean monthly real consumption expenditure per adult equivalent (Kshs)	2,707	1,420	1,757	1,810	1,769	1,336	1,438	2,601	1,540	1,821
Proportion of households living on less than $1 a day (%)	8	40	31	20	25	53	53	13	35	29
Proportion of households living on less than $2 a day (%)	51	91	81	73	79	86	85	55	84	76
Distribution of OVC households by quintile (%):										
Quintile 1 (less well off)	4	26	21	14	17	45	32	9	24	20
Quintile 2	11	25	23	18	20	19	26	11	23	20
Quintile 3	14	23	22	25	19	13	23	16	21	20
Quintile 4	26	18	18	21	30	14	5	22	19	20
Quintile 5 (better off)	46	7	16	22	14	9	14	41	12	20
Household characteristics:										
Median household size	5	5	5	5	5	6	6	5	5	5
Median number of rooms occupied by household	1	2	2	3	2	3	1	2	2	2
Proportion of OVC households which contains no adults that have reached Standard 8 (%)	9	48	24	35	37	45	83	15	42	34
Household dwelling – proportion of OVC households with (%)										
Poor quality walls (mud/cow dung/grass/sticks)	22	95	73	71	83	80	100	34	83	70
Poor quality roof (mud/cow dung/grass/sticks)	0	20	4	12	5	72	88	13	22	20
Poor quality floor (mud/cow dung)	12	86	69	69	77	79	2	23	72	59
Main source of cooking fuel is firewood or residue/animal waste/grass	9	99	85	87	90	98	96	29	94	77
Main source of lighting fuel is electricity	76	1	3	3	2	0	0	51	2	15
No toilet (toilet is of type none/pan/bucket)	1	75	36	23	65	79	90	13	56	44
Main source of drinking water during the dry season is river, lake or pond	2	50	55	67	90	21	19	10	58	45
Household assets – proportion of OVC households that own (%):										
Real estate (incl. dwelling)	4	100	91	96	96	85	58	27	94	76
Farming land	27	100	92	100	96	93	11	38	93	78
Livestock	14	79	80	83	83	74	100	31	84	70
Radio	65	52	46	61	51	30	10	57	47	50
Telephone / mobile	73	9	24	18	18	15	6	63	13	26
Bucket / basin	99	89	93	95	95	88	34	97	87	90

	Nairobi	Homa Bay	Migori	Kisumu	Suba	Kwale	Garissa	Urban	Rural	All OVC households in evaluation locations
Table	97	99	95	97	99	47	14	90	86	87
Chair or wooden stool	99	99	96	100	100	73	37	96	90	92
Bed sheets	99	74	92	98	94	67	47	98	82	86
Blankets	100	97	98	98	98	30	16	89	85	86
Mosquito net	64	77	77	66	64	60	83	70	70	70
N = # OVC households (unweighted)	315	335	620	533	426	220	220	468	2,201	2,669

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) In order to enable valid inter-district comparison, rent has been excluded from the calculation of mean monthly real consumption expenditure. Real consumption expenditure has been estimated by adjusting nominal expenditure for price differences across districts using a Paasche price index constructed using OPM OVC-CT baseline data from the household and community surveys. (2) Quintiles were defined over all evaluation locations using estimates of real consumption expenditure per adult equivalent such that each quintile contained 20% of the OVC households. Due to targeting errors a small number of non-OVC households were included in the study population. These households were excluded in the estimation of the quintile cut-offs. (3) Note that the figures in this table are for all OVC households across both programme and control areas and so differ from the figures in Table 3.3.

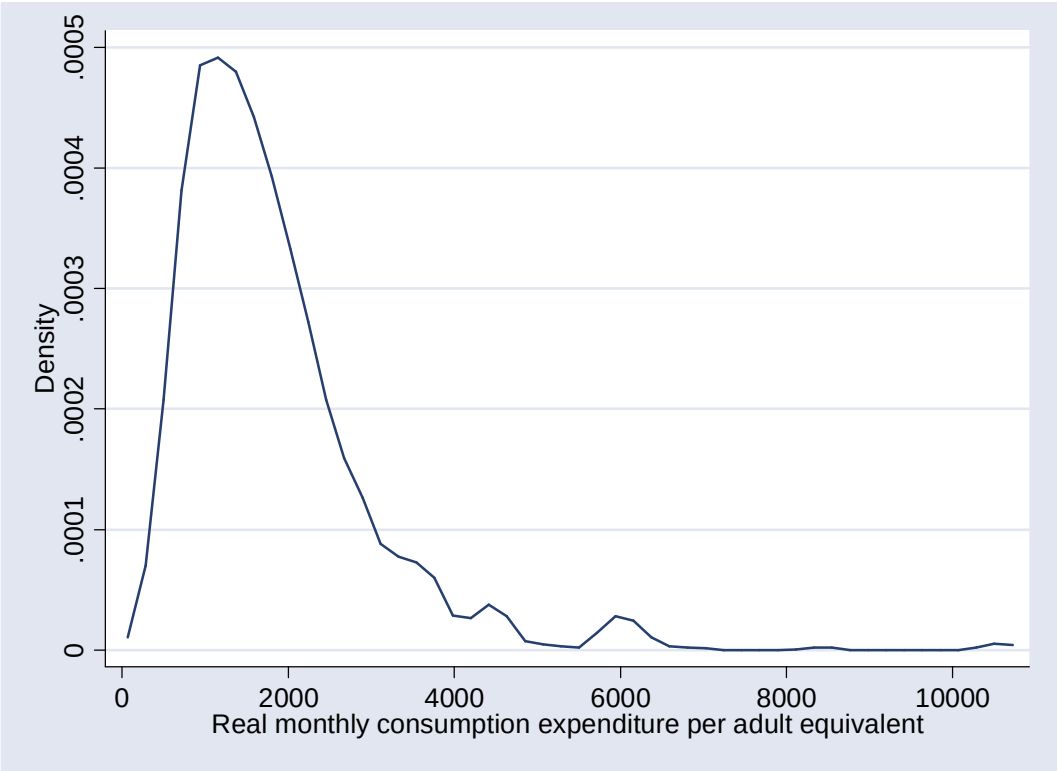
Table C.3 Asset indicators by consumption quintile

	Quintile 1 (less well off)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (better off)	All OVC households in evaluation locations
Distribution of study population (weighted):						
Proportion of households (%)	20	20	20	20	20	100
Consumption expenditure:						
Mean monthly real consumption expenditure per adult equivalent (Kshs)	715	1,145	1,562	2,083	3,613	1,821
Proportion of households living on less than $1 a day (%)	100	44	0	0	0	29
Proportion of households living on less than $2 a day (%)	100	100	100	80	0	76
Household characteristics:						
Median household size	6	5	5	5	5	5
Median number of rooms occupied by household	2	2	2	2	2	2
Proportion of OVC households which contains no adults that have reached Standard 8 (%)	39	42	39	33	19	34
Household dwelling – proportion of OVC households with (%)						
Poor quality walls (mud/cow dung/grass/sticks)	87	80	76	66	44	70
Poor quality roof (mud/cow dung/grass/sticks)	31	27	15	15	10	20
Poor quality floor (mud/cow dung)	74	69	65	53	34	59
Main source of cooking fuel is firewood or residue/animal waste/grass	94	89	83	71	46	77
Main source of lighting fuel is electricity	2	4	9	20	40	15
No toilet (toilet is of type none/pan/bucket)	57	50	53	37	25	44
Main source of drinking water during the dry season is river, lake or pond	48	51	52	51	24	45
Household assets – proportion of OVC households that own (%):						
Real estate (incl. dwelling)	91	85	81	72	49	76
Farming land	88	86	81	79	58	78
Livestock	77	81	77	66	48	70
Radio	43	41	41	57	66	50
Telephone / mobile	7	12	23	33	56	26
Bucket / basin	80	84	92	97	95	90
Table	75	83	90	97	89	87
Chair or wooden stool	83	90	95	97	95	92
Bed sheets	75	82	86	92	97	86
Blankets	74	81	86	95	94	86
Mosquito net	65	67	66	73	79	70
N = # OVC households (unweighted)	632	638	571	458	370	2,669

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) In order to enable valid inter-district comparison, rent has been excluded from the calculation of mean monthly real consumption expenditure. Real consumption expenditure has been estimated by adjusting nominal expenditure for price differences across districts using a Paasche price index constructed using OPM OVC-CT baseline data from the household and community surveys. (2) Quintiles were defined over all evaluation locations using estimates of real consumption expenditure per adult equivalent such that each quintile contained 20% of the OVC households. Due to targeting errors a small number of non-OVC households were included in the study population. These households were excluded in the estimation of the quintile cut-offs. (3) An income of $1 a

