

# **Comparative Effectiveness: Cost-effectiveness of models of care quality for children affected by HIV/AIDS in Nepal**

A Dissertation report submitted to Department of Public Health, Faculty of Health Sciences, Nobel College for partial fulfillment of the requirement for Bachelor of Public Health (BPH), Eighth semester, Fourth year.

Submitted by

**Prajwal Mani Pradhan**

Department of Public Health

Nobel College

Pokhara University

November, 2009

## Recommendation

I certify that the dissertation by **Mr. Prajwal Mani Pradhan** on "**Comparative Effectiveness: Cost-effectiveness of models of care quality for children affected by HIV/AIDS in Nepal**" was written under my direct supervision as a partial fulfillment of the requirements of Bachelors in Public Health. He worked under my supervision for six months for the completion of this dissertation. I further confirm that this original work has not been part for any other degree. Such materials as have been obtained from various sources have been duly acknowledged in the dissertation. I, therefore, recommend that **Mr. Prajwal Mani Pradhan** for the presentation of this work.

*[Signature obtained on paper]*

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Dissertation Supervisor,  
**Mr. Megha Raj Dhakal**  
Under-Secretary,  
Ministry of Health & Population  
Date:

## Approval Sheet

This is to certify that Mr./Ms. **Prajwal Mani Pradhan** of final year of Bachelors in Public Health (BPH) has satisfactorily completed and defended dissertation entitled "**Comparative Effectiveness: Cost-effectiveness of models of care quality for children affected by HIV/AIDS in Nepal**" as a partial fulfillment of the requirements of the Bachelors of Public Health under the Faculty of Medical Sciences, Nobel College, Pokhara University.

*[Signature obtained on paper]*

.....

Supervisor

**Mr. Megha Raj Dhakal**

Under-Secretary,

Ministry of Health & Population

Date: 9<sup>th</sup> Nov. 2009

*[Signature obtained on paper]*

.....

External Examiner

Dr. Gajananda Prakash Bhandari

Senior Epidemiologist

Nepal Health Research Council

Date: 9<sup>th</sup> Nov. 2009

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**Prajwal Mani Pradhan**

## Abstract

U.S. federal government in its official site [www.Recovery.gov](http://www.Recovery.gov) defines comparative effectiveness as “Research that compares the clinical outcomes, effectiveness, and appropriateness of items, services, and procedures that are used to prevent, diagnose, or treat diseases, disorders, and other health conditions recovery” which is in close align to American Recovery and Reinvestment Act, 2009.

Cost-effectiveness analysis (CEA) is a form of economic analyses that compares the relative expenditure (costs) and outcomes (effects) of two or more courses of action. Cost-effectiveness analysis is often used where a full cost-benefit analysis is inappropriate e.g. the problem is to determine how best to comply with a legal requirement. (Wikipedia, 2009).

15 million children worldwide have already been orphaned by HIV/AIDS by the year 2007 (UNAIDS, 2008). Nepal has concentrated epidemic of HIV/AIDS. The national prevalence level of HIV/AIDS is at 0.5% (UNAIDS, 2008). It is estimated that currently 70,000 people are living with HIV/AIDS in Nepal (UNAIDS, 2008). It has also been estimated of 5000 deaths in adults and children as of 2007 whose low and high estimates are 3500-7500 (UNAIDS, 2008). This concentrated epidemic still seems to be concentrated in the age group of 15-49 year age group. The disability and death of the people of this age group has tremendous impact on the lives of children. Orphan and Vulnerable children refer to those children under the age of 15 who has lost his/her biological parent both or one of them due to HIV/AIDS and now are/is currently either living with or without HIV/AIDS but is prone to stigma, discrimination and disregarded by society. Children account for half of all the new HIV infections worldwide and it is estimated that approximately four thousand children in Nepal are infected with HIV. With an estimated seventy thousand people living with HIV in Nepal, there are tremendous implications for children, whose lives are greatly affected when a parent is infected (UCAAN, 2007).

The purpose of the study was to conduct cost-effective analysis for models of care for orphaned and vulnerable children in Nepal.

The study dealt with cost (fixed, semi-fixed, variable, medical costs) and child care months as variables of the study whereas convenient sampling was used for the sampling process. The sample size was at least one site for each model of care that exists in Nepal at the time of the study, should be functional for at least one year (*see sample specification*). Data was collected by using informal interpersonal communication, and sometimes few semi-structured questions and observational checklist. Financial costs were processed into economic costs for analysis using simple economic tools like opportunity cost, discounting, and annualization. The minimum standard of care was adapted from the minimum standard of care for conduction of child care home, 2060 B.S., Central Child Welfare Board.

The child care models though are many in number for orphan children but not much for children with HIV/AIDS or for orphan and vulnerable children. The existing models of care range from community based care model to improvised form of home based care model or comprehensive care model.

Keta-keti Ashram's cost of care was 9,215.44(with house rent), 1,53,804.51 (with house ownership) per child, Manisha Singh Punerjeevan Niwas (MSPN)'s cost of care was 8,666.97(with house rent), 1,53,756.04(with house ownership) and Aakura 5402.17(with house rent), 1,53,249.24 (with house ownership). The reasons for the variations in cost can be attributed to multitude of factors ranging from cost of supervision to cost of placement.

Cost also varies according to the model of care with the most cost effective to be community based care (with income generation activities). It is also essential to view that though community based care is the most cost effective child care model it may not always be sufficient in addressing all the needs of children. Therefore, it is always important to keep space for other child care models which provide or specialize in particular child care modes.

**Keywords:** Comparative effectiveness, Cost-effectiveness, CABA, OVC, Care models.

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## **LIST OF ACRONYMS**

**B.S.:** Bikram Sambat

**CABA:** Children Affected By HIV/AIDS

**CCWB:** Central Child Welfare Board

**CEA:** Cost-Effectiveness Analysis

**DCPP:** Disease Control Priority Project

**FNC:** Friends of Needy Children

**HBCIs:** Home-Based Care Initiatives

**HIV/AIDS:** Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome

**ICER:** Incremental Cost-Effectiveness Ratio

**INGOs:** International Non-Governmental Organizations

**MSPN:** Manish Singh Punerjeevan Niwas

**NCASC:** National Centre for AIDS & STD Control

**NGO:** Non-Governmental Organization

**NRs.:** Nepalese Rupees

**NICE:** National Institute for Health and Clinical Excellence

**OVCs:** Orphan and Vulnerable Children

**PHC:** Primary Health Care

**QALYs:** Quality Adjusted Life Years

**QoL:** Quality of Life

**UCAAN:** Universal access for Children Affected by AIDS in Nepal

**UNAIDS:** Joint United Nations Program on HIV/AIDS

**USAID:** United States Agency for International Development

**UNICEF:** United Nations Children's Fund

**VDC:** Village Development Committee

**WHO:** World Health Organization

# CHAPTER I

## 1. INTRODUCTION

### 1.1. Background

Comparison of one diagnostic or treatment option to one or more others (IOM,2007).

Comparison of the outcomes of different treatments for the same condition (MedPac, 2007).

U.S. federal government in its official site [www.Recovery.gov](http://www.Recovery.gov) defines comparative effectiveness as “Research that compares the clinical outcomes, effectiveness, and appropriateness of items, services, and procedures that are used to prevent, diagnose, or treat diseases, disorders, and other health conditions recovery” which is in close align to American Recovery and Reinvestment Act, 2009.

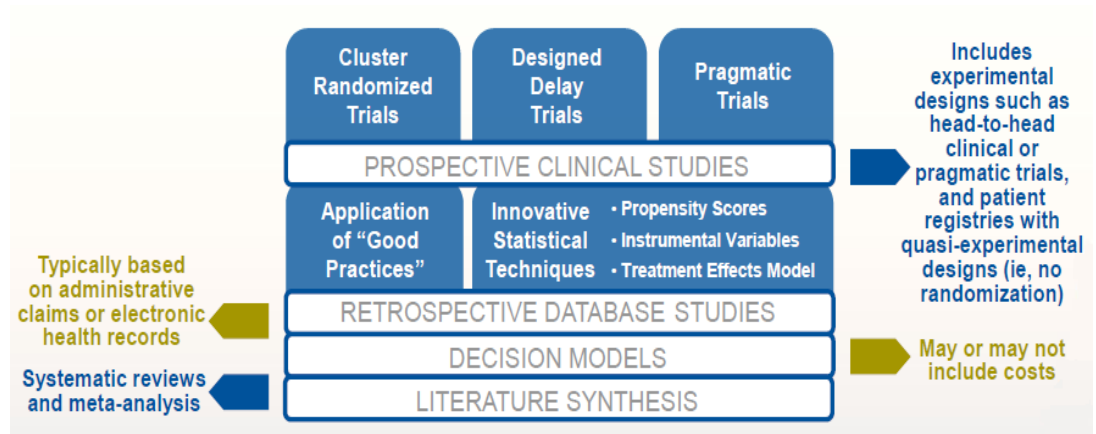
Comparative effectiveness is not...

- New, it just needs new direction,
- Restricted to head-to-head trials of therapy A to therapy B
- Meant to include the entire spectrum of health services interventions such as quality improvement programs or provider incentive programs and benefit design
- Merely a “buzzword” but a developing concept that is gaining a strong foothold across stakeholders.

Comparative effectiveness methods can be broadly placed into four categories:

- Prospective clinical studies (primary clinical effectiveness research)
- Retrospective database studies
- Decision models
- Systematic
- Literature
- Reviews

Figure 1: Comparative effectiveness methods



Adapted from Xcenda, 2009

## 1.2. Cost-effectiveness Analysis:

Cost-effectiveness analysis (CEA) is a form of economic analyses that compares the relative expenditure (costs) and outcomes (effects) of two or more courses of action. Cost-effectiveness analysis is often used where a full cost-benefit analysis is inappropriate e.g. the problem is to determine how best to comply with a legal requirement. Typically the CEA is expressed in terms of a ratio where the denominator is a gain in health from a measure (years of life, premature births averted, sight-years gained) and the numerator is the cost of the health gain (Wikipedia, 2009).

Cost-effectiveness analysis is a specific type of economic analysis in which all costs are related to a single, common effect. Decision makers can use it to compare different resource allocation options in like terms. A general misconception is that CEA is merely a means of finding the least expensive alternative or getting the “most bang for the buck” (Dixon, I., Lundeen, A., 2004).

Cost-effectiveness analysis compares the costs and health effects of an intervention to assess the extent to which it can be regarded as providing value for money. This informs decision-makers who have to determine where to allocate limited healthcare resources (Phillips, C., 2009).

The term cost-effectiveness has become synonymous with health economic evaluation and has been used (and misused) to depict the extent to which interventions measure up to what can be considered to represent value for money. Strictly speaking, however, cost-effectiveness analysis is one of a number of techniques of economic evaluation, where the choice of technique depends on the nature of the benefits specified. Cost-effectiveness analysis has been defined by the National Institute for Health and Clinical Excellence (NICE) as an economic study design in which consequences of different interventions are measured using a single outcome, usually in 'natural' units (for example, life-years gained, deaths avoided, heart attacks avoided or cases detected). Alternative interventions are then compared in terms of cost per unit of effectiveness (Phillips, C., 2009).

