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From HIV Abandonment to Adoption

Case study of New Life Home for abandoned babies, Kenya

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من إهمال علاج فيروس نقص المناعة البشري إلى التبني

دراسة حالة حياة في بيت جديد للأطفال الرضع المهملين

عبد المجيد وجي جي آر، مريم واجبي، ميري بيكنهمام، كليف بيكنهام

الملخص: زاد عدد الأطفال اليتامى والمعرضون في العالم نتيجة وباء فيروس نقص المناعة البشري الجائِحَ. من مهام البيت الجديد لرعاية الأطفال الرضع من اليتامى أو المهملين . الذين أصبحوا كذلك في الغالب بسبب تعرضهم للفيروس المذكور، مما يجعلهم بحاجة للتبني . هذا البحث يتحرى عن ويقوم بتوثيق الدروس المستنبطة لأول تسع سنوات ونصف من إنشاء البيت المذكور . بين التحليل الاستعادي في التحري عن نمط 490 طفلا رضيعا ادخلوا في هذا البيت. حيث تمت مراجعة صفات ونتائج إقامة هؤلاء الأطفال . وتحليل المعطيات البيولوجية . الوزن . التعرض للفيروس . المنظمة/ الوكالة التي حولت الحالة . ومصير الطفل ونتيجة التداخل في البيت. هذه الدراسة لا تتابع أي رضيع/رضيعة يتم تبنيه خارج ذلك البيت . أو الذين ماتوا أو نقلوا إلى بيت لأطفال أكبر عمرا أو الذين اعيد إلحاقهم بالأسر الأصلية . تم تحويل (58%) من الأطفال عن طريق المراكز الصحية . (15%) من السلطات المحلية . (2%) من الجمعيات اليهودية . و(25%) من بيوت الأطفال الأخرى. في نهاية الدراسة كان هناك 425 (92%) رضيعا لا يزالون على قيد الحياة .أما الذين ماتوا فكان هناك ((80% منهم دون سن الستة أشهر - مع فرق إحصائي واضح (احتمالية (0.003> - . وكان ((45% منهم موجبا بالنسبة للفيروس. كان معدل وفيات الأطفال 77.6/-1000. ومن العوامل التي أدت إليه: التعرض للفيروس (احتمالية (000>. والوزن عند التسجيل في البيت (احتمالية (0.002= . كان معدل وفيات الأطفال المعرضين للفيروس أكبر من غير المعرضين بنسبة 1.6 – 2في عمر 6 أشهر و 12شهرا على التوالي و 18شهرا. كان معدل وفيات الأطفال المعرضين للفيروس 1000/71 في عمر 6 أشهر . 1000/94.7 في عمر 12 شهرا و 1000/100.6 في عمر 18 شهرا . بينما كان لغير المعرضين 1000/43.3 في عمر ستة أشهر و1000/46.7 في عمر اثنا عشر شهرا. كان سبب الوفاة الرئيسي عند الأطفال العرضين للفيروس هو الالتهاب الرئوي (56%) والإِنْتانٌ الدَمَوِيّ (22%) . معظم الأطفال الرضع تم تبنيهم 323 (67%). بينما أعيد(6.3%) 32 منهم الى عوائلهم الأصلية والقليل الباقي 7 (1.4%) حولوا الى بيوت اخرى ترعى أطفالا أكبر سنا . حياة البيت الجديد توضح مثالا محتملا لرعاية الأطفال اليتامى والمعرضين . لأن غالبية الأطفال المعرضين يمكنهم الحصول على التبني والبدء بحياة جديدة . هذه الطريقة يمكن دراستها وتطبيقها لتخفيف معضلة مثل هؤلاء الأطفال في دول جنوب الصحراء الأفريقية التي يكون انتشار فيروس نقص المناعة المكتسب كبيرا .

مفتاح الكلمات : فيروس نقص المناعة البشري . اليتامى . كينيا.