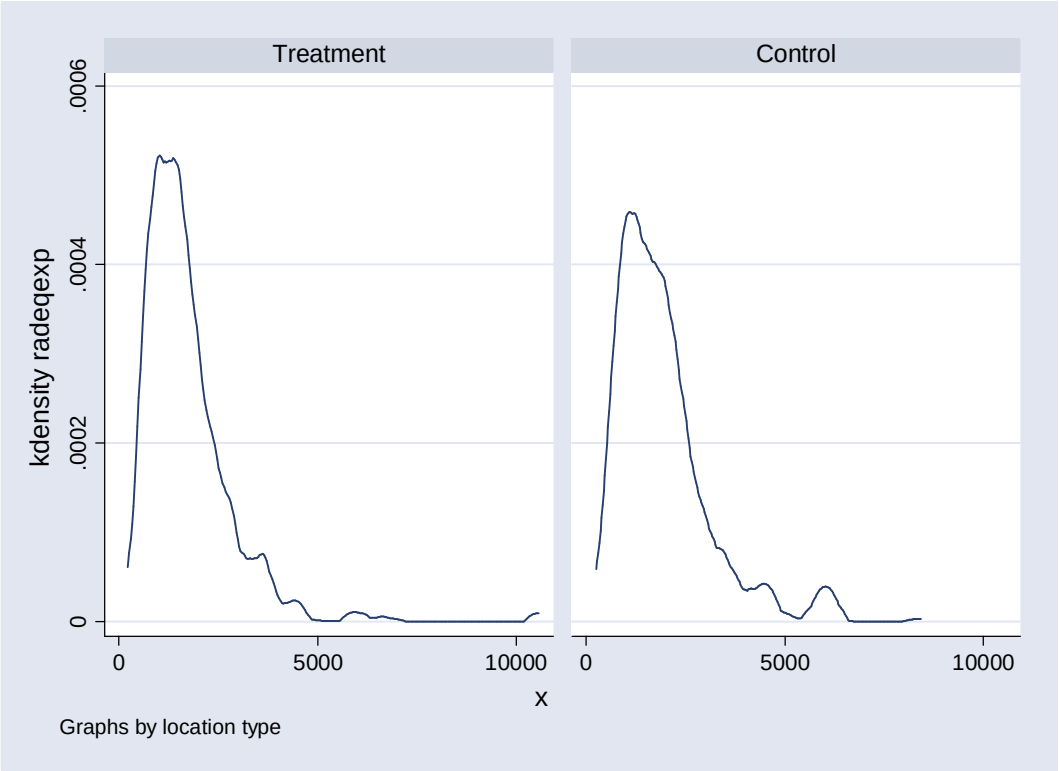
day translates to a real consumption expenditure per adult equivalent of Ksh 1133.5 per month using the World Bank's most recent PPP exchange rate (2005) adjusted for inflation since 2005.

Figure C.1 Distribution of real consumption expenditure per adult equivalent – full sample (all evaluation locations)



Source: OPM OVC-CT evaluation baseline data (2007). Notes: Kernel density estimated using the Epanechnikov kernel with an 'optimal' halfwidth.

Figure C.2 Distribution of real consumption expenditure per adult equivalent – treatment versus control locations



Source: OPM OVC-CT evaluation baseline data (2007). Notes: Kernel density estimated using the Epanechnikov kernel with an 'optimal' halfwidth.

After some work on estimating imputed rents, it was decided to exclude rent – actual and imputed - from the consumption aggregates. This was because rural estimates were not considered reliable, given the very limited market in those areas, and comparisons are more reliable if they are excluded from all areas.

C.3 Quintile and tercile cut-offs

The (price-adjusted) quintile and (nominal) location tercile cutoffs outlined in the main text are presented below.

Table C.4 Real monthly consumption expenditure per adult equivalent quintile cut-offs – all OVC households in evaluation locations (Ksh)

p20	p40	p60	p80
936	1340	1792	2425

Source: OPM OVC-CT evaluation baseline data (2007). Notes: (1) The quintile cut-offs are based on consumption expenditure expressed in monthly adult equivalent terms and adjusted for regional price differences. (2) The quintiles were calculated over all evaluation locations such that each quintile contains 20% of the OVC households in the study population.

Table C.5 Nominal monthly consumption expenditure per adult equivalent tercile cut-offs – by treatment location (Ksh)

District	Location	p33	p66	N
NAIROBI	Dandora B	2454	3308	119
	Kirigu	1686	2671	106
HOMABAY	E Kanyada	960	1570	100
	West Kabuoch	951	1635	109
MIGORI	L. Kanyamkago	1076	1574	181
	N. Sakwa	1294	1819	221
KISUMU	West Kisumu	1825	2826	167
	Otwenya	1283	1601	151
SUBA	Gwassi South	1086	1697	135
	Rusinga East	1533	2137	136
KWALE	Mwatate	635	1081	68
	Msambweni	1011	1873	75
GARISSA	Saka	351	1456	69
	Goreale	880	1407	99

Source: OPM OVC-CT evaluation baseline data (2007). Notes: Location consumption terciles were defined by location using estimates of (nominal) consumption expenditure per adult equivalent such that each tercile contained a third of OVC households in each location.

C.4 Comparison with the international norms

Estimates are presented of the proportion of households whose consumption falls below $1 and $2 per day. The cut-off for these estimates was calculated using the most recent (2005) PPP conversion factor and adjusting for inflation. The monthly 1USD poverty line is 1133.5 KSh. It should be noted that these estimates cannot be reliably compared with similar estimates for other

populations from other sources as they will be sensitive to data collection methods and the composition of consumption aggregate. Amongst other things, the consumption aggregate used in this analysis excludes rent and is expressed per adult equivalent, whereas other analyses often use per capita measures. In addition, PPP exchange rates are calculated for the national consumption pattern, but the study deals with a subgroup that might have a distinctive consumption pattern and household composition. This might also affect the comparability of these figures. They provide, only, broadly indicative information on the levels of poverty in the population studied.

C.5 Comparability with the KIHBS 2005/06

In order to understand whether the OVC households covered by the evaluation are poor or wealthy on a national scale, it would be necessary to compare their position relative to the national distribution of basic background variables (such as parental education and housing features) and the level of household consumption (which is used to measure income poverty). The most recent nationally representative survey is the 2005/06 KIHBS. However, it is difficult to be confident that such comparisons would be reliable.

Every effort was made to maximise the comparability of the data collected in the OVC-CT evaluation household survey with those of previous national household budget surveys. The consumption module was designed based on data of the 1997 Welfare Monitoring Survey, but also considering the KIHBS questionnaire. The two questionnaires have clearly different objectives, so efforts were made to make the two comparable within what was possible given the specific requirements of the OVC-CT evaluation survey. However, comparability is limited by the fact that it was not feasible to have a diary component in the OVC-CT questionnaire, and also the consumption module inevitably had to be much shorter than that in the KIHBS questionnaire. Furthermore, for some of the questions on housing and household characteristics the priority was to match the questions asked by the programme to determine eligibility rather than the questions in the KIHBS (although they often only varied slightly).

Notwithstanding the above efforts it is difficult to ensure that actual data are comparable. Differences could be still due to: 1) questionnaire design; 2) field procedures and specific definitions adopted by the two surveys; 3) the specific composition of the consumption aggregate (including the exclusion of rent in this analysis, which will reduce the value of the aggregate). Furthermore, the 2005/06 KIHBS report suggests that price adjustments and consumption calculations were done differently in urban and rural areas, as if urban and rural areas of Kenya were essentially two different countries. Therefore, the methodology adopted by the Kenyan Central Bureau of Statistics is different from that used for the OVC-CT evaluation. In addition, since the OVC-CT evaluation survey is not a national survey it is not possible to establish how prices in the evaluation locations differ from average prices in the country (or rural/urban areas). Access to the KIHBS 2006-06 microdata might allow a more informed comparison of the two datasets, but the KIHBS 2005/06 is not currently available.

With these caveats in mind, Table C.6 presents a crude comparison of poverty estimates based on KHBS and the evaluation sample, for information. The poverty lines have been adjusted for inflation using the official CPI from the Kenyan Central Bureau of Statistics (all urban areas). This assumes that although there might be different levels of prices in urban and rural areas their increase over time is the same (which may not be the case). The table suggests that about one third of OVC households and around 43% of recipients fall below the lower poverty line. This comparison table is not presented in the main text due to the methodological concerns outlined above.