Cost-effectiveness analysis can indicate which one of a number of alternative interventions represents the best value for money, but it is not as useful when comparisons need to be made across different areas of healthcare, since the outcome measures used may be very different. As long as the outcome measure is life-years saved or gained, comparisons can be made, but even in such situations cost-effectiveness analysis remains insensitive to the QoL dimension. In order to know which areas of healthcare are likely to provide the greatest benefit in improving health status, a cost-utility analysis needs to be undertaken using a 'common currency' for measuring the outcomes across healthcare areas. If information is needed as to which interventions will result in overall resource savings, a cost-benefit analysis has to be done, although both cost-utility analysis and cost-benefit analysis have their own drawbacks (Phillips, C., 2009).

The quality of cost-effectiveness analyses is highly dependent on the quality of effectiveness data used, and all cost-effectiveness analyses should include a detailed sensitivity analysis to test the extent to which changes in the parameters used in the analysis may affect the results obtained. Cost-effectiveness is only one of a number of criteria that should be employed in determining whether interventions are made available. Issues of equity, needs, and priorities and so on should also form part of the decision-making process (Phillips, C., 2009).

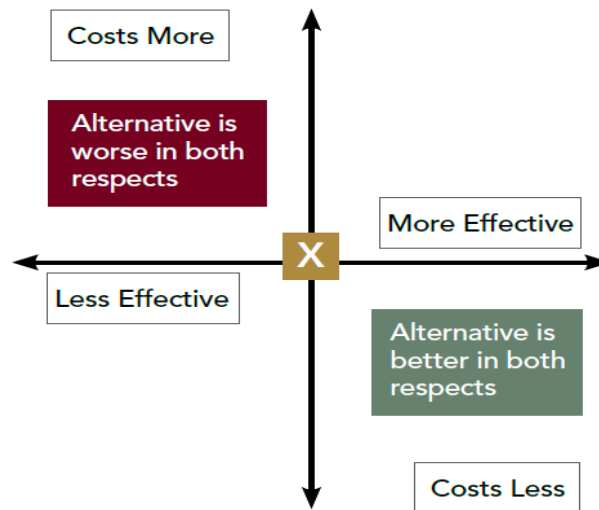


Cost-effectiveness analysis is the primary tool for comparing the cost of a health intervention with the expected health gains. An intervention can be understood to be any activity, using human, financial, and other inputs, that aims to improve health (DCPP, 2008).

The health gain might be reducing the risk of a health problem, reducing the severity or duration of an illness or disability, or preventing death. If the health outcome is the same, say preventing death from measles either by immunizing a child or by treating the disease, then analysts need only compare the costs of different interventions that can achieve that outcome. The result is a cost-effectiveness ratio, expressed as cost per outcome, which can be compared across various types of services or various service locations that perform the same function. The ratio is always discussed in relative terms, as there is no “best” or absolute level of cost-effectiveness. The cost-effectiveness of an intervention can vary greatly depending on a program’s size and scope. Typically, as program coverage expands and more people are served, the cost per outcome drops. For example, if more children can be immunized with the same fixed costs like nurses and clinics, then each additional immunization will be cheaper until the service approaches full capacity (DCPP, 2008).

On the other hand, costs can rise as coverage expands if it becomes harder to reach additional patients. Therefore, depending on the comparison undertaken, an analyst might look at the average cost-effectiveness ratio or the incremental cost-effectiveness ratio. The average cost-effectiveness ratio looks at total costs and total results, starting from zero, while the incremental ratio compares additional costs and additional results, starting from the current level of coverage or services. Using child immunizations as an example, the incremental cost of adding mobile vaccination teams might be lower than expanding fixed clinic services, particularly if the unvaccinated children are dispersed and hard to reach. In Figure 1, several alternatives might be available for expanding the coverage of a current intervention (the status quo shown at point “X”). If an alternative is more effective and less costly, decision makers should usually opt in favor of adopting it, while they should abandon options that are more costly and less effective. The trade-offs are less clear in the unmarked quadrants, requiring decision makers to weigh whether the benefits that might be gained merit a change in strategy (DCPP, 2008).

Figure 2: Comparing Alternatives to a Given Health Intervention (X)



Adapted from DCP, 2008

Ideally, cost-effectiveness analysis should include direct costs (such as doctors' or nurses' time and supplies used) as well as indirect costs (such as a portion of administrative costs). The cost of equipment also needs to be spread across its many uses. These costs are usually not readily available, however, and thus the costs of interventions reported in developed countries are often used and adjusted for developing-country settings. Alternatively, a study conducted in one low-income setting is sometimes used to estimate costs in all or several low-income countries (DCPP, 2008).

Cost-effectiveness analysis is a technique to assist you in decision-making. It is one of the tools available to help you to identify areas of your health program that are inefficient and to help you to design a better program. A cost-effectiveness study involves assessing the gains (effectiveness) and resource input results are usually expressed in terms of cost per unit of effectiveness for each alternative ways of achieving a specified objective. The alternative with the lowest cost per unit of effectiveness is the most cost-effective and is generally to be preferred on grounds of economic efficiency. This technique can be applied to a whole range of questions that face managers of health programs: from broad issues (e.g.: which PHC program to invest more funds in) to debates about specific details, such as the most suitable length for a training course (Creese, A., & Parker, D. (Eds.), 1994).

A cost-effectiveness study should be done, if possible, whenever you are faced with a choice of options. It may not always be worth doing a rigorous analysis but the general approach is worth following. Perhaps more money has become available and you need to decide where best to spend it; perhaps you have a new idea about where your program should be going and need to convince others of its merits; perhaps you are evaluating the outcome of a program and recognize that the evaluation provides an excellent opportunity to do a cost-effectiveness analysis. Although the issues addressed and the program involved can be quite diverse, there are five steps that are required for every cost-effectiveness analysis. Stated in terms of a program, they involve:

- Defining the program's objectives
- Identifying the possible ways of achieving those objectives
- Identifying and measuring the costs of each options
- Identifying and measuring the effectiveness of each option
- Calculating the cost-effectiveness of each option and interpreting the results.

(Creeese, A., & Parker, D. (Eds.), 1994).

The basic principle of a cost effectiveness analysis is that all consequences of decisions should be identified, measured, and valued. Cost effectiveness analysis provides a formal framework for comparing the relation between the health and economic consequences of different healthcare interventions (Salomon, J.A, Weinstein, M.C, Goldie, S.J., 2004).

People who are not economists often find it difficult to understand the importance of the theory behind the comparison of costs and effects. After all, if we compare two washing machines of equal cost and one works for 10 years and the other for 15, it is clear that the machine lasting 15 years is a better buy. The need for theory arises, however, because interpersonal rather than within individual comparisons are involved; in health care the question is not, generally, whether I choose the 10 or 15 year washing machine but whether I get the 10 year washing machine or you get the one lasting 15 years (Coast, J. 2004).

Cost effectiveness analysis is based on achieving an assumed societal objective of maximizing health Little evidence exists that this is the desired objective of the public

or decision makers Use of QALYs as a single outcome measure for economic evaluation means that important health consequences are excluded Complex technical presentation makes the findings difficult to understand and use Cost-consequences analysis would better approach the objectives of decision makers and be easier to understand (Coast, J. 2004).

The concept of opportunity cost is fundamental to the economist's view of costs. Since resources are scarce relative to needs, the use of resources in one way prevents their use in other ways. The opportunity cost of investing in a healthcare intervention is best measured by the health benefits (life years saved, quality adjusted life years (QALYs) gained) that could have been achieved had the money been spent on the next best alternative intervention or healthcare program (Palmer, S., Raftery, J., 1999).

Opportunity cost can be assessed directly with cost effectiveness or cost utility studies. When two or more interventions are compared cost utility effectiveness analysis makes the opportunity cost of the alternative uses of resources explicit. Cost effectiveness ratios, that is the £/outcome of different interventions, enable opportunity costs of each intervention to be compared (Palmer, S., Raftery, J., 1999).

Because of the uncertainty involved in forecasting future demand and the complex interrelationships between the cost of output and the price charged, least-cost analysis should also take into account the value of flexibility. For example, in the case of uncertain demand in a water supply project, it may be more costly but preferable to consider staging construction. Adding capacity in small amounts gives the water enterprise flexibility, but is also more costly. Hence, it is important to be able to value this flexibility. One way to do this is to find out how much lower the capital cost of the smaller plant would have to be to make it the preferred choice. The economies of scale associated with the larger cheaper-cost option would have to be equal to, or greater than, that amount to make giving up the flexibility of the smaller project economical (Asian Development Bank, 2009).

### **1.3. HIV/AIDS and CABA/OVCs**

Since HIV/AIDS was discovered in 1981, more than 20 million people have lost their lives to the virus. According to the Joint United Nations Program on HIV/AIDS (UNAIDS), nearly 40 million are currently living with HIV/AIDS, including nearly 2.2 million children under the age of 15. In 2004, 4.9 million people acquired the virus, and 3.1 million died from AIDS. Sub-Saharan Africa remains the most affected region with 25.4 million people living with HIV/AIDS at the end of 2004, 1.9 million of whom were children under the age of 15. The United States Agency for International Development (USAID), the United Nations Children's Fund (UNICEF), and UNAIDS estimate that at the end of 2003, 15 million children under the age of 18 had lost one or both parents to AIDS, with the majority (82%) in sub-Saharan Africa. In just two years, from 2001 to 2003, the global number of children orphaned by AIDS increased from 11.5 million to 15 million. By 2010, it is expected that more than 25 million children will be orphaned by this deadly virus. Due to the 10-year time lag between HIV infection and death, officials predict that orphan populations will continue to rise for a similar period, even after the HIV rate begins to decline. Experts say only massive spending to prolong the lives of parents could be expected to change this trend (Salaam, T., 2005).

The impact of HIV/AIDS on children is just beginning to be explored. Not only are children orphaned by AIDS affected by the virus, but those who live in homes that have taken in orphans, children with little education and resources, and those living in areas with high HIV rates are also impacted. Children who have been orphaned by AIDS may be forced to leave school, engage in labor or prostitution, suffer from depression and anger, or engage in high-risk behavior that makes them vulnerable to contracting HIV. Children who live in homes that take in orphans may see a decline in the quantity and quality of food, education, love, nurturing, and may be stigmatized. Impoverished children living in households with one or more ill parent are also affected, as health care increasingly absorbs household funds, which frequently leads to the depletion of savings and other resources reserved for education, food, and other purposes (Salaam, T., 2005).

An estimated 5% of children affected by HIV/AIDS worldwide have no support and are living on the street or in residential institutions. Although most children live with a caretaker, they face a number of challenges, including finding money for school fees, food, and clothing. Experts contend that effective responses must strengthen the capacity of families and communities to continue providing care, protect the children, and to assist them in meeting their needs. There are thousands of localized efforts, many of them initiated by faith-based groups, to address the needs of children made vulnerable by AIDS. Proponents argue that supporting these “grassroots” efforts can be a highly cost-effective response, although additional mechanisms are needed to channel such resources. They further assert that additional resources are needed to expand the limited programs and to support the children who are on the street or in institutional care (Salaam, T., 2005).