Objective: The number of orphaned and vulnerable children (OVC) worldwide has increased as a result of the Human Immunodeficiency Virus (HIV) pandemic. New Life Home (NLH) specialises in the care of infants who have been orphaned or abandoned, often because of their exposure to HIV and places them for adoption. This paper documents the lessons learnt from the Home's first 8.5 years of existence. ***Methods:*** This retrospective study analyses the pattern of the 490 infants admitted at NLH. The characteristics of the infants' stay are analysed: bio-data, weight, HIV exposure, referring organisation/agent and outcome. This study ceased to follow infants after adoption, death, transferral to other homes, or reunion with own family. The infants came via health facilities (58%), local authorities (15%), good Samaritans (2%), and other children's homes (25%). ***Results:*** At the end of the study period, 425 (92%) of babies were still alive. Of those who died, 80% were less than 6 months old (p<0.003) and 45% were HIV positive. A child mortality rate of 77.6/1000 was demonstrated with the key associated factors being HIV exposure (p <0001), and weight at admission (p=0.002). The mortality rate for the HIV exposed was 71/1000 at 6 months, 94.7/1000 at 12 months and 100.6/1000 at 18 months, while for those not exposed to the virus it was 43.3/1000 at 6 months and 46.7/1000 at 12 months. The major cause of death in the HIV exposed was pneumonia (56%) and septicaemia (22%). The majority of infants, 323 (67%) were adopted, some were reabsorbed into their biological families 31(6.3%) and a minority 7(1.4%) transferred to other children's homes which cater for older children. ***Conclusion:*** NLH demonstrates a possible model of care for OVC as majority of vulnerable child can have the opportunity to be adopted and thereby a 'second lease' of life. This strategy is worth studying and duplicating in the mitigation of the OVC dilemma in HIV high prevalence countries in sub-Saharan Africa.

Keywords: HIV; AIDS; Care, orphans, Kenya.

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Advances in Knowledge

This article highlights one of the social impacts of the HIV/AIDS pandemic with reference to orphaned and vulnerable children.

Application to Patient Care

The article demonstrate a pioneering model and concerted effort to rehabilitate orphaned and vulnerable children in a region gripped by the HIV/AIDS pandemic and hampered by limited resources.

In the last two decades, Kenya has seen an unprecedented increase in the number of orphans. In 2001, it was estimated that there were about 1 million orphans countrywide. This number was projected to rise to 1.8 million by 2005 and 2.2 million by 2010. The majority (90%) of these orphans are as a result of the HIV/AIDS epidemic.[1, 2, 3]

This problem is not unique to Kenya. Worldwide, 13.2 million children are orphaned as a result of AIDS.[4] By the year 2010, this number is expected to rise to more than 25 million.[4] In 12 African countries, projections show that orphans, who constituted 12% of all children under 15 years of age in 2001, will increase to 15% by 2010.[5, 6]

To compound this scenario further, orphaned children living in areas with a high HIV prevalence are especially vulnerable to a myriad of problems, including HIV infection, malnutrition, high morbidity and mortality, physical and social abuse, exploitation, illiteracy, fear, isolation and loss of inheritance.[7, 8, 9] Households headed by orphans are also becoming increasingly common in these areas.[10]

The HIV/AIDS epidemic is having a devastating impact on children in Sub-Saharan Africa. Regardless of whether a baby is infected or not, the mortality in children born to HIV positive mothers is higher than those born into non-HIV affected households.[7, 10, 11] The past decade alone has seen an increasing disparity in infant mortality rates between the least developed countries (LCD) and other developing countries. The difference in the rates between these countries is widening from 2.1 to 2.3 fold.[12] This disparity has been attributed to three key factors: HIV/AIDS epidemic, underinvestment in children, instability and conflict. Secondly, there has been a steady increase in the under-5 child mortality rate. In Kenya, under-5 mortality has risen from 87 per 1000 live births in 1986 to 115 per 1000 live births in 2003.[13] This denotes a reversal of health gains made over the previous three decades.[14]

However, there are some valiant efforts being made on behalf of young children. Individuals, communities and governments as a whole are responding in various ways to stem the negative effects of the epidemic.[3] Orphanages and other formal institutions have proved to be an inadequate part of the response to orphaned and vulnerable children. The financial costs to maintain each child outstrips that of other forms of care. Furthermore, the children are left without the psychological, social and cultural skills which they need to function successfully as adults. Orphanages are therefore seen as a last or temporary resort.[14]

The government of Kenya has shown commitment to mitigating the effect of the HIV/AIDS pandemic on children by developing policies and guidelines to give strategic direction in the care of orphaned and vulnerable children, for example: *National Programme Guidelines on Orphans and Other Children Made Vulnerable by HIV/AIDS.*[1] This has been done as part of the wider multisectoral approach to controlling HIV/AIDS in the country. This has resulted in close collaboration between government and various organisations in order to implement effective programmes which meet the needs of vulnerable children.