Table C.6 Proportion of households below the national poverty line

	OVC-CT programme evaluation baseline survey (OVC households)[1]				KIHBS 2005/06 (all households)		
	Treatment locations	Control locations	Whole sample	Recipient s only	Urban	Rural	Total
Overall poverty line	74	68	71	78	27	42	38
Hardcore poverty line[2]	36	36	36	43	6	18	15

Source: OPM OVC-CT evaluation baseline data and KIBHS report. Notes: (1) KIHBS 05/06 poverty lines have been adjusted for inter-survey inflation to get them at the price levels of the OVC-CT evaluation baseline survey (multiplied by a factor of 1.163). (2) A household is defined as hardcore poor if its overall monthly consumption expenditure per adult equivalent is below the food poverty line. (3) In 2005/06 prices the poverty lines were as follows: food poverty line was 988 Kshs in rural areas, and Kshs 1,474 urban; the overall poverty line was Kshs 1,562 in rural areas and Kshs 2,913 in urban. These poverty lines are expressed in monthly adult equivalent terms.

Annex D Sampling methodology

D.1 Sampling overview

The following population groups can be identified:

- A – households with OVCs in the programme areas, selected for inclusion in the programme. These are divided into two groups – those in areas with conditions vs those where there are no conditions.
- B – households with OVCs in control areas that meet programme criteria and should, in theory, have been selected by virtue of meeting the definitions of high need as defined by the programme, if the programme operated there.
- C – households with OVCs in programme areas, but not selected for inclusion in the programme.
- D – households with OVCs in control areas that do not meet programme criteria and would not (in theory) have been selected if the programme operated there.
- E, F – households without OVCs in programme and control areas respectively.

The comparison of trends in the two groups A and B over time provides the basis for the analysis of programme impact. In addition, the evaluation will estimate the impact of the imposition of conditions compared with no conditions through a comparison of trends in the two sub-groups of A – i.e. it will compare impact measures in areas where conditions are imposed with those where they are not.

The sample included units from groups C and D to provide information on welfare measures in the potential recipient population as a whole, in order to assess the extent to which the programme has selected the poorest OVC households.

Ideally the sample would have included small samples of groups E and F to provide contextual information on welfare in the entire population in these areas, facilitating reliable comparison of the socio-economic status of the study population in relation to the Kenyan population as a whole (i.e. by comparing the evaluation survey with recent household budget surveys), and allow an assessment of the extent to which targeting OVC households meets wider objectives of targeting the poorest in the population as a whole. However, due to budget constraints and after lengthy discussion it was decided that Group E and F households would not be sampled, despite the fact that this has implications for the scope of the targeting analysis.

The intended evaluation survey sample sizes are presented in Table D.1 below (with the letters in the cells matching the groups listed above). They were based on the expected sampling error for point estimates, differences and the difference-in-difference estimates for key welfare indicators.

Table D.1 Intended sample size by population group

Population group	Selected to be a recipient/control household	Area		Total
		Programme	Control	
OVC household	Selected	1,700 [A]	873 [B]	2,573
OVC household	Not selected	292 [C]	296 [D]	598
Total		**1,992**	**1,169**	**3,161**

Notes: Originally the intended total sample size agreed with the programme was 3,200, broken down as follows: A – 1,700; B – 900; C – 300; D – 300. However, after the Garissa recipient selection had been undertaken by the programme it became apparent that the intended Garissa sample was too large. The Garissa sample was therefore reduced by 85, from 389 to 304. In addition, due to a modification to the distribution of recipients across evaluation locations, additional recipients were sampled and interviewed in Migori.

Inevitably not all sampled households could be identified and/or interviewed. Some households could not be found, whilst others refused to be interviewed. Many of these households were replaced from a randomly selected replacement list in each location (recipients) or EA (non-recipients). However, having too many replacements risks biasing the sample, therefore the size of the replacement list was limited. For recipient households (Group A) a 10% replacement sample was drawn by location, and for non-recipient households (Groups B, C and D) a 25% replacement sample was drawn.[41] Compounded by the fact that some replacement households had to be replaced, the final sample sizes that were therefore slightly lower than intended. The actual sample sizes by population group and district are presented in Table D.2.

Table D.2 Actual sample size by population group and district

District	Recipients	Non-recipients			Total
	Group A	Group B	Group C	Group D	
Nairobi	206	76	32	18	332
Kwale	126	69	22	19	236
Garissa	159	45	17	17	238
Homa Bay	180	95	32	35	342
Kisumu	280	171	44	53	548
Migori	351	177	54	49	631
Suba	238	121	37	36	432
Total	**1,540**	**754**	**238**	**227**	**2,759**

Note that in fact 2,834 households were interviewed in total (some 90% of the intended numbers), but 66 sampled recipients were subsequently removed from the dataset after they were found to not to be recipient households after cross-checking against the programme's final list of recipient households. In other words, the sample frame from which the recipient sample was drawn was not the final recipient list.

Due to targeting errors, as well as errors in the identification of OVC households in the EA household listings data (see Sub-section D.3 below), a small number of non-OVC households

[41] It was anticipated that unsuccessful contacts would be more likely for non-recipient households. This was primarily because of the length of time elapsed between the household listing exercise and the baseline fieldwork, meaning that households may have physically moved or their characteristics may have changed rendering them ineligible to be surveyed.

were included in the evaluation sample.[42] These households were excluded when generating most of the estimates presented in this report (i.e. estimates relate to OVC households).

D.2 Location selection

D.2.1 Sampling procedure

The OVC-CT evaluation covers Nyanza (Kisumu, Suba, Homa Bay and Migori), Nairobi, Kwale and Garissa. These were selected by the programme. The districts where transfers are currently being financed only by GOK were excluded from the evaluation as they are operating an *ad hoc* system that is not expected to be scaled up to a national level; and, furthermore, the selection of locations and recipients in the GOK districts had already been completed by the time the evaluation design began.

The programme and control communities were allocated through the random selection of locations within the specified districts. It would not have been practical or socially acceptable to allocate randomly to households; and the number of districts in the pilot was too small to randomise at the district level.

Before the evaluation team began work, a number of locations had already been selected (non-randomly) in which the programme would operate. However, given the number of new recipients that could be financed, the programme agreed to select some additional locations, plus controls, randomly. Therefore, in each of the seven districts covered by the evaluation, two additional locations were randomly selected for programme intervention and two as controls.

The selection of locations was based on the random selection of those that remained after ineligible locations had been excluded from each district location list. Locations were excluded if they had low poverty rates, inadequate capacity for the supply of the relevant health and education services or large existing OVC support programmes.[43]

The choice of which districts would impose conditions was also made randomly. Conditions were imposed in Homa Bay, Kisumu and Kwale; there were no conditions imposed in Garissa, Migori and Suba. In Nairobi, in one of the two treatment (sub-)locations conditions were imposed (Dandora B), but not in the other (Kirigu).[44]

The intervention and control locations will remain as intervention and control locations at least until the first follow-up: the programme will not operate in control communities. In addition MOHA will aim to discourage other partners from actively beginning any new work targeted at these communities for that period. After the follow-up survey, and subject to evaluation feedback, MOHA will then begin to phase the programme into the control areas.

[42] In total there were 88 non-OVC households included in the sample, representing 3% of the overall sample. The proportion of each sample group that are non-OVC households breaks down as follows: Group A – 2%; Group B – 5%; Group C – 3%; Group D – 5%.

[43] In Nairobi there was a problem with the two control sub-locations, Airbase and Kayole. During the listings process it became apparent that a large proportion of households in the EAs randomly selected for listing had no children. Also these areas were, upon visual inspection, less poor than the two treatment sub-locations, Dandora B and Kirigu. It was therefore decided to extend the boundaries of these sub-locations to include nearby EAs which appeared less poor. For Airbase these EAs were in Mutuini, and for Kayole they were in Komorock.

[44] In fact they were randomly allocated the other way round in Nairobi, but were implemented as described above due to confusion in administration.

In selected locations, census enumeration areas (EAs) were sampled with probability proportional to population size (PPS) and all households within selected EAs were listed in the initial "household listing" fieldwork phase which took place between March and July 2006.[45] Data from this listing process provided the sample frame for the selection of households representative of all OVC households in the locations covered by the evaluation (the non-recipient sample: Groups B, C and D).

D.3 Household sampling

D.3.1 Identification of OVC households in the EA household listings data

The non-recipient samples (Groups B, C and D) were drawn from a sample frame generated using the EA household listings data. The sample frame was created by excluding all non-OVC households from the household listings data.