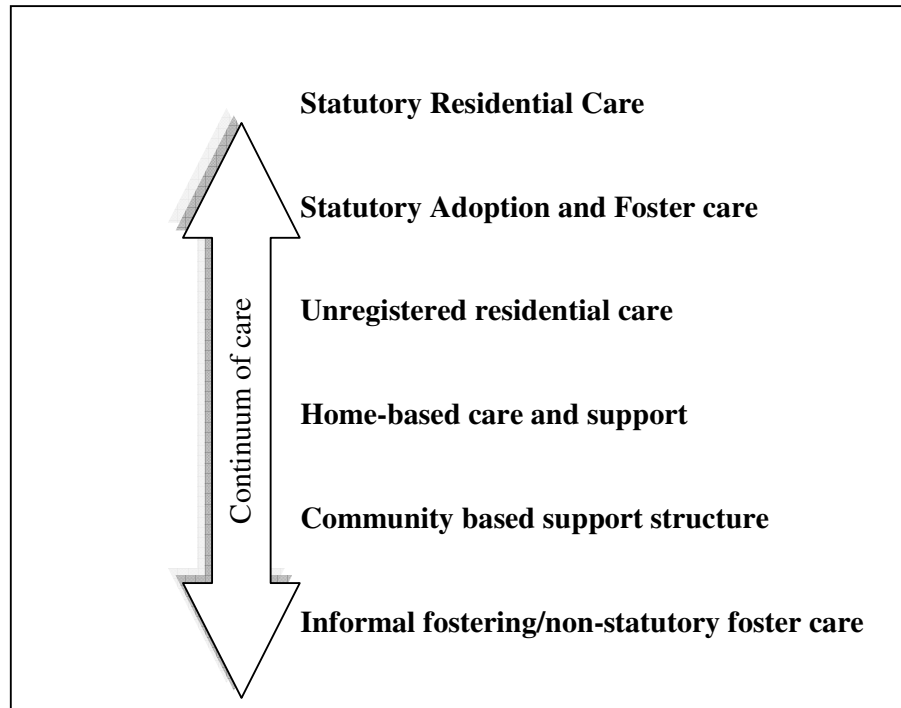
15 million children worldwide have already been orphaned by HIV/AIDS by the year 2007 (UNAIDS, 2008). Nepal has concentrated epidemic of HIV/AIDS. The national prevalence level of HIV/AIDS is at 0.5% (UNAIDS, 2008). It is estimated that currently 70,000 people are living with HIV/AIDS in Nepal (UNAIDS, 2008). It has also been estimated of 5000 deaths in adults and children as of 2007 whose low and high estimates are 3500-7500 (UNAIDS, 2008). This concentrated epidemic still seems to be concentrated in the age group of 15-49 year age group. The disability and death of the people of this age group has tremendous impact on the lives of children. Orphan and Vulnerable children refer to those children under the age of 15 who has lost his/her biological parent both or one of them due to HIV/AIDS and now are/is currently either living with or without HIV/AIDS but is prone to stigma, discrimination and disregarded by society.

At present a variety of models of care for orphan and vulnerable children exist in Nepal. As the number of orphans’ increases these models will have to be expanded and even newer method of care may be made available (Desmond, Gow, Loening-voysey, Wilson, Striling, 2002). The quality and costs of the care provided by these different models, differs. In realm of effective and efficient planning, the relation between the quality and costs of care provided by various models presently available in Nepal needs to be more clearly understood.

The impact of HIV/AIDS on children is just beginning to be explored. Not only are children orphaned by AIDS affected by the virus, but those who live in homes that have taken in orphans, children with little education and resources, and those living in areas with high HIV rates are also impacted. Children who have been orphaned by AIDS may be forced to leave school, engage in labour or prostitution, suffer from depression and anger, or engage in high-risk behaviour that makes them vulnerable to contracting HIV. Children who live in homes that take in orphans may see a decline in the quantity and quality of food, education, love, nurturing, and may be stigmatized. Impoverished children living in households with one or more ill parent are also affected, as health care increasingly absorbs household funds, which frequently leads to the depletion of savings and other resources reserved for education, food and other purposes (Salaam, 2005).

In an attempt to bottle-neck cost we should not overlook at the impact of quality care has on children. This study evaluates both the quality and the cost of providing care, in each of identified model for OVC that range from formal children's homes to community-based structures which exists in Nepal.

*Figure 3: Models of care*



Adapted from: Desmond, Gow, Loening-voysey, Wilson, Striling, (2002)

### **1.3.1. Statutory residential care**

Traditional children's homes, reform schools and places of safety all fit into the model of statutory residential care. These are legal, formal institutions that function with government support and supervision. Residential care facilities tend to be large and staffed by many different caregivers. Given the new challenges of children living with HIV/AIDS, these facilities will need to re-think how they provide and finance the care that is given. These facilities often face the difficulty of being constitutionally obliged to accept HIV-positive children without being able to know their HIV status, or provide the complex and costly care that is required (Desmond, Gow, Loening-voysey, Wilson, Striling, 2002).

### **1.3.2. Statutory adoption and foster care**

Fostering requires a person appointed by the court to perform the role of a surrogate parent and to take full custody of the child. The place of abode is almost always the home of the foster parent. Child Welfare Societies are the state-appointed authorities managing adoption and foster placements. This includes recruiting and screening the parents as well as matching and placing the children (Desmond, Gow, Loening-voysey, Wilson, Striling, 2002).

### **1.3.3. Unregistered residential care**

Non-statutory residential care provides housing that is often outside the child's community of origin. As with statutory residential care, these homes care for children, who are abandoned, abused and have no family who can care for them. In some cases the children are even placed in these homes by court order. However, unlike statutory residential care, these homes are not registered and are therefore not under the supervision of the government. This approach clearly fills a gap in the need for substitute care and is used as a resource by social workers even though these homes often do not meet prescribed regulations for providing care. Even at one third of the cost of statutory residential care this is still a relatively costly approach. As the legal status of these homes is unclear, oversight and monitoring of care in the homes is not legally required unless a child has been placed there by a court order (Desmond, Gow, Loening-voysey, Wilson, Striling, 2002).



#### **1.3.4. Home-based care and support**

Home-Based Care Initiatives (HBCIs) provide services to households of people living with AIDS, TB, disabilities and injuries or other chronic illnesses. Community home-based care models recruit community members to visit and care for needy people in their homes. These HBCI models can either have a community base or an institutional base. All the sites that were visited by the research team provided home care services to anyone in need of care, however the bulk of their patients were living with AIDS. There are no minimum standards of training for workers or quality of service for home-based care programs in South Africa. Most HBCIs are independent organizations registered as NGOs and are therefore guided by a constitution and board of management. Many have access to donor funding (Desmond, Gow, Loening-voysey, Wilson, Striling, 2002).

#### **1.3.5. Community-based support**

Community organizations in this model category offer support to indigenous, informal caregivers. Their focus varies between emotional support, information provision, advice, advocacy, donations and income generation programs. Generally, OVC stay in their communities of origin and are cared for by family and members of the same community. Within this approach a variety of organizational structures exist. Some organizations have a constitution, a board of management, staff structure and government registration. Others are completely voluntary, often associated with religious groups and tend to be more charity oriented and are unlikely to be registered in any way (Desmond, Gow, Loening-voysey, Wilson, Striling, 2002).

#### **1.3.6. Informal fostering/Non-statutory foster care**

In this approach, community members assume the responsibility of caring for vulnerable children living among them. Generally, children cared for with this approach are external to the welfare system. The children are not placed in homes with a court order and the caregivers do not receive government grants. Kinship obligations, community preservation and a sense of personal calling motivate caregivers. Support to indigenous caregivers is sometimes bolstered by donations. Oftentimes, community structures, or individual community members offer support to caregivers. There is no organizational structure, and networking depends on available resources. This model of care is very common in rural areas where access to services

is more difficult than in urban areas (Desmond, Gow, Loening-voysey, Wilson, Striling, 2002).

In case of Nepal, it was found that the models of child care existing in Nepal was very limited and in most of the situations narrowed down to a limited care services only which ranged from community based child care model, home based care and comprehensive care model.

#### **1.4. Problem statement**

As policy makers assess the growing weight of the orphan and children affected by AIDS burden, there are key policy challenges apparent. These challenges relate to (1) reaching consensus on policy related definitions of orphans and vulnerable children, (2) the emergence and realization of rights based approaches to programming for orphans and vulnerable children, (3) the explication and scaling up of 'good' practices in supporting orphans and vulnerable children, (4) effective flow of 'resources to the base' and finally (5) mobilizing political will (Phiri & Webb, 2002).

The first case of AIDS in Nepal was reported in 1988. By the middle of 2008, more than 1,750 cases of AIDS and over 11,000 cases of HIV infection were officially reported, with two times as many men reported to be infected as women. However, given the limitations of Nepal's public health surveillance system, the actual number of infections is thought to be much higher. UNAIDS estimates 70,000 people are living with HIV by the end of 2007 in Nepal (The World Bank, 2008).

According to the national estimates of NCASC, 2009; there has been significant rise in the proportion of children infected with HIV/AIDS. Routine reporting to the NCASC shows an increase in the number of reported AIDS among children from 54 in 2005 to 199 in 2006. Estimates indicate that 2,500 children aged 0-14 are currently infected with HIV (The state of children of Nepal, 2007).

The three critical challenges that must be corrected to facilitate the global response to children affected by HIV/AIDS are:

- Government – led support and services must reach all children who need them in poor communities affected by HIV/AIDS. This includes children who have lost parents, but also many others.
- Policies and program supporting children must build on the strength of extended families and communities.
- Family poverty and gender inequality must be tackled to improve outcomes for children affected by HIV/AIDS.

(JLICA, 2009)

## **1.5. Rationale of the Study**

Children account for half of all the new HIV infections worldwide and it is estimated that approximately four thousand children in Nepal are infected with HIV. With an estimated seventy thousand people living with HIV in Nepal, there are tremendous implications for children, whose lives are greatly affected when a parent is infected (UCAAN, 2007).

Interim constitution of Nepal-2063 has made special provisions for children of Nepal under clause 22, 5 sub-clauses are directly related to child rights. According to the national Census 2058, Nepal's total population is 23,151,423. Out of which 909,821 population are under 14 years this is 39.30% of the total population. Planned development of Nepal has been started from 1950s, there has been no separate policy regarding child care in spite of this there has been keen focus on child health since B.S. 2033. The only hospital for children is Kanti Hospital where as the no of pediatric doctors has increased to 95 (The state of children of Nepal, 2007).

In these growing concerns for children rights, none of the children should be left out. However, on the contrary, children affected with HIV/AIDS have appeared to be the least priority of the child right programs. In alteration to this, a relation between various models of care quality has been observed with economic cost.

This report is aimed at providing a primary foothold upon child right especially children affected with HIV/AIDS through a economic perspective.

## **1.6. Purpose of the study**

### **1.6.1. General Objective:**

To conduct cost-effective analysis for models of care for children affected by HIV/AIDS in Nepal.