To be part of the mitigation efforts, while recognising the importance of the first months and years of a child's life, New Life Home (NLH) in Nairobi, has sought to provide a home for orphaned, abandoned and HIV positive babies. The children receive food, shelter, clothing, free medical care, love and caring support within the environment of an actual home, and are eventually put up for adoption.

The purpose of this study is to examine the characteristics of the children admitted into this Home and their exposure to HIV and the lessons learned therein.

METHODS AND MATERIALS

STUDY SITE

This is a case study based on data compiled from records of all infant admissions into the NLH for abandoned and HIV babies in Nairobi, Kenya. The Home is

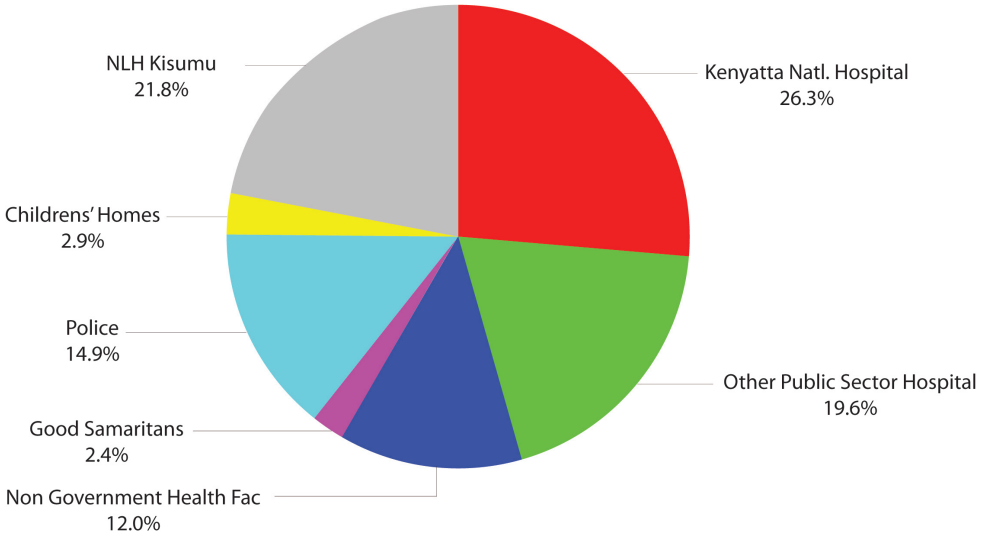

Figure 1: ***Organisations that refer infants to New Life Home in Nairobi***

situated in a residential area within the city's environs. The building in which the Home is located was renovated to incorporate an acute medical care unit and a well-baby residential portion. The administrators are a live-in couple. The Home is registered with the Ministry of Home Affairs and National Heritage as a children's home, while the medical care unit is registered by the Ministry of Health as a private medical centre and nursing home.

In a bid to sensitise the public about the Home and encourage adoptions, targeted promotions were held in collaboration with opinion leaders at religious meetings, and in the print and electronic media.

The procedures used for adoption were adapted from laws of England by the Home's Board of Management with the support of the Children's Department in the Ministry of Home Affairs. This was necessary because at the time the national guidelines were still under development. The adoption procedure used involved assessments of interested families for the stability of their homes and their socioeconomic base. This was done by a social worker in collaboration with the Directors of the Home. When the interested families met the criteria a lawyer was contracted to process the adoption through the High Court of Kenya for expatriate families or through the local Magistrates courts for Kenyan citizens. The adoption process took four to six months to complete.

Study population and period

The study examines data from 490 infants' records over a period of 8.5 years from June 1994 to December 2002. Within this period, the Home admitted 490 infants from various sources: hospitals, police, good Samaritans, other children's homes, including an infant rescue centre and the Kenya Red Cross. The infant rescue centre is located in Kisumu, a high HIV prevalence region, 350 km from Nairobi. Infants were admitted from all over the country within the age group of 0 to 6 months.