An OVC household is defined as a household that contains at least one OVC. A child (aged below 18) is defined as an OVC if:

- they are an orphan (single or double); or
- they are chronically ill;[46] or
- they are looked after by a carer who is chronically ill

Unfortunately the identification of OVC households in the EA household listings data was constrained by the limited information captured in the household listings questionnaire, which was designed before the recipient selection criteria were finalised. Accordingly it was possible to identify households with at least one orphan, but not households containing chronically ill children. It was also possible to identify households containing children and at least one chronically ill adult, but not whether the chronically ill adults were caregivers.

The approach taken was to identify a household as being an OVC household if it contained:

- at least one orphan (single or double); or
- at least one child and one chronically sick adult

Whilst not perfect, this approach, combined with the use of a series of filter questions at the start of the household questionnaire (which screen out sampled households containing no children, orphans or sick adults), resulted in few non-OVCs being included in the non-recipient samples (Groups B, C and D).

[45] Note that the delay between the initial household listing process and the baseline fieldwork was not planned, and in fact resulted in significant complications in the implementation of the baseline survey. The household listing process was actually scheduled to take place one month prior to the commencement of the baseline survey. However, following completion of the household listing process, the initiation of the programme in the evaluation locations suffered from substantial delays.

[46] According to targeting manual a chronically ill person is defined as: "a person who has at least been chronically ill for the last 3 months and is both physically ill and socially incapable of working. Among the illnesses under this category are the following: tuberculosis, HIV/AIDS or cancer. Chronically ill is defined as a disease which can not be cured and is terminal."

D.3.2 Sampling of households in treatment locations

The recipient household sample (Group A) was randomly drawn (by location) from the list of eligible households identified to be invited to participate in the programme. This took place prior to enrolment such that sample recipient households did not know they were to participate in the programme at the time of the baseline survey interview. This was done to minimise the risk that the impact analysis would be contaminated by households changing their behaviour at or around the time of the baseline survey in anticipation of receiving cash transfers in the near future. However, the drawback of this approach was that not all households in the initial recipient sample were subsequently enrolled into the programme as recipients and therefore had to be dropped from the sample (see sub-section D.1 above).

The treatment location non-recipient sample (Group C) was drawn (by location) from the sample frame generated using the EA household listings data, which provided a complete list of all (potential) OVC households in the randomly selected sample of EAs in each treatment location (see previous sub-section).

Note that it was not possible to check in advance whether any households were randomly included in both the recipient (Group A) and non-recipient (Group C) samples. In fact there was a very small number (9) of households in both samples. In these cases the household was assigned to the recipient sample and a replacement non-recipient household was taken.

D.3.3 Sampling of households in control locations

Groups B and D were both drawn from the sample frame generated using the EA household listings data, which provided a complete list of all (potential) OVC households in the randomly selected sample of EAs in each control location.

See Annex E below for details of how the OVC households in the EA household listings data were categorised as controls (pseudo-recipients). This categorisation was used to stratify the non-recipient OVC household sample frame in control locations from which the Group B (control) and Group D (non-control) samples were drawn.

D.4 Sampling weights

Sampling weights have been generated and used to produce estimates that relate to OVC households living in the locations covered by the evaluation. Even though the evaluation locations were selected randomly the location sampling probabilities are not reflected in the household sampling weights and therefore the estimates do not apply to any households that located outside the evaluation locations.

As such the locations selected for the evaluation represent the ‘study population’ and no inferences are being drawn about a wider population. Their selection was random to reduce the risk of biases due to deliberate selection. Weights are computed indirectly rather than on the basis of the full selection probabilities.

For the recipients, the weights are given by:

$w(i) = Ni/ni$

where ni is the number of recipient households interviewed in the ith location and Ni is the number of (expected) recipients listed in the location.

For the non-recipients, the weights are given by:

$w(ij) = Ai/(mi*aij) * Nijk/nijk$

where Ai is the total number of households in the sample frame of EAs for location i, mi is the number of EAs sampled in location i, aij is the number of households in EA ij, nijk is the number of households of type k interviewed in EA ij and Nijk is the total number of households of type k listed in EA ij.

The communities interviewed in the sample were a function of the selected EAs and recipients and the extent to which they were geographically clustered. As such, defining weights for community level data is difficult and it is proposed that it be analysed without weights. In practice, most community information will be read down to household level and analysed with household weights.

Annex E Defining the control group

E.1 Categorisation of control households

In control locations an attempt was made to mimic the programme selection process when categorising households as eligible to be a control household.

A household was classified as eligible for the programme if it satisfied both of the following conditions:

1. household contains at least one OVC
2. household is poor

Therefore in control locations the (potential) OVC households identified in the household listings data were categorised as controls (i.e. selected as pseudo-recipients) if they were poor. A listed (potential) OVC household was defined as being poor if it was in the bottom 40% of the distribution of predicted monthly consumption expenditure per adult equivalent for all listed households containing children in that district.

Below outlines details of the methodology used to predict monthly consumption expenditure for listed households.

E.2 Predicting household consumption for listed households

E.2.1 Methodology

Household consumption was predicted using a set of household characteristics collected from all listed households which contained children. By applying scores, or coefficients, to each of these characteristics an estimate of consumption expenditure could be calculated for these households. These coefficients were estimated using data from the 1997 WMS household survey, with total household consumption expenditure being regressed upon the set (or sub-set) of household characteristics that are also available for the listed households.

E.2.2 Regression analysis

Table E.1 below summarises the estimates of the final regression model. The dependent variable is logged per adult equivalent monthly household consumption expenditure. The model was run on WMS 1997 household data for Nyanza, Nairobi, Coast and North Eastern regions. The estimated coefficients were applied to the household listings data to estimate a predicted value of monthly consumption expenditure per adult equivalent for all listed household (containing children).

Table E.1 Predicting household consumption expenditure – per adult equivalent

Explanatory variable	Description	Coef.	Standard error	t-value	P>0	95% confidence interval	
coast_NE	Dummy equal to one if household is in Coast or North Eastern region	-0.24	0.04	-5.89	0.00	-0.31	-0.16
urban	Dummy equal to one if household situated in an urban locality	0.59	0.04	13.33	0.00	0.50	0.67
nochildren	Number of children in household	-0.14	0.02	-7.50	0.00	-0.18	-0.10
nochildren2	Number of children in household squared	0.01	0.00	3.23	0.00	0.00	0.01
education_3	Dummy equal to one if household head has had 4-9 years of education	0.14	0.03	4.65	0.00	0.08	0.20
education_5	Dummy equal to one if household head has had 10-12 years of education	0.27	0.04	6.15	0.00	0.18	0.35
education_6	Dummy equal to one if household head has had more than 12 years of education	0.79	0.08	9.85	0.00	0.63	0.95
education_7	Dummy equal to one if household head's level of education is unknown	0.25	0.08	2.98	0.00	0.08	0.41
water_2	Dummy equal to one if household's main source of water is a public tap or borehole	-0.22	0.04	-5.40	0.00	-0.30	-0.14
water_3	Dummy equal to one if household's main source of water is a well or spring	-0.20	0.06	-3.61	0.00	-0.31	-0.09
water_4	Dummy equal to one if household's main source of water is a river, lake, pond or rainwater	-0.28	0.05	-6.12	0.00	-0.37	-0.19
walls_2	Dummy equal to one if walls of household dwelling is made of stone	0.43	0.04	9.83	0.00	0.35	0.52
walls_3	Dummy equal to one if walls of household dwelling is made of cement/bricks	0.21	0.05	3.85	0.00	0.10	0.31
walls_4	Dummy equal to one if walls of household dwelling is made of wood/grass/sticks/makuti	0.31	0.08	3.73	0.00	0.15	0.47
walls_6	Dummy equal to one if walls of household dwelling is made of iron/mabati	0.24	0.07	3.51	0.00	0.11	0.38
walls_7	Dummy equal to one if walls of household dwelling is made of some other material (not mud/dung)	0.55	0.26	2.16	0.03	0.05	1.06
rooms_3	Dummy equal to one if household dwelling is contains 3-5 rooms	0.45	0.04	10.63	0.00	0.37	0.53