### **1.6.2. Specific Objectives:**

- To identify the types of care and support for the children affected by HIV/AIDS in Nepal.
- To estimate the actual cost of care per child care month in each of the model.
- To establish the cost of providing a minimum standard of care per child care month in each of the model.
- To examine variations in costs between the different options of care using cost-effective analysis.

## 1.7. Operational Definitions

**Annualisation:** Process of estimating cost of an item with reference with its annual equivalent or useful life in years and a suitable discount rate (Annualisation factor) obtained from standard table.

**Care Quality:** The care that has been provided to the children during their entire length of stay at a particular child care home. It is drawn from the resources available for childcare and how they are used.

**Comparative Effectiveness:** Research that compares the clinical outcomes, effectiveness, and appropriateness of items, services, and procedures that are used to prevent, diagnose, or treat diseases, disorders, and other health conditions recovery (*Adapted from ARRA, 2009*).

**Cost-effectiveness:** Cost-effectiveness analysis (CEA) is a form of economic analyses that compares the relative expenditure (costs) and outcomes (effects) of two or more courses of action (*Adapted from Wikipedia*).

**Fixed Cost:** Cost involved in items which are bought as physical assets and often undergoes some degree of depreciation, after the day of purchase.

**Opportunity Cost:** Estimated average cost of a person that would be consumed or gained if the person was/were involved in the activity.

**OVC:** Orphan and Vulnerable children refer to those children under the age of 15 who have lost his/her biological parent both or one of them due to HIV/AIDS and now are/is currently either living with or without HIV/AIDS but is prone to stigma, discrimination and disregarded by society.

**Reference case:** One of two minimum standards or both, which are often used to compare with the actual cost.

**Semi Fixed Cost:** Cost which are generally fixed but changes in government rules and subjected to economic constraints like inflation, VAT etc.

**Variable Cost:** Cost which tends to vary over-short time period.

## 1.8. Literature Review

Literatures were searched primarily from GOOGLE for the identification and pooling of related articles, research, press releases and country stand papers. The literatures were reviewed during the entire length of study till its final drafting whereas the active or rigorous literature reviews were done between the months of February 15 to May 30.

Thereafter, the related journals were accessed through the use of HINARI access for retrieving full texts. The journals which were accessed through use of HINARI are Science Direct & Elsevier.

Biomed central also proved quite helpful, being an open access journal, article could be retrieved from there free of charge.

A total of approximately 1000 or more health economics articles, researches and books were cursorily read of which only two researches had direct resemblance with the research topic. There was no study of resemblance that contributed to the economic appraisal of children living with HIV/AIDS right in context of Nepal. In this aspect, this study is the first study of its kind in Nepal.

Of the two study, Earlier(*in terms of date*) was conducted in South Africa by Mr. Chris Desmond & Jeff Gow in the year 2001, their topic was “*Approaches to caring, essential elements for a quality service and cost-effectiveness in South Africa*” funded by UNICEF, Pretoria, South Africa and published in the science direct. Another study was conducted in Kenya by Mr. Owiti EA in the year 2004, his topic “*The care of orphans and vulnerable children in Kenya: a cost effectiveness analysis*” presented in 15<sup>th</sup> international conference of AIDS using similar methodology but different effectiveness measure.

Desmond, et.al. (2002) measured the variations in cost between the different options of care, using cost effectiveness analysis (CEA). They specifically studied the two costs associated with each site: the cost of providing care per childcare month, and the cost of providing a minimal standard of care. Whereas, Mr. Owiti, E.A. (2004) used childcare months as the effectiveness measure. The key assumption Desmond et. al.



(2002) had was that the quality of OVC care in each model varied with some providing less than minimum standard (i.e. availability of a caregiver and achievement of survival needs).

Desmond, et. al.(2002) study also considers the replication cost and their comparison with minimum standard to take quality of care in consideration whereas Mr. Owiti, E.A. (2004) analyses cost effectiveness measure; child care per month only.

Common keywords used for the literature search were:

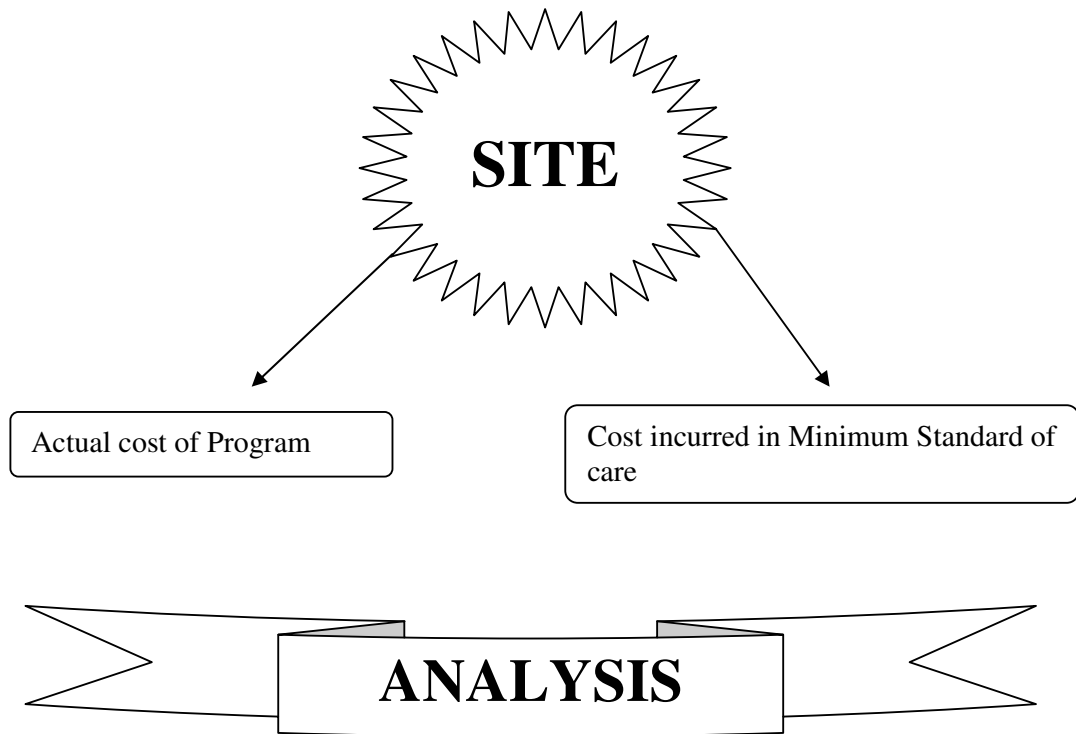
- Children+HIV+cost-effectiveness
- Models of care+children+costeffectiveness
- Cost-effectiveness+OVC
- Cost effectiveness+HIV
- Costeffectiveness+OVC+model of care

The major findings of literature review are quoted throughout the report using APA referencing standards.

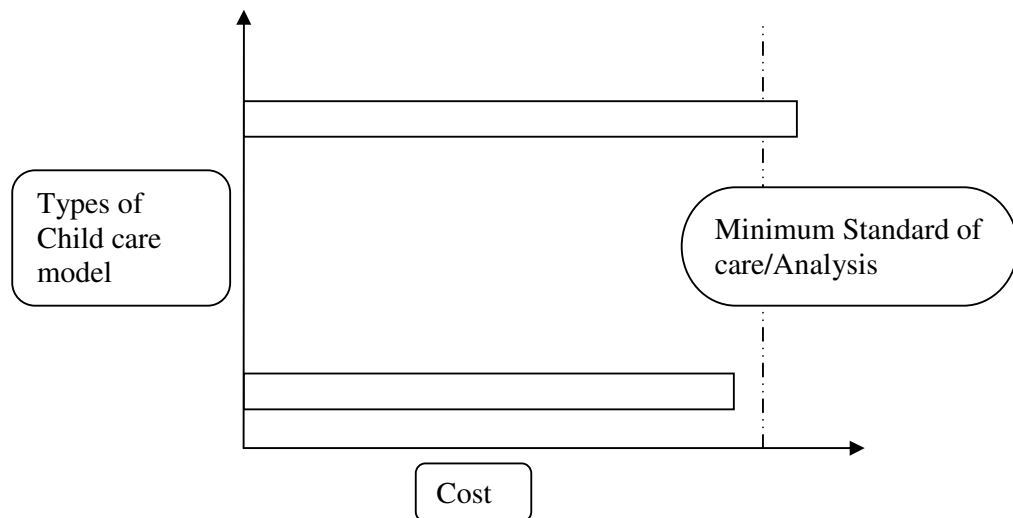
## CHAPTER II

### 2. Methodology

#### 2.1. Study Flow chart:



#### 2.2. Conceptual framework:



Phase one: Assessment of types of care and support to Orphan and Vulnerable Children.

The researcher underwent following steps,

- Series of consultative meetings with child right activist, representative of various child care homes currently dealing with children living with HIV/AIDS, including consultation of minimum standard of care.(see Annex)
- Categorization of various models of care.(see sample Specification)
- Seeking permission to conduct study in selected institution.

Phase two: Cost-effectiveness analysis

The researcher took following approach:

- Data was collected primarily from financial statement and turned them into economic costs.
- Establishment of cost for minimum standard of care.
- Carrying out cost effective analysis.

The findings of phase one and two are collated in this report.

**2.3. Study Variables:**

The study was mostly economic evaluation in nature thus the variables were mostly in economic terms. Two major variables for the study were costs and child care months.

The study variables are:

**Costs**

*Fixed costs*

*Semi Fixed costs*

*Variable costs*

*Medical Costs*

**Child care months**

#### **2.4. Study Population:**

The study took Orphan and Vulnerable Children (OVCs) of age group 0-14 in context of HIV/AIDS.

#### **2.5. Study Area:**

The study area was child care models that were dealing with children living with HIV/AIDS. The research site was chosen from all over Nepal (both rural and urban).

#### **2.6. Study Duration:**

The active study duration was of June 1- August 25.

#### **2.7. Study Design:**

The study design was exploratory in design.

#### **2.8. Sampling Process:**

The sampling process was convenient sampling.

#### **2.9. Sample size:**

The sample size was at least one site for each model of care that exists in Nepal at the time of the study, should be functional for at least one year (*see sample specification*).

## **2.10. Sample specification**

### *Inclusion criteria*

- The child care model should be providing or supporting child care to at least one child with HIV/AIDS.
- Services should be operational for at least one year before the study.
- Sites to reflect comprehensive services (including prevention, early intervention, statutory services and continuum of care).
- Sites selection to represent rural and urban settings.
- Sites to represent formal structures and informal structures.

### *Exclusion criteria*

- Child care model which does not address care of children living with HIV/AIDS.
- Institutions which do not want to share their costs information for the study.

## **2.11. Data collection techniques**

Data was collected by using informal interpersonal communication, and sometimes few semi-structured questions and observational checklist.

## **2.12. Data Processing:**

Financial costs were processed into economic costs for analysis using simple economic tools like opportunity cost, discounting, and annualization.

Data was processed using Microsoft Excel<sup>®</sup> in case of comparison of various model of care; whereas in other cases simple calculator was used.

The formula was used find the present value of fixed cost items

$$P_t = P_o (1+r)^t$$

Where,

$P_t$ : Present time price

$P_o$ : Purchase price

r: Discount rate

t: Useful time

After obtaining a present time price, the present time price was divided by the annualization factor.