Upon admission, the infants underwent a medical examination and a rapid HIV test. For the initial two years of the Home, ELISA tests were used to determine possible exposure to the virus. Subsequently, rapid test kits were used: Determine® and Unigold®. The testing algorithm involved the use of the two different rapid test kits simultaneously (parallel testing). Due to the high costs, Polymerase Chain Reaction (PCR), using Roche RNA amplification assay, was only conducted for the babies who demonstrated that they had been exposed to HIV and were candidates for adoption.

The data extracted from the children records include the infant's bio-data, weight, HIV exposure, referring organisation/agent, and outcome. The infants were referred for admission from private and public hospitals, local government administration (e.g. police and chiefs), other children's homes, a NLH rescue centre based in Kisumu (350 km away) and the Kenya Red Cross.

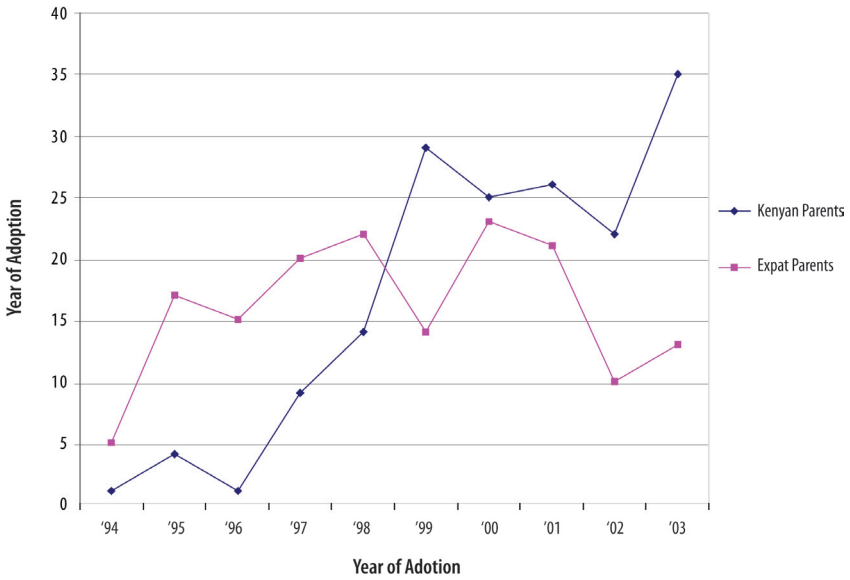

Figure 2: ***Comparison of adoption between Kenyan and expatriate parents over time***

This study ceased to follow each infant once he/she was adoption out, died, transferred to other homes for older children or reunited with the biological family. A future study in progress traces adopted babies after they leave NLH.

DATA MANAGEMENT

The data tabulation and cleaning was done using Statistical Package for Social Sciences (SPSS) version 12. Analysis and mining was done using frequency distribution and cross tabulation. Frequency distribution was used for data cleaning. Analysis began by examining frequency distribution of each variable. Also statistical analysis was done using frequency and cross tabulation to characterize the HIV exposure and referring organisations/agencies, gender and infant mortality. The predictive value for statistical significance was 0.05 ($p < 0.05$).

RESULTS

Between June 1994 and December 2004, 490 infants were admitted into NLH. The female infants (245) were equal in number to the male babies. The infants were admitted from various organisations: 129 (26.3%) from Kenyatta National Hospital, 59 (12%) non-governmental health facilities, 96 (19.6%) other public health facilities and 107 (2.8%) from the New Life Home Rescue Centre in Kisumu. The local police were also involved in bringing in 73 (15%) of the abandoned infants to the Home. These babies were entrusted to NLH by the relevant government agencies with legal mandates to take care of them for life, until adoption or upon their unfortunate demise. NLH is therefore the custodian of all infants brought under its care.

The Home is not an orphanage. It is a home. The live-in couple are the parents of all babies, who mix with the couple's own children, eat with them, play with them and are basically taken care of as the couple's own children. All children get the same treatment. Extra hands by many staff assist the couple to provide the extra help needed to take care of all these babies. In essence, it is an enlarged home environment, rather than an impersonal orphanage.