Explanatory variable	Description	Coef.	Standard error	t-value	P>0	95% confidence interval	
rooms_6	Dummy equal to one if household dwelling is contains more than 5 rooms	0.43	0.08	5.17	0.00	0.27	0.59
radio_2	Dummy equal to one if household does not own a radio	-0.15	0.03	-5.02	0.00	-0.21	-0.09
child_radio_2	Dummy equal to one if household contains at least one child, interacted with radio_2 variable	-0.11	0.05	-2.27	0.02	-0.20	-0.01
child_coastNE	Dummy equal to one if household contains at least one child, interacted with coast_NE variable	0.31	0.06	5.09	0.00	0.19	0.43
child_education_6	Dummy equal to one if household contains at least one child, interacted with education_6 variable	0.36	0.14	2.54	0.01	0.08	0.64
child_water_2	Dummy equal to one if household contains at least one child, interacted with water_2 variable	0.24	0.05	4.41	0.00	0.13	0.34
nyanza_urban	Dummy equal to one if household in Nyanza, interacted with urban variable	-0.34	0.07	-4.82	0.00	-0.47	-0.20
nyanza_walls_3	Dummy equal to one if household in Nyanza, interacted with walls_3 variable	0.21	0.07	2.83	0.01	0.06	0.35
nyanza_rooms_3	Dummy equal to one if household in Nyanza, interacted with rooms_3 variable	-0.52	0.05	-9.75	0.00	-0.62	-0.41
nyanza_education_5	Dummy equal to one if household in Nyanza, interacted with education_5 variable	0.13	0.06	2.17	0.03	0.01	0.24
Cons	Constant	6.48	0.05	120.12	0.00	6.38	6.59
N	**3282**						
R-squared	**0.56**						

Source: WMS 1997 household data for Nyanza, Nairobi, Coast and North Eastern regions. Notes: (1) Dependent variable is logged per adult equivalent monthly household consumption expenditure (check details of the adult equivalence calculation).

E.2.3 Comparison of predicted consumption with actual WMS consumption levels

Table E.2 Listed households' (predicted) and WMS (actual) consumption expenditure levels

	WMS (1997) – actual household consumption			OVC-CT evaluation household listing (2006) – predicted household consumption
	Households with children	**Households without children**	**All households**	**All listed households (with children)[2]**
Mean p.c. income (1997 prices)	836	1,971	1,161	737
Mean a.e. income (1997 prices)	1,049	1,971	1,313	830
Mean number of children	3.2	0.0	2.4	3.2
Proportion with household head with no education (%)	0.32	0.44	0.35	0.23
Proportion with orphans (%)	-	-	-	0.30
Proportion with adults too sick to work for much of last 6 months (%)	0.07	0.06	0.06	0.09
Proportion with piped water or a private borehole (%)	0.12	0.17	0.13	0.04
Mean number of rooms	3.4	3.9	3.5	2.8
Proportion owning animals (%)[1]	0.56	0.35	0.50	0.68
Proportion owning a radio (%)	0.57	0.48	0.55	0.64
N	**2,735**	**949**	**3,684**	**14,058**

Notes: (1) Excluding chickens for WMS estimates. (2) Listings data was only recorded for households containing children.

Annex F Fieldwork and data processing procedures

F.1 Baseline survey fieldwork

The baseline survey fieldwork took place between March and July 2007. The survey took place in seven Districts: Nairobi, Kwale, Kisumu, Migori, Homa Bay, Suba and Garissa. The baseline fieldwork was undertaken by Research Solutions Ltd in direct liaison with the OPM.

This section presents the Field Report for the baseline survey, i.e. describes the survey process, highlighting the challenges that arose in the course of undertaking it, especially those that may have impacted on the results obtained. It covers the planning, preparation and training phase through to completion of the fieldwork.

F.1.1 Survey planning and preparation

F.1.1.1 Household listings

Prior to the baseline survey fieldwork, was an initial fieldwork phase, *the household listing exercise*. These listings were undertaken in randomly selected enumeration areas in both control and treatment locations. All households in these enumeration areas were located and interviewed using a short questionnaire. The household listings were used as the sample frame for the sampling of non-recipient households including the control group.

The household listing was conducted between March and July 2006. In executing both stages of fieldwork, Research Solutions Ltd. received technical assistance from the Central Bureau of Statistics (CBS - Kenya) pertaining to maps of Enumeration Areas identified for the exercise.

F.1.1.2 Questionnaire translation

After the questionnaire was finalised, it was translated into Swahili, Luo and Somali languages. The translations were initially done by Research Solutions Ltd translators. To ensure that no meaning was lost during translation, the translations were done in everyday spoken language as opposed to formally grammatical correct language. Further, each translation was back-translated into English for validation purposes and harmonised to convey the correct meanings.

F.1.1.3 Pilot testing of the survey instruments

Pilot interviews were conducted in Nairobi district. This was done to assess its reliability (i.e. consistency and clarity in terms of yielding the desired data, language composition, etc) and the exercise's planned logistics.

It was established from the pilot-testing that the actual field interviews were taking an average of 2 hours 30 minutes, although this time reduced significantly as interviewers became familiar with the instrument. On the basis of this information the overall survey timetable was determined.

F.1.2 Field personnel

F.1.2.1 Supervisory team

The supervisory team comprised of the Field Operations Manager, Field supervisors and Team leaders whose responsibilities are defined as follows.

Field Operations Manager – Research Solutions Ltd Operations Manager who has more than 25 years of fieldwork administration was in charge of the entire field force. His main role was to:

- Recruit a suitable field team
- Train the field force
- Oversee the questionnaire training exercise
- Plan for fieldwork (timelines, logistics and budgets)
- Liaise directly with the OPM team on fieldwork planning
- Supervise Field Managers
- Define overall project quality control

The Operations Manager worked hand in hand with the Project coordinator and reported to him.

Field Supervisors – Two experienced Field Supervisors were used for this project. The two supervisors have more than five years of fieldwork administration experience. Their main role was to deputize for the Operations Manager, particularly on field logistics, to supervise the survey teams and to ensure quality control. They were also in charge of financial disbursements and compilation of daily field updates from the Team Leaders.

Team Leaders – Minimum qualification for this team was a university degree or tertiary/college and with fieldwork supervisory experience of at least two years on quantitative and qualitative types of survey. At engagement, it was ensured that each team leader had an appropriate leadership profile as well. This team was drawn from the regular Research Solutions Ltd field leading team and comprised seven members. This number was engaged such that each Team leader supervised no more that five interviewers. The main role of the Team leader was to:

- Accompany interviewers and ensuring that they followed the respondent selection and interviewing procedures
- Edit every questionnaire for completeness in the field
- Execute quality control procedures including making the mandatory back-checks
- Compile field reports and daily progress updates
- Liaise with the village elders
- Organise the interviewing schedules
- Maintain fieldwork discipline

The Team leaders reported directly to the Field Supervisor.

F.1.2.2 Interviewing team

The interviewers were selected from an existing personnel data-base maintained by Research Solutions Ltd. The minimum education qualification for this team was Form Four (Secondary School). Over and above this education qualification, the interviewers were recruited on the basis of interest, physical fitness, personality, intelligence, enthusiasm and adaptability among other qualities. This team was comprised of a mixture of experienced interviewers and non-experienced ones. In consideration of the interviewing languages and survey timelines, a suitable team of 58 interviewers was selected for training. Out of the initial 58 interviewers recruited, 15 of them were expelled form the survey team on the basis of non-performance during training and questionnaire briefing.

Although 38 interviewers were eventually used to carry out the actual fieldwork, an additional five interviewers were maintained as backup in the event of dropouts during fieldwork. This team comprised of members from the required tribal backgrounds.

F.1.3 Training of the fieldteams

The main thrust of the training was to clearly define and explain roles and responsibilities and to familiarise the field team with the questionnaire and anthropometry.

An OPM consultant was present for the full duration of the fieldteam training as well as the initial stages of the fieldwork implementation. This ensured that the fieldwork training and implementation was fully in line with the intended evaluation design framework.

F.1.3.1 Training on roles and responsibilities

Training of field personnel (supervisors and interviewers) was carried out over a seven day period. This training was conducted by the Operations Manager, Supervisor and the Team Leaders, and covered the following:

- The research process – survey concepts and terminologies
- Interviewing principles and techniques
- Household identification
- Respondent selection
- Their role as interviewers – confidentiality, neutrality, questionnaire administration, probing, call-backs and substitution
- Logistics – questionnaire editing and submission to the team leader
- Procedures and safety precaution in undertaking anthropometric measurements
    - Preparation of disinfectants and alcohol rubs
    - Step by step measurement procedures
    - Quality control
- Group moderation training for the community FGDs

The training pertaining to child measurement was conducted by a qualified anthropometrics expert.