#### For FNC, MSPN

Fixed assets of MSPN were greater than other models of care. Items were categorized under two heads automobiles and other items including bicycle. The present value of automobile was calculated using the above formula with 3 useful life years and at a discounting rate of 7%. Whereas for others items including bicycle the present value was calculated using the above formula with 3 useful life years and at a discounting rate of 5%. For both of the cases, corresponding values were divided by the annualization factor obtained from the standard table.

The total values were calculated per month per child basis.

#### For Keta-keeti Ashram

Fixed cost were subjected for 5% discount rates for 2 useful life years as there was no owned automobile of the Ashram itself, thus no separate discounting had to be done.

The total values were calculated per month per child basis.

#### For Aakura

Fixed costs were also subjected to 5% discounting for 2 useful life years there was no owned automobile hence separate discounting was omitted.

The total values were calculated per month per child basis.

### **2.13. Data analysis:**

Data from financial statements were turned into economic costs. Social costs (Opportunity cost) were also calculated. Costs were determined for minimum standards of care for OVC using National Poverty Information/Household budget survey.

The most obvious measure of effectiveness would be the number of months or years each child is cared for, multiplied by the number of children. However, this would not take into account the quality of the care that is provided by each model of care. Since, the quality of the care varies substantially between models (with some not even providing a minimum standard of care) an analysis of cost per childcare month would therefore misinterpret the situation.

The problem was overcome by measuring both the actual costs of the programs and the cost that would be incurred in providing the minimum standard of care. The minimum standard of care was adapted from the minimum standard of care for conduction of child care home, 2060 B.S., Central Child Welfare Board.

### **2.14. Ethical Considerations:**

Children's names are not used in the entire dissertation report; if necessary while analyzing with anecdote; names are aliased. No institutions, child care home, community or individual were compelled to give required information other than related to dissertation or for what so ever causes; a verbal consent for use of information or data, was sought prior to collection and administration, written consent was sought only in case of Highly classified information (*if any*).

## **2.15. Minimum Standard Estimation**

The minimum standard guideline for operating child care homes has been approved by the cabinet of ministers dated 2060 B.S. which formed a basis for costing of minimum standard of care.

For the practicality, average values have been used when and wherever the authentic estimates by the government is not available. However, this should not be construed with understanding as of Minimum standard as an average value. The average values are average of best available options and have been used accordingly; therefore this should not misinterpret the situation.

The child care home must have enough resources to run for 3 years according to the government standards so the useful life time of 3 years has been used. Similarly, a minimum of 10 children should be supported by the child care with a minimum of 4 staffs.

Detail of minimum standard can be found at the Annex section.

### **2.15.1. Safe and secure housing**

The minimum standard guideline for child home of the CCWB was used. An engineer working under the Ministry of Local Development was requested to construct a cost estimate for the safe and secure housing using CCWB minimum standards.

The land price was an averaged value obtained from Budhanilkantha VDC. The unit construction rate was 10% inflation adjusted, 10 % inflation doesn't reflect the current overall inflation rate but 10% inflation was an accepted rate for calculation in most market setting and government organisation including ministry itself.

The detail calculation of the cost is included in the annex section of this report.



### **2.15.2. Basic Consumption**

Basic consumption includes consumption of food, clothing and foot wear; the school uniform should also be understood to be included in this consumption figure.

The survey findings of Central Bank of Nepal: “Nepal Rastra Bank” was extrapolated for this purpose. The survey report was entitled “Household budget survey, Nepal. Mid-November 2005 - Mid November 2006”

For a robust calculation a mix of economic calculation along with use of unit-proportionate method was used to find the individual consumption of a child.

The consumption equivalency scale was the first choice for the use of estimating consumption pattern but since the consumption values were derived from a secondary source, the source hold little information by which the consumption estimates could be derived in relation with children only.

Though, consumption equivalency scale has not been used but a unit proportionate method has been adopted which is the next best method to estimate for consumption. There is also a notion that though child consume less than adults, the cost of child food often exceeds the cost of adult food available in the market, but the researcher doesn't subscribe to any of those thoughts and has chosen unit proportionate method as the best way for consumption estimates over insufficiency of child consumption equivalency for Nepal.

For a more detail calculation please refer to the Annex section of this report.

### **2.15.3. Care-givers time**

Every child should get 100% supervision if not in school and after school if they are in school. In this regard, calculation of the care-givers time was done.

Time going to school was differentiated from the time not going school and holidays. For this an average estimate of public holidays, school vacations was used, the need

of average sick leave of child at school would also be estimated but due to the lack of proper information it was imperative that we rely on the holidays estimate to cover that sick leave.

Now, the problem was in calculation of opportunity cost of the care-givers time. As the opportunity cost concept implies to gain an total of societal cost estimate due to many practical problems this was not possible, for e.g.: an opportunity cost of an individual working at a child care home would earn NRs. 10,000 per month whereas, equally qualified individual working at a reputed INGO or in other business would earn a different amount practical problems posing threat to yield an exact calculation of opportunity cost were always present. Thus, to overcome this kind of problem, a best opportunity cost of care-givers time would be to calculate upon the average pay scale of the organization they are working at.

For more meticulous look, the calculation of opportunity cost: *see Annex of this report.*

#### **2.15.4. Access to Services**

Here the services refer to the health and education only.

##### *Access to health Services*

Access to health services was quite difficult, since the cost of essential health services were provided free of cost including ARV. But, in reality children were still paying for the health services, in simplest of cases like skin infection the health workers would not even bother turning to them until and unless cash was flashed. Despite this at most of the times children would present with common disease but of complex magnitude, in order of proper management of this disease cost involved was inevitable and most of the time invariably a larger amount of money was involved.

For the estimation of this amount was still unrecorded but from financial records it was revealed that some portion of money was dedicated for medical expenses at each

model of care. Some model dedicated a larger amount and others dedicated a smaller amount to get a reasonable amount, an average value was taken.

For more detail calculation see annex section of this document.

### Access to Education

The constitution of Nepal recognises education as a fundamental right. Education fee upto class has been levied off by the government including the books. Though, a small amount of exam fee has to be paid by the students/parent. At most of the times the supply of book was not consistent and enough so a student has to pay for books as well. For classes above five an amount has to be paid until class ten. The children considered under this study were presumably the age group attending up to class ten or SLC level. Travel cost to school has also been exempted as government is keen on expanding the reach of education for every child furthermore most part of the country is still aloof from the roadways, thus students travel on foot and calculation of this distance time varied hugely.

As, a finding it was also found that none of the child care model sent their children to the government school. Most would sent their children to boarding school thus a estimate of boarding school fee structure had to be done but this again created a practical problem; the private school fees structure varied at much more broader spectrum of which an estimate of average value was difficult to obtain. Thus, for practicality purpose; Fee structure of government school was used. They were turned into cost for ten years and then averaged for a year.

Details of estimate calculation are provided at the annex section.

## **2.16. Limitations**

For actual estimation of economic cost was obscured by number of factors major was donated items the quantity of donated items were massive but not always from one source but from multiple source over considerable length of time, this was not properly recorded. Thus, it was difficult to calculate an exact estimate of the donated items. However, it is understood that donated items also have contributed in delivery of care to the children and should not be overlooked.

In the pursuit of evaluating the model of care for children affected by HIV/AIDS in Nepal; it was an irony that none of the child care home run by government looked after OVCs. Therefore, the cost of providing care for OVCs at the government expense and quality standards could not be assessed.

This report aims at evaluating the care model in realm of care quality therefore the comparator minimum standard has been used this has created a dilemma in use of a cost effectiveness ratio. Caveats are suggested in the extrapolation of the study.

## **CHAPTER III**

### **3. Case Studies**

This chapter provides cost estimation for 3 models of care for children. During the study it was found that most of the care model existing in Nepal not only provided home for the children but in most of the cases the care model would also contain the cost of at least one accompanier of a child (often mother).

Cost estimation is based upon per child and per month. Annualisation of items has been done to yield a current value of fixed costs. Opportunity cost of volunteer working in care home has also been calculated.

All of the care homes visited in the study were unsatisfied with the government, the government has not been providing with any grants or subsidy to the care home.

#### **3.1. Friends of Needy Children, Manisha Singh Punerjeevan Niwas (MSPN):**

##### **3.1.1. Introduction**

MSPN was selected as a representative of Comprehensive institutional model of care, was categorized as special form of home based care and support. The institution also holds excellent performance records in restoring and maintaining of nutrition of children under the care of institution. The organization is located at Tikhedeval, Lalitpur covering an area approximately 3 ropanies.

As a part of Friends of Needy Children (FNC) a non-governmental organization, MSPN was established in 2006 as a treatment, care and educational centre which focuses on the issues for children living with HIV and AIDS by providing a transitional home for 18 children and their caregivers.

The aim of MSPN is to provide treatment; care and support to HIV infected children to enhance, prolong and fulfill their lives and to provide knowledge and skill to the child's caregivers in order to care for them when they return home after discharge.

Children treated at the center are 10 years of age and younger who can stay up to a maximum of 4 months. Ten children as of 12 June 2009 were currently living in the home with their accompanier.

A care giver also stays at the center with the child and assists in the child's care which has been considered as essential so that the caretaker can learn the technique to ensure proper care even after the discharge of child. Food, lodging and medical treatment are provided for the child. While the caregiver may also be infected with the HIV virus the center provides emergency treatment as well as lodging and food to them.

MSPN services are accustomed to deliver holistic care. Some of the highlights of the care are:

#### Medical support

- Weekly health check-ups by pediatric physician.
- 24-hour care by experienced nursing staff.
- Anti-Retroviral (ARV) treatment.
- 24-Hour ambulance service.

#### Nutrition Support

- Nutritious food prepared according to the specified diet created by a dietician, focusing on children's micronutrient and caloric requirements.
- Direct and continuous monitoring of the calorie intake by nurses.
- Close monitoring of food preparation and calories by dietician.
- Instruction for caregivers about the importance and preparation of healthy food for their children.

#### Education Support

- Psycho-social counseling to manage the stigma and discrimination of HIV and to improve self-esteem
- Literacy class.

- Educational preparation for caregivers to understand HIV/AIDS; to manage and monitor medication administration; to improve hygiene practices; and to prevent opportunistic infections when the child returns home.

#### Extra Activities/Socialization

- Teaching in art and craft
- Frequent outings
- Daily physical activity
- Watching documentaries, films and movies for educational entertainment

MSPN has helped over 95 children since its inception in 2006. Children and caregivers gain not only the physical benefits from their stay at MSPN but they also are able to learn to manage their disease to live a full and meaningful life.

### 3.1.2. Findings:

Table 1: Results of CEA for FNC, MSPN

	NRs. per month per child
Cost per month for care in comprehensive care model settings	42,602.06
Adjustment for minimum standard(with house rent)	-33,935.09
Cost per month for minimum standard (with house rent)	8,666.97
Adjustment for minimum standard(with house ownership)	+42,319.65
Cost per month for minimum standard (with house ownership)	84,921.71



Table 2: Cost by fixed, Semi-fixed and Variable components for FNC, MSPN.