The age of the infants at admission ranged from one day to 320 days (11 months) with a mean of 53 days (7.5 months). However, of those admitted 186 (38%) were neonates and 476 (97%) were below 6 months.

Once admitted the average length of stay was 150 days (5 months; interquartile range (IQR) 1.5-6 months) and a maximum of 3 years. The longest staying children were those infected with the HIV virus ($X^2 = 381$; $p<000$). The age at which the children are discharged ranged from 2 days to 785 days (2.2 yrs) with a mean of 203 days (6 months) and IQR of 3-9months.

CHILD MORTALITY AND HIV EXPOSURE

At the close of the study period, a total of 452 (92%) out of 490 infants were still alive denoting a child mortality

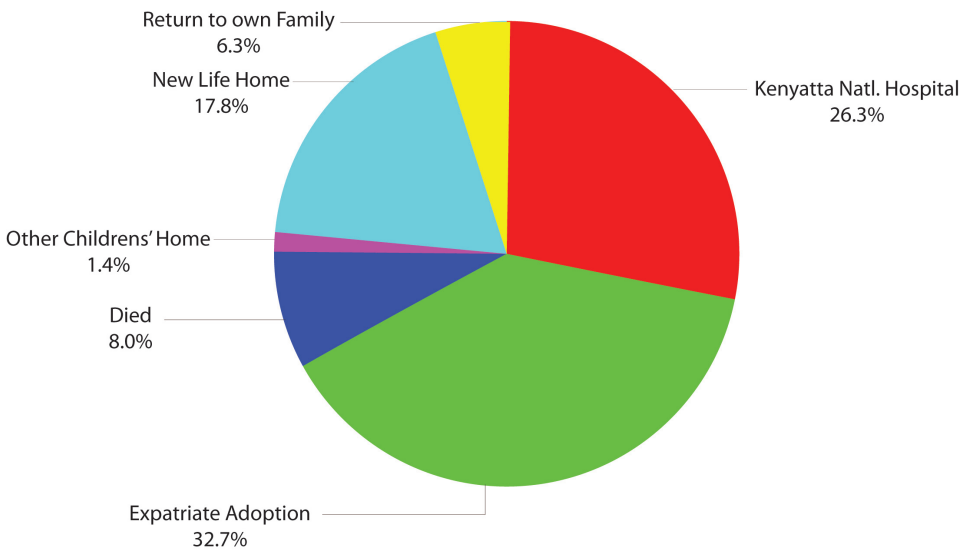

Figure 3: ***Profile of infants' discharge destinations***

rate of 77.6 per 1000 live births. Of the infants who died 22 (58%) were female and 16 (42%) were male. Eighteen (47%) of the infants who died had been exposed to HIV. Of all the children who died, 32(84%) were 198 days old (6.5 months) and below. Twenty two (58%) of the infants who died were referred from the various health facilities, 7 (18%) from police and 8 (21%) from children's homes. The factors associated with infant mortality weight at admission (p=0.002), HIV exposure (p<0001) and length of stay (p=0.16).

On admission, 177 (36%) infants tested positive for antibodies to the HIV virus. Of all the children, eighteen (3.7%) were HIV exposed children who died. One hundred and thirteen (35%) of the children adopted demonstrated evidence of having been exposed to HIV before their admission into the Home.

The mortality rate of children exposed to HIV was 1.6 and 2 times higher at 6 and 12 months respectively than that of non-exposed children. The mortality rate for the HIV exposed was 71/1000 at 6 months, 94.7/1000 at 12 months and 100.6/1000 at 18 months while for those not exposed to the virus it was 43.3/1000 at 6 months and 46.7/1000 at 12 months. In the age bracket 6 to 12 months, the mortality rate was 23.7/1000 in HIV exposed infants and 3.3/1000 in the non-exposed infants, while in the age bracket 12-18 months mortality in the HIV exposed children was 100.6/1000 live births.

There were no deaths recorded in the Home in children older than 18 months.