F.1.3.2 Questionnaire training

Questionnaire briefing took a further seven days. The team was briefed through the entire questionnaire, question by question. Special emphasis was laid on the following:

- introduction to the respondent
- definitions of various terminologies on the questionnaire
- skip routines
- type of questions
- question-by-question discussion and role-plays

During the briefing/ training sessions, the team was split into their various ethnic groups, allowing them to administer mock interviews in their respective languages. In addition to improving their

general interview skills, this permitted the identification of those specific terms and concepts that were likely to pose challenges in communication, especially to the less educated respondents. Lists of explanations (in these local languages) that could be used in helping such respondents understand such terms were compiled for use in the field. Training took a total of 14 days, which was as per the defined timelines.

Given the above, the field exercise was executed by a set of seven teams, composed of 38 interviewers in total.

F.1.3.3 Survey pilot-testing

A second stage of the pilot-testing was undertaken in order for the whole interviewing team to fully familiarise themselves with all the survey details. This included:

- Use the enumeration area (EA) maps
- Identify households using household list
- Administer the questionnaire
- Focus groups administration
- Anthropometrics – practical training
- Community interviews
- Interviewers' field manuals
- Supervisors' Manual

Each interviewer conducted two pilot interviews – one Community Interview and one Household Interview. They were accompanied by supervisors. Piloting was limited to Nairobi and took four days.

Bearing in mind that the questionnaire was piloted at an earlier stage, no other specific issues arose that required changes in the questionnaire. However, the exercise was useful in polishing the team's fieldwork logistics and interviewing skills. All the training requirements were re-emphasised in an additional session after the pilot exercise.

Each enumerator was required to undergo the practical exercise on the anthropometrics measurement during the briefing and pilot stages in the presence of the anthropometric trainer while the rest of the team observed. The training was carried out by inviting mothers who offered their children (aged between two months and 60 months) for the practical training.

F.1.4 Fieldwork execution

F.1.4.1 Actual fieldwork

The fieldwork took place over a period of 17 weeks from 24th March to 28th August 2007 and covered seven districts in Kenya. The fieldwork started in Nairobi before extending to the other districts. This allowed the fieldteam to test their skills under the supervision of Research Solutions Ltd head office staff and the Anthropometrics Trainer, and gave additional experience to the individual field Team Leaders. It was also intended to identify any challenges in questionnaire contents, challenges in weighing and measuring children as well as logistics (that might have not been identified at the pilot stage) that were likely to be encountered elsewhere, so that these could be discussed and resolved prior to the teams' departure to more distant parts of the country.

After finalising the fieldwork in Nairobi (24th March to 14th April), the other areas were completed as follows:

Kwale	15th April to 4th May
Kisumu	16th April to 16th May
Migori	26th April to 31st May and 12th to 16th August
Suba	18th May to 13th June
Homa Bay	31st May to 3rd of July
Garissa	18th August to 28th August

The timetable was determined largely by when the programme recipient listings became available.

F.1.4.2 Household identification

Prior to the commencement of the actual fieldwork, EAs and households were randomly sampled by OPM. For each sampled EA a census map was acquired, which facilitated the identification of the sampled households to be interviewed in that EA. Sampled recipient households were identified from the programme lists, organised by location (sub-location in Nairobi), whilst sampled non- recipient households were listed by EA. See Section F.2 below for examples of the EA maps and household lists used to identify sampled households.

Households that could not be identified or had moved out of the EA (sub-location in urban areas) were replaced from a Replacement List provided for by OPM. This was only done after consultation with the operations manager.

In general, household identification in urban areas posed more challenging than in rural areas, i.e. it was relatively easier to identify households in rural areas than in urban areas. In nomadic areas of North Eastern Province, some households that were to be located in Benane had actually moved to Modogashe which is approx 80 km apart in search of pasture. Thus locating the respondents in these areas posed a significant challenge, but this was made easier by the fact that the team relied heavily on the Local Children's Officers for guidance and by the use of full clan names.

F.1.4.3 Respondent selection

Once the correct household was identified, the head of the household whose name was already provided on the listing was interviewed. In case the head of the household/caregiver was not available any knowledgeable member of the household of the age above 18 years qualified for the interview.

Based on the above respondent selection criteria, 2606 interviews were completed at the first attempt, while the rest were made after subsequent re-visits.

F.1.4.4 Household replacement

For a variety of reasons (see next sub-section) it is always the case that some sampled households cannot be interviewed. For this reason an additional replacement sample was drawn by OPM and provided to the Field Operations Manager.

For recipient households (Group A) a 10% replacement sample was drawn by location (sub-location in Nairobi). It was anticipated that unsuccessful contacts would be more likely for non-recipient households. This was primarily because of the length of time elapsed between the listing exercise and the baseline fieldwork, meaning that households may have physically moved or their characteristics may have changed rendering them ineligible to be surveyed. Therefore for non-recipient households (Groups B, C and D) a 25% replacement sample was drawn.

To avoid the risk of interviewers incorrectly replacing sampled households (e.g. to avoid going to a very remote location) replacement was very closely controlled by the Field Operations Manager, and explicit permission had to be given before a replacement could be made. A detailed summary of all replacements was kept. A replacement was permitted in the following circumstances:

- If cannot find the household at all after all efforts of getting it has failed
- If household refuses to be interviewed
- If household has moved to a different location (sub-location in Nairobi)

Overall 584 sampled households (18.5%) could not be interviewed. Note that not all of these were replaced. This is because the replacements were drawn by location (recipients) / EA (non-recipients) and so in some cases the number was not sufficient to cover all non-interviews. Furthermore, not all replacements were found (i.e. replacements were replaced with other replacements).

F.1.4.5 Contact conversion and success rate

Because of replacements there were more household contacts than the household interview target (3,161). The table below indicates the results of these contacts.

Table F.1 Baseline survey household interview contact conversion and success rate

Results of the household contact	Area	
Households contacted	3,308	100%
Failed filter questions	215	6.5%
Moved out of location	54	1.6%
Listed household found but no one at home	23	0.7%
Household not found due to poor description	143	4.3%
Not Known / House under renovation	11	0.3%
Appearing both on recipient and non recipient list	16	0.5%
Deceased	8	0.2%
Refusal	4	0.1%
Total unsuccessful interviews	474	14%
Total completed interviews	2,834	86%
Target	**3,161**	

The most common reason for an unsuccessful contact was failure of filter questions. The filter questions applied to sampled non-recipients households. These households had been identified in the household listing process. Only those listed households that contained a potential OVC, i.e. contained at least one orphan or chronically sick adult, were eligible to be sampled as non-

recipients for the purposes of the survey. Eligibility was therefore determined using the listing questionnaire data prior to the non-recipient household sample being drawn. However, either because the household had given incorrect information initially, or because the household's characteristics had changed in the 12 months which elapsed between the household listing exercise and the baseline fieldwork, some sampled non-recipient households that were classified as eligible to be sampled would not in actual fact be eligible. This is what the filter questions were used to determine.

The other significant reason for unsuccessful interviews was that of inadequate descriptions. This mainly applied to sampled non-recipients (i.e. insufficient description recorded during the household listing exercise), but there were some cases where sampled recipients were impossible to locate even with assistance members of the OVC-CT programme's Location Committees (LOCs). The problems of finding non-recipient households were made worse by the relatively long interval between listing and fieldwork, which meant that both household movement and turnover of field staff made it harder to find some households.

F.1.5 Fieldwork quality control procedures

In order to ensure that fieldwork standards were maintained at the highest possible levels, a number of measures were undertaken. These are summarised in the following sub-sections. In addition respondents were informed about the estimated interviewing time required to complete the interview to avoid the interview being closed half way through the process.

The completed questionnaires were sent to the head office on a regular basis in batches of at least 50 questionnaires from each team. Upon receipt of the questionnaires at the Research Solutions Ltd head office, validation counts were made to ensure there was no loss of questionnaires between the field and the head office. All the questionnaires were received by the assigned Research Executive after which they were passed on to the Data Processing Manager for data capture.

F.1.5.1 Use of local languages

During the fieldwork, the survey teams conducted interviews in the languages respondents understood best, and were always given a choice of English, Swahili or their own vernacular (assuming it was one of these three languages).

To ensure that the master English questionnaire had been correctly translated, three teams were used for each language. The first in each case translated it into the relevant language, while the second back-translated it into English. Finally, the Questionnaire for each language was checked by an external language expert.

F.1.5.2 Questionnaire checks and editing

The team leaders ensured that they checked 100% of the questionnaires on a daily basis to ensure all the relevant information was collected. Any questionnaire found to have incomplete details was referred back to the field the following day for correction/amendment.