	NRs. Per month per child	Percentage of total costs
Fixed Costs		
Solar	321.94	
Telephone set	3.54	
Ambulance	6,224.81	
UPS	24.79	
Printer	63.77	16.70
Bicycle	42.51	
Computer	283.42	
Television	77.95	
Kitchenwares	70.85	
<b>Total fixed cost</b>	<b>7113.58</b>	
Semi-fixed cost		
House Rent	3000.0	
Funeral expenses	8.33	
Salaries and wages	11,607.14	
Utilities( <i>water, electricity, telephone charges</i> )	666.67	
Education	233.33	55.39
Job Skill Training	166.67	
Communication	480.0	
Repair Maintenance	1050.0	
Refreshment & retreat	83.33	
Supplies ( <i>L.P.G gas, dettols, phenol, etc</i> )	2041.67	
Printing & Publication	100.0	
Books & Periodicals	41.67	
Rental Charges	3000.0	
Legal Consultancy	1116.67	
<b>Total Semi fixed Cost</b>	<b>23595.48</b>	
Variable costs		
Clothing	1,583.33	
Fooding	7,218.0	
Miscellaneous	1,116.67	23.57
Office Supplies	125.0	
<b>Total Variable Cost</b>	<b>10043</b>	
Medical costs	1850.0	4.34
<b>Total</b>	<b>42,602.06</b>	<b>100</b>

## **3.2. Navakiran plus, Keta-kefi Ashram**

### **3.2.1. Introduction**

Keta-kefi ashram is a children center run by Navakiran plus. It was started with 30 children in January 1, 2007. Its main focus is to prevent, care and support Orphan and Vulnerable children. This child care home was the nearest representative of home based care and support.

The ashram is home to 45 children as of June 2009. Most of the children have already started antiretroviral therapy. The Ashram is acting like a center where referred children are kept for further care, treatment and support. These children come from different parts of the country most of them are from Far-west region of Nepal.

Navakiran plus has good network of its affiliate organizations at the regional, district and community level due to which many families and organization have also referred their children to this institution. Altogether of 7 staffs are working here as of June 2009. A doctor is also scheduled to visit the center every week.

Any children prior to admission to the Ashram undergoes personal hygiene check-up assisted by a staff nurse or a on-duty care-taker then is followed by clinical diagnosis by a doctor or a staff nurse. The case report is made based upon the assessment; followed by the intensive treatment/care regimen as devised by the doctor. The students upon acceptable level of health (*often determined by CD4 count and appearance*) are allowed to admit in a school run by Punarbal (*an NGO which runs school for OVCs*).

In earlier the students were admitted to a nearby private boarding school but due to stigma, the parents of other students protested and thus the organization joined hands with Punarbal to provide education for OVCs. Now, Punarbal is not only taking care of education of children but also taking care of transportation, lunches, health and career of students during the school.

### 3.2.2. Findings:

Table 3: Results of CEA for Navakiran plus, Keta-keeti Ashram

	NRs. per month per child
Cost per month for care in institutional care model settings	9,269.52
Adjustment for minimum standard(with house rent)	-54.08
Cost per month for minimum standard (with house rent)	9,215.44
Adjustment for minimum standard(with house ownership)	+75,700.66
Cost per month for minimum standard (with house ownership)	84,970.18

Table 4: Cost by fixed, semi-fixed and Variable components for Keta-keeti Ashram.

	NRs. Per month per child	Percentage of total costs
Fixed Costs		
Furnishing	54.91	
Utensils	14.83	2.89
Computer	153.76	
Television	43.93	
<b>Total fixed cost</b>	<b>267.43</b>	
Semi-fixed cost		
House Rent	777.77	
Transportation	22.22	
Funeral expenses	111.11	
Salaries and wages	1549.34	52.16
Utilities ( <i>water, electricity, telephone charges</i> )	333.33	
Education	2000	
Dashain, Tihar and Recreational	41.66	
<b>Total semi-fixed Cost</b>	<b>4835.43</b>	
Variable costs		
Clothing	166.66	
Provisions (including fooding)	3000	34.16
<b>Total variable costs</b>	<b>3166.66</b>	
Medical costs	1000	10.79
<b>Total</b>	<b>9269.52</b>	100

### **3.3. Aakura ekata taaha sangkramit mahila samuha (Aakura - single and infected women's Group)**

#### **3.3.1. Introduction**

Aakura was established in 2007 as resolution of a group meeting of 45 single women. The group had envisioned an ambitious target of proving that people living with HIV/AIDS can live and work normally and also become independent. The only way of proving was to live the dream.

The group rented 30 ropani of land at Pokhara, Leknath-9, Saldada (*near the bank of begnas lake*) for 10 years at 10% per year which they had considered to be a suitable place for growing vegetables , grains and some fruits, rearing goats, fishing and even running a tourist boat at the lake itself. The underlying assumption was these activities could generate enough money to support the members living in the house. The group has a straw house which is home to eleven people of which four are children (aged from 4 years – 8 years), three are adult male and four are adult women.

The group had envisioned income-generation activities would give them the required leverage for recognition and financial support from international and national donor organization.

To the contrary, the group has faced serious challenges like their children being scorned publicly, denied access to public meeting places and even in most cases being not talked to. The most worse of them was their product was not even purchased in the market due to the stigma in the local people. This posed serious risk to the sustainability of the group.

They had approached many organizations for financial help but many would only agree verbally but not in action. The group shares a harsh experience with a senior NCASC staff that was in-position of granting funds but gave a stark remark regarding his personal property when asked for financial help. The group then never approached the NCASC. Help from other reputed organization has not yet arrived but local bank staffs and journalists who have heard the ordeal of the group (at May 2009) have donated some money and materials.

New placement of children in this group is not by referrals but of personal communication with the group members. This is largely due to the fact that the group operates in very small budget.

In May 2009, the group's got nation-wide attention not because of their work but because of a controversial issue: expulsion of three students from a locale private boarding school due to much protest of the parent of other children studying at the school. The three children were later taken to Navakiran's Keta-keti Ashram, Kathmandu for further education.

The story of this group is not of much of success but much of an on-going struggle between vision of people living with HIV/AIDS and the government. This model of care is found to be the only community based care model in Nepal, unfortunately which is also at a state of being closed due to bankruptcy. The home lacks sufficient ventilation; the beds are below the standard.

### 3.3.2. Findings

Table 5: Results of CEA for Aakura

	NRs. per month per child
Cost per month for care in Community care model settings	6,763.44
Adjustment for minimum standard (with house rent)	-1,361.27
Cost per month for minimum standard (with house rent)	5,402.17
Adjustment for minimum standard (with house ownership)	+77,651.47
Cost per month for minimum standard (with house ownership)	84,414.91

Table 6: Cost by fixed, semi-fixed and Variable components for Aakura.

	NRs per month per child	Percentage of total costs
Fixed Costs		
Goat Shed (Donation)	123.55	
Utensils	3.71	
Radio	6.18	1.97
<b>Total fixed cost</b>	<b>133.44</b>	
Semi-fixed cost		
House Rent	605	
Boat Rent	25	13.01
Transportation	250	
<b>Total Semi-fixed cost</b>	<b>880</b>	
Variable costs		
Clothing	N/A	
Fooding	3750	55.45
<b>Total variable cost</b>	<b>3750</b>	
Medical costs (OIs)	2000	29.57
<b>Total</b>	<b>6763.44</b>	<b>100</b>

## CHAPTER IV

### 4. Discussions

The models of care as suggestive of the available literature were of six types though only three models of care were found to exist in context of Nepal. Informal fostering/non-statutory care was also heard to be of existence in some remote parts of country worst affected by HIV/AIDS but due to societal stigma the contact person seemed elusive to personal communication and also reluctant to provide information, thus evaluation of informal fostering could not be carried out.

The models of care under evaluation covered an improvised version of home based care that would be comprehensive child care, a regular version of home based care with formal education system and a community based care model.

The model of care in Nepal had no support or recognition from the government of Nepal but all of them had huge appreciation from the people living with HIV/AIDS and institutions working in field of HIV/AIDS at Nepal.

The child care models were not an exact resemblance with the theoretical care model but hold significant contextualization at the point of delivery. The institution were run by a parent NGO who has been primarily working in the care of treatment and support of adults but due to the grave situation it was compelling for them to provide special care for children, this holds true for all the child care models except for Aakura-community based care model which was formed by the group of determined single women; this might also be a reason for the economic hardship the group has been facing.

The cost variation is evident from the findings. But what we really need to focus on is at the reasons behind this increase and the most effective one. The table below summarizes the result of the study.



Table 7: CEA of three models of care

<b>Model of care</b>	<b>Site</b>	<b>NRs. Per child per month</b>	<b>NRs. Per minimum standard child per month(with house rent)</b>	<b>NRs. Per minimum standard child per month(with house owned)</b>
Comprehensive Child care model	Friends of Needy Children, Manisha Singh Punerjeevan Niwas (MSPN)	42,602.06	8,666.97	84,921.71
Institutional child care model	Navakiran plus, Keta- keti Ashram	9,269.52	9,215.44	84,970.18
Community based child care model	Aakura ekata taaha sangkramit mahila samuha (Aakura - single and infected women's Group)	8,231.26*	5,402.17	84,414.91

*\*fails to meet minimum standard of care.*

The results suggest that the most cost-effective way of caring for children is through community based organizations here as “Aakura”. This is what the results suggests but further probing needs to be done addressing the quality of care across the three models of care spectrum.

The comparator “minimum standard” had also to be standardized in two distinct ways as most of the child care models were using houses and lands at rent. This was done to construct a more robust reference case otherwise the comparisons could yield conclusion that none of care models of Nepal met its minimum standard guidelines as set by the Central Child Welfare Board, thus, impeding any further discussions.

Quality of care must be at heart of care models, in the study each model had their own definition of quality care; ranging from physical infrastructures to high staff to child ratios, most considered quality as high standard of living covering huge investment at physical infrastructures. The government has already enacted “Minimum standard for conduction and management of child home, 2060” (*see Annex*) in adjunct with the former minimum standard child welfare board has also drafted “Minimum standard working guidelines for HIV/AIDS infected children care home, 2065” (*see Annex*).

The later guideline in discussion has produced much debate as the reinstating of minimum standard as maximum achievable limit. Activist working in the field have often responded as if the stated minimum standard are to be achieved; state should provide some grant or subsidy for such child care homes or should not talk about such pansy.

Costs are significantly higher at more structural modal of care. However we need to consider the fact; at institutional level of care a child is getting proper nutrition, education and more meticulous observation at his/her health. The only concern for children at such model of care is of socialization, which is hugely overcome by the community based care models.

Community based care in case of Nepal needs to be supported and given special attention as the income generation activities as soon as it starts getting pace it is certain to get self-sufficient thus making the initial investment cost-effective. the only community based care model in Nepal “Aakura” is such an exemplary example, if the investment for this model is increased substantially at the beginning to support its income generation activities, the model will in a period of time be able to sustain itself.

The study also found three possible avenue of support to the child care models: government grants/ subsidy (*not currently available*), income generation projects, assistance from development partners.