Characteristics of the Adoptions

The majority of infants, 323 (67%), left the Home to join adoptive parents/families. At the end of the study period, 160 (32.7%) of the children had been adopted by expatriate families, 166 (34%) adopted by Kenyan citizens, while only 87 (18%) were still resident in the Home**.** Over the years, adoption by Kenyan citizens has increased nine-fold. In 1996 only 6% of adoptions were to Kenyan families while in 1999 this had changed to 56%.

The average age at which the infants were adopted was 181 days (6 months) (IQR 4 to 7.7 months). These infants had an average weight of 6.2kg (IQR 4.8-7.6kg).

Over the latter two years the rate of adoption declined from 85% in 2001 to 30% in 2003. This denotes nearly a three-fold decline. The expatriate families were three times less likely to adopt than Kenyan families. Seven (1.4%) of the transfers to other children's homes have been of HIV positive children. A few children 31 (6.3%) were reabsorbed back into their biological families.

DISCUSSION

This study of NLH seeks to demonstrate that irrespective of the referring agent or HIV exposure the outcome of a well managed abandoned or orphaned baby can be

Table 1: ***Characteristics of infants admitted into New Life Home***

	HIV not exposed	HIV Exposed	Not tested	Total
Gender	**No. (% within gender)**	**No.(% within gender)**		**No.**
Female	155 (63.3)	83 (33.9)	7(2.9)	245
Male	145 (59.2)	94 (38.4)	6(2.4)	245
Referring Agent	**No. (% within the referring agent)**	**No.(% within the referring agent)**	**Not tested**	**No.**
Kenyatta National Hosp.	73 (56.6)	65 (42.6)	1(0.8)	139
Other Public Health Facilities	41 (42.7)	55 (57.3)	0	96
Good Samaritans	9(75)	3(25)	0	12
NGO Health Facilities	38 (64.4)	20 (33.9)	1(1.7)	59
Police/Local Administration	50 (68.5)	13 (17.8)	10(13.7)	73
Other Children Homes	1 (7.1)	12 (85.7)	1(7.1)	14
NLH Rescue Centre- Kisumu	53 (21.6)	54 (22)	0	107
Infant Mortality	**No. (% within HIV exposure)**	**No. (% within HIV exposure)**	**Not tested**	**No.**
Alive	286 (95.3)	159 (89.8)	7	452
Dead	14 (4.7)	18 (10.2)	6	38
Fate of children	**No. (% within HIV exposure)**	**No. (% within HIV exposure)**	**Not tested**	**No.**
Kenyan Adoptions	115 (38.3)	51 (28.8)	0	166
Expatriate Adoptions	97 (32.3)	62 (35)	1(7.7)	160
Transfers to Children Homes	3 (1)	4 (4.3)	0	7
Transfer to Biological Family	14 (4.7)	12 (6.8)	5 (38.5)	32
Resident at New Life Home	57 (19)	29 (6.4)	1(7.7)	87

good.

Nearly 40% of admitted infants demonstrated exposure to the HIV virus. This is in contrast to the general Kenyan HIV prevalence at antenatal surveillance clinics, which ranged between 9 and 13% over the study period.[2] This implies that abandoned children are possibly more likely to have been exposed to HIV from their mothers.

Accommodating the HIV exposed infants at the Home where they are fed on breast milk reduces the risk of transmission of the virus. Meta-analytical studies have shown that frequency of breast milk transmission is 14% for women with established infection and 29% during acute maternal illness.[15] It has also been demonstrated that the use of breast milk substitutes prevents 44% of infections.[16]

The Home's infant mortality rate was estimated at 78 per 1000 live births. Mortality was noted to be substantially higher in the children previously exposed to HIV. This was especially evident in the age group between 6 to 12 months where a seven-fold difference was seen.

The fact that HIV exposure and infection is a contributing factor to mortality has been demonstrated in various studies.[11, 17, 18] However, the mortality rate of infants at 12 months for both HIV exposed and non-exposed infants is considerably lower at the Home than is documented in a study conducted in urban Malawi on the effect of HIV on birth weight, infant and child mortality.[18] The Malawi study reported a mortality rate that was 2.3 times higher for HIV exposed children at 223/1000 and 1.5 times higher in the non-exposed at 68/1000. However, further study into the Home's model of care, support and treatment is needed for it to demonstrate fully its successes.