F.1.5.3 Interview supervision

Some 283 interviews (10%) were supervised either by the Operation Manager or the Supervisors or the Team Leaders. This was done to ensure that the interviewers were administering the questionnaire as briefed. Two representatives from OPM accompanied the interviewers as well during two separate quality control visits to the field. Every interviewer was accompanied at least three times during fieldwork.

F.1.5.4 Back-checks

More than 5% of the household interview questionnaires (220) were back-checked by the supervisors and Team Leaders. This was done by re-interviewing the respondent using a shortened version of the household questionnaires which covered only selected variables. This information was then compared against the full questionnaire to ensure that information was being reported and recorded accurately. The back-checks were made randomly during the course of fieldwork without any reference or prior interviewer notification.

The key issues that were identified through back-checks were cases of over-claims or under-claims on food expenditure, and in some instances incomplete listing of all the members in a household. In these cases the interviewer was asked to re-visit the household to re-do the relevant section.

F.1.5.5 Daily field meetings

The supervisor held de-briefing meetings every morning before the commencement of each day's fieldwork. During these sessions, the previous day's experiences were shared and the supervisors re-iterated the fieldwork standards required.

F.1.5.6 Small fieldteams

The small size of the survey teams ensured sound and close supervision. For more quality checks a representative from OPM, the project consultant and the lead project coordinator each made impromptu field visits.

F.1.6 Fieldwork challenges and lessons learnt

F.1.6.1 Insecurity – human threats

In areas with localised security threats, such as urban slums, survey teams generally concluded their work before dark. In some instances, they were accompanied by local administrators and Community Elders, both to minimize security risks and to establish rapport with residents.

F.1.6.2 Insecurity – non-human threats

There were certain EAs such as Chidzipwa, Pemba and Nhutu in Kwale bordered Simba Hills National Park. Lions were said to have been killing residents regularly, with the latest case having happened just a day before the EA was visited by the fieldteam.

Some of the other EAs such as Sokoni and God Fulu in Suba, Manyuru in Homa bay, Kaila in Kisumu, and Saka in Garissa are densely inhabited by dangerous snakes which normally bite, maim and sometimes kill their victims. Saka location in Garissa is also inhabited by crocodiles since it borders River Tana. In fact while working in that EA, there were incidents of people attacked and wounded by the crocodiles.

F.1.6.3 Individual / community hostility

On several occasions, interviewers were subject to some rudeness and/or mild hostility. This arose mainly in the context of demands by some respondents for payment in return for being interviewed, and of simple fatigue or pressing domestic or personal engagements. The hostility was sometimes as a result of some respondents claiming that similar questioning have been asked over and over again whilst households had not seen any accompanying benefits. Some respondents refused to be interviewed and we had an instance where an interviewer was thrown out of the household in Saka location of Garissa.

In another instance, the Homa Bay team was harassed in Wayaga village by an individual who had helped to push the fieldwork team's 4x4 vehicle which had got stuck in the mud and who was demanding payment for his troubles. Luckily the team was rescued by the area chief.

F.1.6.4 Terrain

Difficult terrain posed a challenge in certain parts of the sampled regions. This applied especially to parts of Homa Bay, Migori and North Eastern provinces, where the roads are rough and some areas are inaccessible during rainy seasons. In some locations, such as Suba, West Kabuoch and West Kawabwai, the landscape and the terrain is rocky and hilly, making access almost impossible. Households are often located on hilltops or along steep ridges, separated by deep valleys and gorges. In such areas, vehicles could not be used, forcing survey teams to walk long distances to reach selected households. In some cases the team had to walk for more than 10km to locate a household, only to find that the household could not be interviewed (e.g. because no adults were present at the time the fieldteam arrived).

F.1.6.5 Weather

Unfortunately, by the time the fieldwork began, the long rains were well underway, with vast stretches of the country experiencing floods, leading to the displacement of thousands of people. For example, in Kwale and Kisumu, it rained for three consecutive days, totally flooding-out certain EAs. This necessitated covering less affected EAs first, and only completing the remaining clusters after the floods had subsided and people had begun to return to whatever remained of their homes. Such occurrences thus inevitably caused alterations in the initial logistic plan.

Throughout, whether for reasons of terrain, weather, or simply time, the survey teams occasionally had to hire specialised transport (4x4 vehicles, motorbikes, boats and bicycles) in order to access their clusters/households. In areas like Waongo, God Ariyo, and Upper Kitare in Suba, interviewers were forced to use boats.

There were cases of the team arriving to their base as late as 2 a.m. in the morning. For example one team's vehicle got stuck in mud in West Kabwoch location of Homa Bay. Whilst in Modogashe the hired 4x4 vehicle got struck and the team had to walk for three hours in the harsh desert to locate the respondent.

F.1.6.6 Field logistics

Communication – In some areas, problems with (and even the absence of) mobile phone communication impaired daily communication. This meant that communication with the Head Office was not possible on a daily basis. In areas out of Garissa town it was impossible to communicate with the team members due to poor telecommunication network.

EA identification – Kanyodalo in Homa Bay and Bulla – Ishalangal in Garissa were completely unknown to the chief, village elders and the residents within the location.

Household identification – The regular change of houses (particularly in urban areas), amongst the target non-recipient sample, made it difficult to find the households within the initial location. Many had already moved houses in search for cheaper accommodation. In some cases some buildings were bought by well-to-do people and were under renovation, thus forcing the tenants to vacate the premises. Some buildings had been demolished forcing occupants to relocate.

In nomadic areas of North Eastern Province, some households that were to be located in Benane had actually moved to Modogashe which is approx 80 km apart in search for pasture. However, locating the respondents was still possible because the team relied heavily on the Local Children's Officers for guidance and also on using household's full clan names.

Hotel accommodation – The EAs in North Eastern province were several hundred kilometres from main town and it was impossible to operate from the main town. The teams were forced to make arrangements with local residents, boarding schools, chief's camps or health centres, and pay a fee, as there are is no public accommodation available. The team had to buy bedding from Garissa town to use it at the various places where they managed to secure some space for resting.

F.1.6.7 Language barriers

Not all Kenyans live in mono-ethnic areas, where a single vernacular is spoken throughout. This issue was sorted out by hiring interviewers/translators who were familiar with the particular areas/region and were fully conversant with the local dialect.

F.1.6.8 Questionnaire content issues

Section B

For the household roster interviewers were instructed to list household members from oldest to the youngest starting with the household head. There was an assumption that the Head of the house was always the oldest. This was not always the case and thus the team listed oldest to the youngest members in that order

Question 4 – There was no option for the relationship 'cousin', hence this was put under 'other relatives'. There were cases where the head of household considered (and reported) nephews or nieces as his/her own children. This is quite common in the African tradition. This issue was corrected once identified.

Questions 6 & 7 – A number of the respondents could not report the dates of birth of some or all household members. This happened especially in cases where OVCs were fostered, adopted or not born within the nuclear family. Cautious effort was made to establish the exact date of birth by checking medical, baptismal and school documents.

Question 35 – There was an issue on unpaid activities. The phrase *"currently working"* was initially always perceived as working to earn a salary. This was clarified early enough that all inconsistencies were corrected.

Sections C and D: consumption/expenditure

There were concerns that these sections may have a number of people over- and under-claiming. Some respondents appeared to be under the impression that these sections determined the value of aid/help they would receive in future. Under-claiming was motivated by the desire to be perceived as very poor hence to earn sympathy. Over-claiming arose in cases where households believed that what they reported to consume would equate to what will be given out to them.

Section E

Question 4 – Quantifying the value in monetary terms for items such as food, clothing and other non-cash support was a problem for some respondents. However the team was instructed to probe fully in order to obtain good estimates of the value of the items.