On the contrary, the study is not only analytical of the most cost-effective measure but also understands the importance of institutional care as it is often the referral site for complex cases, most of the time the institutional care provides home to those children who have nowhere else to go, children who need special treatment regarding nutrition and management and often for treatment of other illness.

The government unit CCWB is held responsible for the controlling, regulating mechanism of child care home of all bases or models. In a recent meeting called by CCWB itself, representative from various child care homes which were looking after OVCs condemned about the government standard as unrealistic but the government officials were adamant regarding their decision was a universal standard whereas, the child care homes representatives were complaining to make to more relevant to Nepal's economic standard rather than an utopian standard.

The cost estimate result is also suggestive of the high minimum standard for child care homes which has not been met by any of the child care homes at Nepal still due to lack of sufficient law instrument they were running without any interference from the government.

The government domain of monitoring only involved small scales of child care homes and most of the times only government child care homes which still did not have any children with HIV/AIDS. Thus, government still needs to improvise and strengthen its presence to the children's of Nepal.

The minimum guideline still needs revision as the minimum guidelines are appropriate but not sufficient in addressing all the care required by the children in relation to HIV/AIDS. Many of the child care homes were still unknown about the existence of such standard and registration procedures.

Most of the child care models were operating on the self-realization of child rights and would be networking with institutions working with and for people living with HIV/AIDS.

The child care models still needs to be expanded to address most of the needs of the children. The government should still be involved at least in a manner that allows government to be more responsible regarding the rights and care of OVCs of Nepal. The findings of this report would also step forward in recommending the NCASC in establishment of a child care wing which should be held responsible for child care patterns and practices.

This differences ranges from one spectrum of care to another and has been adjusted likewise to yield a comparative value for analysis. The quality of care, presence of physical assets and overheads costs, existing market prices can also be held responsible for these variations.

There have been significant variations across the models of care yet Caveats need to be taken while interpreting these differences. The differences in services offered, quality of care provided with other coupling factors that promote or help in seamless delivery the care services extended by the organization are responsible for this variation. Some of them are listed in table 8:

Table 8: Model of care ordered by increasing cost and reasons for differences of cost across the model of care.

Sites	NRs. Per minimum standard child per month(with house rent)	Increase	NRs. Per minimum standard child per month(with house owned)	Increase	Reason for increase
Aakura	5,402.17		84,414.91		
Manisha Singh Punerjeevan Niwas (MSPN)	8,666.97	+3264.8	84,921.71	+506.8	<ul style="list-style-type: none"> <li>• Full time supervision</li> <li>• Nutrition is focused</li> <li>• Provision of emergency care</li> <li>• Care of sick children</li> <li>• Cost of child's accompanies also covered.</li> </ul>
Keta-keti Ashram	9,215.44	+548.47	84,970.18	+48.47	<ul style="list-style-type: none"> <li>• Care for sick children</li> <li>• Education is fully covered</li> <li>• High overhead</li> <li>• Process for identification</li> <li>• Process for placement</li> </ul>

MSPN and Keta-keti Ashram differ in only one aspect that Keta-keti Ashram provides education on formal structure. This is not only the difference between these two models of care but also the primary reasons for variation in cost.

As well as having special variation the models have a proven track-record in providing care for children. Aakura is popular among women/mothers and children affected with HIV/AIDS at western and far-western region of the country. They especially consider this home because of its simple approach to get admission, family like environment, normal household activities like agriculture and animal husbandry.

*Resources from government/ grants*

This situation highlights the difficulties in gaining access to resources necessary in childcare and how the most cost effective models are not viable ways of meeting the basic needs of children unless these difficulties of access are removed. For example: community based care group has been found as most cost effective but they often lack the technical knowledge required to gain access to institutional financial aids; for this they have to rely on some other formal organization which often cut their own administrative cost before handing over of the funds.

Government needs to reform and reaffirm its position towards the child care. Grants and subsidies needs to be provided to the institutions, a state provision of grants and subsidies must be approved from the cabinet of ministers for the welfare for OVC.

The findings of the study bear quite resemblance with the study from South Africa and Kenya in the aspect of the most cost-effective measure for providing care is the community based care model.

## CHAPTER V

### 5. Conclusions and Recommendations

#### 5.1. Conclusions

Children have the right to be cared, despite their HIV status. Of the many conventions endorsed by the nation, child right is also one. This report not only aims on advocating child right but also steps forward with the most efficient way to protect this right.

The child care models though are many in number for orphan children but not much for children with HIV/AIDS or for orphan and vulnerable children. The existing models of care range from community based care model to improvised form of home based care model or comprehensive care model.

Minimum standard should be understood not as a top-notch standard, where all child care models are failing to meet this standard but as a standard of which when met creates a level where children have as minimum of opportunities level of those of children living with their parents without HIV/AIDS. It's about equality in right and access to rightfully respected living.

Cost also varies according to the model of care with the most cost effective to be community based care (with income generation activities). It is also essential to view that though community based care is the most cost effective child care model it may not always be sufficient in addressing all the needs of children. Therefore, it is always important to keep space for other child care models which provide or specialize in particular child care modes.

Though the community based care are clearly the most cost-effective models of care than other existing models of care it is also essential to understand; continuum of care is often missed by these models so these models still needs to improvise in order to include the continuum of care for children.

## 5.2. Recommendations

For clear understanding of the implication of the given recommendations; recommendations have been stratified into two stratum:

### For Community/NGO/INGO/Development partner

Create a supportive environment where people with and without can work together or least lead a satisfying life.

Create a networking system that is not entirely new but builds on the success of previous networks for identification and placement of child in relevant care models.

Continue and enhance the activities co-ordination between the various child care models.

Capacity building programs should be designed to meet the requirement of child care homes and run at need basis.

Though prevention program has its own implication it is also necessary to not overlook the dire necessity of treatment and support programs.

For the donors it is essential to assess all the avenue of investment of donations and harmonize the aid across the spectrum of care.

Donors should be able create a system of their own which independently identifies and recommends the parent organization about the existing child care models that needs help both financially and otherwise.

Universal access may be the buzz word for treatment services but is also equally needed to address the career and best interest development of the child. In this case the universal access for opportunity!



### For Government/Policy Implications

Create and operationalise the framework which addresses the practical and other administrative issues that are common and/or counteracting with existing national system.

Though HIV/AIDS has been mainstreamed to some extent in development agendas it is also required to establish a grant or subsidy system which provides financial and legal backup, on need basis, for the care models.

The treatment cost of other illness has been increasing so, now is the best time to incorporate ARV treatment regimen and other HIV treatment guideline into elements of PHC with giving continuance to “free essential health care”.

Regular monitoring is needed instead of government passive criticism regarding the child care models for collection of money.

Find it, report it and take corrective action strategy is needed to be adopted by the government to make the child care models more systematized and accountable to national government.

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# **ANNEXURE**

## **ANNEX A**

Narrative Guidelines

Observational Checklist

Guidelines for classifying various models of care

## **ANNEX B**

Cost data for Navakiran plus-Keta-keti Ashram

Cost data for FNC-MSPN

Cost data for Aakura

## **ANNEX C**

Minimum standard estimation

List of person consulted

Conversion table for Land measurements

## **ANNEX A**

### **Narrative Guidelines**

#### **Brief introduction**

- When was the home established?
- How many children have been already cared or are at time, getting care?
- How much area does it occupy?
- Is the building owned?

#### **Process**

- Any specific organization policies in granting/admitting a child for care?
- What methods (including statutory) process are followed in admitting a child to your home?
- What types of care does a child receive when he/she admits to your care home?
- Is the care method varied upon entry and upon decision of admission?
- How is a child's length of stay determined?

#### **Support**

- Does the state provide you with any grants or subsidies?

#### **Staffing**

- How many staffs are currently working in your organization?
- What categories of staff you have?
- Average salary scale by cadre (at least caregiver)?
- Are there any doctors in your organization (full/partial time)?

## **Observational Checklist**

1. Involvement of community member for caring.
2. Less or no organizational structure.
3. Children placed are external to welfare system.
  
4. Focuses on various aspect of care.
5. Income generation programs.
6. OVCs stay in their communities of origin.
7. Variety of organizational structure exists.
  
8. Provide services to household of people living with HIV/AIDS.
9. Can have community/institutional base.
10. No minimum standard of training for workers.
11. Often registered as NGOs.
  
12. Provides housing that is often outside child's community of origin.
13. Homes not registered and so not under supervision of government.
  
14. A person having legal papers concerning to perform the role of surrogate parent and take care.
  
15. Traditional children's home.
16. Legal, formal institution that functions with government support and supervision.
17. Has organization structure.
18. Government directly involved in financial and institutional management.

**Guidelines for classifying various models of care.**

*(Depending upon the observational checklist filled above orphan home are classified on basis on most relevant care type)*

1-3: Informal fostering/Non-statutory fostering

4-7: Community based support

8-11: Home based care and Support

12-13: Unregistered residential care

14: Statutory adoption and foster care

15-18: Statutory residential care

*In case of multiple checking/matching, the category with most matches will be categorized accordingly.*



## ANNEX B

### Cost Data for Navakiran Plus-Keta-kei Ashram

	Given Values	$P_o(1+r)^t +$ Annualisation	Per month	Per month perchild	Percentage of total costs
Fixed Costs					
Furnishing	50,000	29653.04	2471.08	54.91	2.89
Utensils	13,500	8006.3206	667.19	14.83	
Computer	1,40,000	83028.51	6919.04	153.76	
Television	40,000	23722.43	1976.87	43.93	
Total fixed cost				267.43	
Semi-fixed cost					
House Rent	35,000	777.77			52.16
Transportation	1000	22.22			
Funeral expenses	5000	111.11			
Salaries and wages	56,000+2vol.	1549.34			
Utilities(water, electricity, telephone charges)	15,000	333.33			
Education	2000	2000			
Dashain, Tihar and Recreational	500	41.66		4835.43	
Total semi-fixed Cost					
Variable costs					
Clothing		166.66			34.16
Provisions (including fooding)		3000			
				3166.66	
Medical costs		1000		1000	10.79
Total		1,39,986.49		9269.52	100

## Cost data for FNC, MSPN

	NRS per year	$P_0(1+r)^t +$ Annualisation	NRS per month	Per month per child	Percentage of total costs
<b>Fixed Costs</b>					
Solar	1,15,000	48889.783	3519.4026	321.94	16.70
Telephone set	1,000	425.12853	35.427378	3.54	
Ambulance	16,00,000	7,46,977.44	62,248.12	6,224.81	
UPS	7000	2975.8997	247.99164	24.79	
Printer	18,000	7652.3136	637.6928	63.77	
Bicycle	12,000	5,101.54	425.13	42.51	
Computer	80,000	34010.283	2834.1903	283.42	
Television	22,000	9352.8278	779.40232	77.95	
Kitchenwares	20,000	8502.5707	708.54756	70.85	
<b>Total fixed cost</b>				<b>7,113.58</b>	
<b>Semi-fixed cost</b>					
House Rent	3,60,000	13,92,857.1	30,000	3000.0	55.39
Funeral expenses	1000		83.333	8.33	
Salaries and wages	13,00,000		1,16,071.43	11607.14	
Utilities(water, electricity,telephone charges)	80,000		6666.6667	666.67	
Education	28,000		2333.3333	233.33	
Job Skill Training	20,000		1666.6667	166.67	
Communication	57,600		4800	480.0	
Repair Maintenance	1,26,000		10500	1050.0	
Refreshment & retreat	10,000		833.33333	83.33	
Supplies(lpg gas, dettols,phenol,etc)	2,45,000		20416.667	2041.67	
Printing & Publication	12,000	1000	100.0		
Books & Periodicals	5,000	416.66667	41.67		
Rental Charges	3,60,000	30000	3000.0		
Legal Consultancy	1,34,000	11166.667	1116.67		
<b>Total Semi fixed Cost</b>				<b>23,595.48</b>	
<b>Variable costs</b>					
Clothing	190000		15,833.333	1,583.33	23.57
Fooding	8,66,160		72,180	7,218.0	
Miscellaneous	1,34,000		11,166.667	1,116.67	
Office Supplies	15,000		1,250	125.0	
				<b>10,043</b>	
<b>Medical costs</b>	2,22,000		18500	1,850.0	4.34
<b>Total</b>				42,602.06	100