The commonest causes of death, regardless of the exposure to HIV, were septicaemia (39%) pneumonia (26%) and cardiac conditions (10.5%) in all the children; however, in the HIV exposed children, pneumonia was the commonest cause of death followed by septicaemia(56% and 22%, respectively). The cause of death in the HIV exposed children seen in this study is in line with other studies done in Malawi, where one of the frequent causes of death was pneumonia.[19]

The majority of surviving infants (67%) were adopted into both expatriate families and indigenous Kenyan families. Adoptive parents seemed to prefer to adopt younger children aged about 6 months and weighing about 6kg.

Initially, in the early years of the Home, the adoptions were by expatriate families; Kenyan families were slow to adopt. This may be a result of cultural perceptions on adoptions among other reasons. However, once opinion leaders adopted children there was a notable increase in young Kenyan couples adopting. The trend noted in this study represents a twelve fold

Table 2: ***Cause of infant deaths***

	HIV Positive No. (% in group)	HIV Negative No. (% within Group)	Total (%)
Pneumonia	10 (56)	2 (10)	12 (26)
Heart defects and Congestive Cardiac Failure	2 (11)	2 (10)	4 (10.5)
Strangulated Hernia		2 (10)	2 (5)
Meningitis	1 (13)	1 (5)	2 (5)
Septicaemia	4 (22)	11 (52)	15 (38)
Cot Death	1(13)	0	1 (3)
Malnutrition		2 (10)	2 (5)
Aspiration Pneumonia		1 (5)	1 (3)
Total	18 (46)	21 (54)	39 (100)

increase over a 9 year period. Expatriate families who were equally willing to participate in adoption supplemented this trend.

In countries hardest hit by HIV/AIDS, care for orphans and children affected by HIV/AIDS lies primarily with their families and communities. This places a heavy burden on the extended family system, which is the backbone of African societies. In response to this, the Malawian and Namibian governments in conjunction with UNICEF provide equipment, supplies and materials to day-care centres that provide free services to orphans.[6]

Other countries such as Botswana provide support to NGOs, extended and foster families. The support ranges from family counselling to meeting physical basic needs such as food, clothing and education.[20] Experience shows that successful programmes are those that are child-centred, family and community focused, and where the rights of the child are respected and protected.[21]

NLH participates actively in facilitating adoption procedures of the infants into Kenyan or expatriate families. Adoption is encouraged because it allows the infants to transit into homes where there is greater personalised attention. Child socialization can thus be effected while also seeking to secure their future. Within the country, this strategy is deemed one of the avenues for effectively caring for orphans and children affected by HIV/AIDS (OVC's). In the absence of adoption, AIDS orphans contribute substantially to the number of street children.

The study had various limitations as it was dependent on extracting previously recorded data from children's records and gaps in the records existed. First, the completeness of the records was dependent on the thoroughness of the nursing and managerial staff who had previously attended the children. For example, large number of records did not contain the birth weight and heights of the infants therefore analysis was not possible. Second, the retrospective nature of the study (as opposed to prospective) precluded the collection and analysis of other important variables and associations that would affect outcomes such as the nutritional status of the infants, and the HIV/AIDS and health status of birth mothers. Third, being in a resource constrained setting the Home can only provide for minimal laboratory and radiologic tests. The cost of PCR (RNA) was US$114-157 for each specimen; hence it was not be possible to determine rates of HIV infection in admitted infants at less than 18 months of age, as PCR (ribonucleic acid RNA) was not universally done. PCR (DNA), being the better diagnostic test for infant diagnosis, was not done because it was not readily available in the country during the study period.

CONCLUSION

The strategy used by the NLH for addressing the Vacs' situation, with particular reference to abandoned infants, is reproducible. Its strength lies in the rescuing of abandoned infants, who are vulnerable to HIV infection, morbidity, mortality or dysfunctional livelihood. These infants are cared for, while community members are encouraged to participate in their adoption. In effect, the Home serves as a transition for OVCs in their infancy.

All in all, the mitigation of the HIV impact on children of all ages is a challenge that demands a multisectoral response and needs to be dealt with as priority for

the sake of securing our next generation, our future.

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