Section F

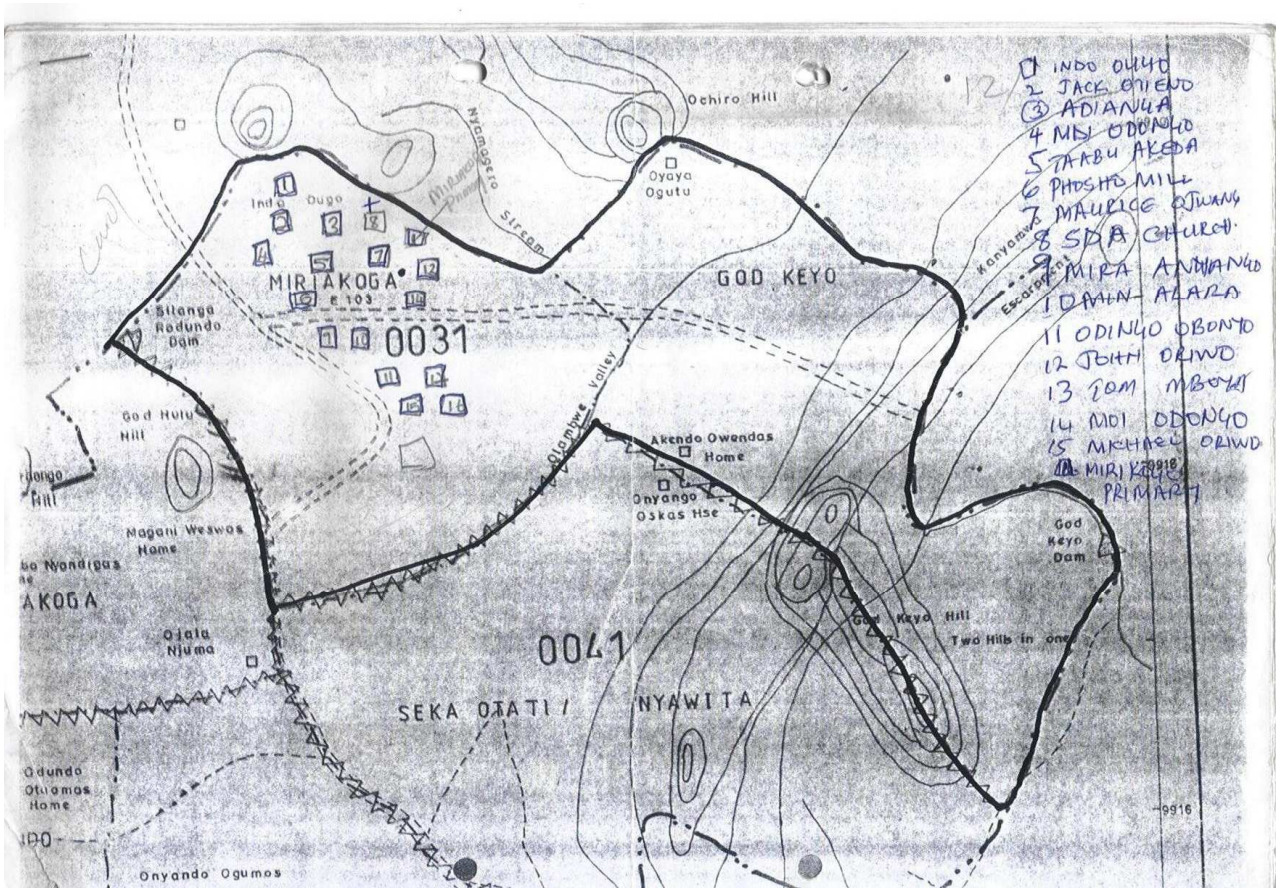
Question 8 – In North Eastern, the main source of lighting was found to be a torch. However this response did not correspond to any of the pre-codes and therefore the team coded it under *"Other – specify"* as instructed.

F.1.6.9 Questionnaire translation

The number of languages the questionnaire was translated into and the technical nature of the content, posed a challenge, particularly given that the translations had to embody an *everyday spoken language* as opposed to formally grammatical one. It is recommended that in future such instrument is discussed with target audiences through focus group discussions in order to overcome such difficulties, even if doing this would require additional time.

F.2 Household identification

Figure F.1 An example of a sampled enumeration area map



F.3 Survey data processing

F.3.1 Data collection and entry

The main fieldwork (Nairobi, Migori, Suba, Homa Bay, Kisumu and Kwale) commenced on 24th March 2007 and finished on 3rd July. It was staggered according the role-out of the OVC-CT programme, and fieldwork in each District commenced as the recipient lists (used as the sample frame for the sampled recipients) were made available by the programme. The data entry (two independent entries) for the main dataset was completed by 1st August.

Because of the timetable for the roll-out of the programme, it was not possible for the Garissa fieldwork to begin before the main fieldwork had been completed. The Garissa fieldwork had to be

undertaken by a separate Somali-speaking fieldwork team that were trained in early August. The Garissa recipient lists were provided on 10th August and, following one week of training, the Garissa fieldwork began on 18th August, finishing on 28th August.

Due to a modification to the distribution of recipients across evaluation locations that deviated from the distribution agreed between OPM and the programme in March 2007, some additional recipient households were sampled and interviewed in Migori. In other districts it was possible to revert back to the agreed distribution since enrolment had not yet taken place. The additional Migori fieldwork took place between 12th and 16th August.

The data entry phase ended on 24th September when the Garissa and additional Migori data entry was finished.

F.3.2 Data entry errors check

The data was entered twice, independently and the resulting data sets compared using STATA software with specially written checking programmes. These programmes cross-checked every data point in each datafile across the two entry rounds and produced a list of data entry conflicts identified by unique record identifier and variable (and row where applicable). Note that before round1 and round2 data could be cross-checked for conflicts the unique identifier codes had to be checked for duplicates and mismatches that would prevent the two rounds of data from merging correctly.

Every list of data entry conflicts errors was then resolved by the data entry team by consulting the hard-copy questionnaires, whereupon corrections were made in the relevant dataset (either round1 or round2, or both if both were incorrect). All corrections were recorded so that they could be undone if it was later found that a mistake had been made. Once the data entry team had checked and attempted to correct all the queries the two corrected datasets (round1 and round2) were re-checked and any outstanding data entry conflicts were identified and checked. For each datafile this process was repeated until no outstanding data entry errors remained, that is until round1 and round2 data was identical.[47]

This whole procedure had to be repeated for 44 separate datafiles (10 for the household questionnaire and 12 for the community questionnaire, for both the main and also the Garissa and extra Migori datasets).

Aware that the data entry checking has taken longer than anticipated, OPM has undertaken some analysis of the data checking process. In the 44 datafiles there were 4,497,507 data fields. Assuming a 1% error rate on average implies 44,975 data entry conflicts to be resolved. Since not all inconsistencies are resolved first time, 44,975 errors will necessitate more than 44,975 separate data entry conflict checks. Assuming an average resolution rate of 95% and an average of three checking cycles implies 53,125 separate data entry conflict queries will need to be checked. If each query takes two minutes to check and resolve then, with a 10 hour working day, a five day week and a data entry team comprising 8 members, resolving the data entry conflicts will therefore require at least four weeks. This does not include resolving identifier errors which has to be done

[47] Note that a few variables in the datasets will not be used for the analysis (e.g. the time of data entry, etc). These variables were not checked for data entry conflicts. In addition, some variables are recorded as words rather than numbers (referred to as "string" variables, as opposed to "numeric" variables). Methods were used to ensure that unimportant data entry conflicts caused by typos or slight spelling mistakes were filtered out and ignored.

On average it took three repetitions of this process (i.e. three checking cycles) before all double entry conflicts had been resolved.

before the two entry rounds can be cross-checked and the double entry conflicts identified and is likely to take about a week in total. It also doesn't take into account the cumulative time required to transfer and track the various rounds of data produced by each checking cycle for each datafile.

In fact the data entry error correction process was not quite as efficient as had been hoped for. While the error rate was only slightly higher than might be expected (1.2%) and there were indeed three checking cycles on average, the conflict resolution rate was 89% on average. These parameters imply a minimum of six weeks were required to resolve all the data entry errors. In reality it is of course impossible to complete the data entry error corrections in the theoretical minimum time.

The figures quoted in the previous two paragraphs are summarised in the following table:

Table F.2 Data entry errors – target and actual error rate

	Target	Actual
Data fields	4,589,118	4,589,118
Error rate	1.0%	1.2%
Errors	45,891	55,896
Resolution rate	95%	89%
Average number of checking cycles	3	3
Total queries to be checked	53,125	73,500
Minutes per query	2	2
Data entry team size	8	8
Hours worked per team member per day	10	10
Minimum time required (days)	22	31
Minimum time required (weeks)	4	6
Minimum time required (months)	1.1	1.5

F.3.3 Identifier errors check

After all data entry conflicts have been corrected in each dataset the identifier codes which link datafiles must be checked. Various identifier codes link: questionnaire section datafiles; household questionnaires to community questionnaires; and individual household members between sections (via household roster idcode).

F.3.4 Data value errors check

The data was then checked for blanks, skip errors, outliers and internal inconsistencies. A list of every error was generated by questionnaire and this was sent to Research Solutions to check against the hard-copy and to correct in the master data.