## Cost data for Aakura

	NRs per year	$P_0(1+r)^t +$ Annualisation	Per month	NRs per month per child	Percentage of total costs
<b>Fixed Costs</b>					<b>1.97</b>
Goat Shed (Donation)	10,000	5930.61	494.22	123.55	
Utensils	300	177.92	14.83	3.71	
Radio	500	296.53	24.71	6.18	
<b>Total fixed cost</b>				<b>133.44</b>	
<b>Semi-fixed cost</b>					13.01
House Rent	29,040			605	
Boat Rent	100			25	
Transportation	1000			250	
<b>Total Semi-fixed cost</b>				<b>880</b>	
<b>Variable costs</b>					55.45
Clothing	N/A			N/A	
Fooding	15,000			3,750	
<b>Total variable cost</b>				<b>3,750</b>	
Medical costs (OIs)	8,000			2,000	29.57
<b>Total</b>				<b>6,763.44</b>	<b>100</b>

## ANNEX C

### Safe and Secure Housing:

For safe and secure Housing according to Central Child Welfare Board's standard:

Description	Minimum no. of Rooms	Area required	Total Area (Sq. Ft.)
Room	N/A; 1	(10 x 30)	300
Toilet	2	2x(4x4)	32
Bathroom	2	2x(5x6)	60
Kitchen	1	1x(10x12)	120
Dining	1	1x(14x20)	280
Study Room	1	1x(14x20)	280
Consultation/First Aid	1	1x(14x16)	224
Waiting Room	1	1x(10x12)	120
<b>Total</b>			<b>1,416</b>

**Total Cost for construction of house:** Area for house construction x Unit cost for construction

$$1416 \times 968^*$$

$$1,370,688$$

**Total Area:** Construction Area x Open Space

$$1 \text{ Ropani}$$

**Grand Total Cost:** Cost of Land + Total cost for construction of House

$$16,400,000 + 1,370,688$$

$$\text{NRs.17,770,688}$$

\* Inflation adjusted unit construction rate for Fiscal Year 2005/06 (estimates made available by govt. employed engineer).

**For estimation of present value of housing:** *(10% for 3 years, government standards)*

17,770,688  $(1+0.1)^3$

17,770,688(1.331)

23,652,786

**For estimation of housing after Annualisation**

23,652,786/2.487

9,510,569.4

**Per month**

9,510,569.4/12

792,547.45

**Per child**

792,547.45/10

**Housing Per month per child**

**79,254.74**

## **Basic Consumption**

### **Consumption of food, clothing and foot wear according to Nepal Rastra Bank:**

Average Monthly expenditure: 15,130\*

Average Food expenditure: 39 %\* of total expenditure= 5900.7

Average clothing and footwear: 5.09%\* of total expenditure = 770.1

Total Average food, clothing and footwear expenditure = 6670.8

Average size of household: 5.36\*

Average number of 0-14 age group: 28.4 %\*

#### **For proportionate consumption of children**

$(28.4/100) \times 6670.8$

NRs. 1,894.50

#### **For average size of number of children in a household**

$(28.4/100) \times 5.36$

1.52 children

#### **For determination of cost of 1 child**

*Using unit proportionate method:*

1.52 children = NRs. 1,894.50

1 child = NRs. 1,894.50/1.52

**NRs. 1,246.38 per month**

\*: Values have been taken from Household Budget Survey, Nepal (Mid November 2005- Mid November 2006), Nepal Rastra Bank, 2008.

### **Care-Givers time:**

All children should have 100% supervision if not in school and after school if they are in school.

Total year: 365 days

:  $365 \times 24 \text{ hours} = 8760 \text{ hours}$

Total hours for 4 months: 2920 hours

Total hours for 8 months: 5840 hours

### **Holidays**

Modal number of government holiday per month: 2 days

Total number of government holidays per year: 24 days

Long term vacation (Seasonal and festival) per year: 2 month

Long term vacation (Seasonal and festival) per year: 60.8 days

Total number of Saturdays per year: 52 days

**Total number of holidays per year: 137 days = 3288 hours**

*Total Hours of holidays for 4 months*

$3288/3 = 1096 \text{ hours}$

*Total Hours of holiday for 8 months*

$1096 \times 2 = 2192 \text{ hours}$

### **Winter Season:**

Months of Mangshir (*November-December*), Poush (*December-January*), Magh (*January-February*) and Falgun (*February-March*) are considered as winter season thus they have special school hours.

School Hours per day: 10.00 am – 3.30 pm

Total School Hours per day: 5.5 hours

School Days: 6 days a week

Total hours for 4 months: 2920 hours

Total holiday hours for 4 months: 1096 hours

Total school hrs for 4 months:  $2920 - 1096 = 1824$  hours

$1824/24 = 76$  day X 5.5 hrs = 418 hrs

**Other Seasons:**

School hours per day: 10.00 am – 4.00 pm

Total School hours per day: 6 hours

School Days: 6 days a week

Total hours for 8 months: 5840 hours

Total holiday for 8 months: 2192 hrs

Total school hrs for 8 months:  $5840 - 2192 = 3648$  hrs

$3648/24 = 152$  days X 6 hrs = 912 hrs

Total school going days =  $418 + 912 = 1330$

Total care needed days *or* (Total not school going days) =  $8760 - 1330 = 7430$  hrs

$7430/24 = 309.58$  days

**Opportunity cost for comprehensive care giver's time:**

365 days caretaker's time average cost NRs.  $(92,857.1 + 1,428.57^*) = 94,285.67$

309.58 days caretaker's time average cost NRs.  $(94,285.67/365) \times 309.58$

**NRs. 79,969.75 per year**

Average cost of caretaker's time for 1 month  $(79969.75/12) = \text{NRs. 6,664.15}$

**Minimum of 4 staff in a child care home =  $6,664.15 \times 4 = 26,656.6$**

**For per child per month =  $26,656.6/10 = 2,665.66$**

*\* Adjusted beneficiaries provided within the care model.*



**Opportunity cost for institution based care giver's time:**

365 days caretaker's time average cost NRs. 96,000

309.58 days caretaker's time average cost NRs.  $(96,000/365) \times 309.58$

**NRs. 81,423.78 per year**

Average cost of caretaker's time for 1 month  $(81,423.78/12) = \text{NRs. } 6,785.32$

**Minimum of 4 staff in a child care home =  $6,785.32 \times 4 = 27,141.28$**

**For per child per month =  $27,141.28/10 = 2,714.13$**

**Opportunity cost for Community based care giver's time:**

*Government Pay scale for child care staffs (NRs. 7,000 per month):*

365 days caretaker's time average cost NRs. 84,000

309.58 days caretaker's time average cost NRs.  $(84,000/365) \times 309.58$

**NRs. 71245.81 per year**

Average cost of caretaker's time for 1 month  $(71245.81/12) = \text{NRs. } 5,937.15$

**Minimum of 4 staff in a child care home =  $5,397.15 \times 4 = 21,588.6$**

**For per child per month =  $21588.6/10 = 2,158.86$**

*Assuming the cadres of staff are equally paid or variations of pay scale is contained in these figures.*

## Access to Services (*Health and Education*)

### Health

The minimum standard implies that we use the effective minimum of available options cost estimate in this regard the cost of health care has been free of cost for essential health care. But in practice, the management of other illness of HIV affected people has cost some money. To put an approximate value of this cost; an average value of medical cost incurred in three models were taken.

$$2000+1000+1850= 4850 = 4850/3$$

**NRs. 1,616.66**

### Education

The minimum standard implies that we use the minimum effective cost of available options cost estimate. In this regard, cost estimate of government school was taken.

The cost of education up to class five has been free of cost but the cost of stationeries and exams fees has to be paid. The cost of books still has to be calculated.

The cost calculation is done on basis of per child.

Class →	1, 2, 3	4, 5	6, 7	8, 9, 10
Tuition fee			2400	3600
Exam fee	900	900	1050	1800
Books	331.6	314	654.8	1102.55
Copies	300	500	1210	1210
Pens, pencils, etc.	300	240	240	450
Total	1831.6	1754	4844.8	8162.55
<b>Grand Total</b>	<b>16,592.95</b>			

*Using unit proportionate method*

Cost of 10 years of education is NRs. 16,592.95 per child.

Cost of 1 year of education is NRs. 1659.295 per child.

Cost of 1 month of education is **NRs. 138.27 per child.**

**List of person Consulted**

Mr. Megha Raj Dhakal (Supervisor)

*Ministry of Health & Population*

Mr. Devendra Gyawali

*Ministry of health & Population/SABIN*

*Health Economist*

Mr. Chris Desmond, PhD.

*Harvard School of Public health*

Mr. Manish Shrestha

*Global Village & Information Centre*

Erg. Dilliram Bhatta

*Ministry of Local Development*

Mr. Gokul Shrestha

*Kitini School, Godavari*

Mr. Rajiv Kafle

*NAPAN+,Bansbari*

Mr. Gakul Bhatta

*KUMS, Dhulikhel*

Mr. Vuvan Dahal

*Navakiran,Lazimpat*

Mr. Navaraj Bhattarai

*Pokhara University,Kathmandu*

M/s. Ranju Pandey

*MSPN, Lalitpur*

Mr. Rabindra Mulmi

*Mulmi Books & Stationeries*

Mr. Pravaran Mahat

*UCAAN, FHI*

Mr. Lochann Regmi

*Central Child Welfare Board*

Mr. Laxmi Adhikary

*Aakura, Pokhara*

M/s. Namuna Bhusal

*Central Child Welfare Board*

**Conversion table for Land measurements**

	Square ft.	Dam	Paisa	Ana	Ropani	Bigha
Sq. ft.	-	21.39	85.563	342.35	5476	72900
Dam	0.04675	-	4	16	256	3408
Paisa	0.01169	0.25	-	4	64	852.01
Ana	0.00292	0.0625	0.25	-	16	213
Ropani	0.00018	0.0039	0.01563	0.0625	-	13.313
Bigha	0.0001	0.00029	0.00117	0.00461	0.07512	-

*Adapted from ActionAid Diary 2006/07*