
**THE NAIROBI EASTLANDS
CHILDREN'S HEART EDUCATION
PROJECT**

An Evaluation for

DHF and KHNH

Conducted

by

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FINAL EVALUATION REPORT

15 November 2008

Abbreviations and Acronyms

ARF	Acute Rheumatic Fever
ASOT	Anti Streptolysin O Titres
CAD	Coronary Artery Disease
CHD	Congenital Heart Disease
CRP	C Reactive Protein
CVD	Cardiovascular Disease
DHF	Danish Heart Foundation
EMR	Electronic Medical Records
ESR	Erythrocyte Sedimentation Rate
KCS	Kenya Cardiac Society
KHNF	Kenyan Heart National Foundation
MoH	Ministry of Health
NGO	Non Governmental Organization
RHD	Rheumatic Heart Disease
RF	Rheumatic Fever
TOR	Terms of Reference
WHF	World Heart Federation

INTRODUCTION

Rheumatic Heart Disease (RHD) is the commonest heart disease in children and young adults in developing countries. This is primarily a disease of poverty, which explains its geographic occurrence. Superimposed on this persistent and often neglected condition is the growing epidemic of coronary artery disease (CAD). In 2002 the Danish Heart Association (DHA)¹ undertook the task of participating in the “The African Twinning Project” - a capacity building initiative by the World Heart Federation (WHF). The purpose of the project was to support and facilitate the establishment of heart associations in Africa with the intention of preventing the threat posed by the epidemic of heart disease, particularly CAD.

Following the launch of this initiative, the Kenyan Heart National Foundation (KKNF) was established in 2003 as a cooperate effort of the WHF, the DHA and Ms. Elizabeth Gatumia, its present Chief Executive Officer. The Foundation operates as a medical charity with a mission to prevent, reduce, control, treat and manage heart disease through public awareness and education². Its activities are focussed mainly on prevention of heart disease, and especially RHD³. Thus, in 2005 the KKNF launched a two-year RHD primary prevention project in the Nairobi’s Eastlands slums. This pilot project entitled ‘The Nairobi Eastlands Children Heart Education Project’ was started partly on the premise that ‘the disease spreads excessively due to lack of qualified treatment; the medical staff lack the expertise, and the knowledge about the disease and, thus its consequences among the slum areas’. The pilot project is funded by the Danish International Development Agency (DANIDA) and the Danish Heart Foundation (DHF).

‘The Nairobi Eastlands Children Heart Education Project’ referred to in this document as the KKNF RHD prevention project is an education project targeting members of the local communities, schools and health facilities. To achieve its objectives, the KKNF employs a variety of methods including: workshops, seminars, open-air public meetings, pamphlets and leaflets, role play by school children, and the media. This evaluation examines, among other aspects, the successes, challenges and opportunities of implementing the pilot project. Special focus is given to the appropriateness of choosing the target groups; the effectiveness of the methods used in the education campaign; and the overall impact of the campaign in improving the knowledge and skills of health providers in managing and reporting patients with RHD (Terms of Reference (TOR), **Appendix A**)

¹ Used synonymously with the Danish Heart Foundation (DHF)

² The Kenyan-Heart National Foundation website: <http://www.kenyanheart.or.ke> (last accessed November 01, 2008).

³ Unless specified the term RHD is used to encompass the disease spectrum RF/RHD

METHODOLOGY FOR THE STUDY

The Study: Design, Area and Population

In-depth interviews based on a questionnaire survey were conducted in the Eastlands area of Nairobi between September 1 and 21, 2008. The survey covered the five administrative divisions – Embakasi, Makadara, Kamukunju, Kasarani and Starehe (**Figure 1**). This area is home to about 2.9 million people, mainly migrant workers and small scale traders, who face severe socio-economic deprivation. Three different questionnaires were administered targeting members of schools, health facilities and the local committees, respectively. Face-to-face interviews were conducted for the KHNH staff to get an insight into their programme activities. And documents provided by the KHNH were studied and summarised.

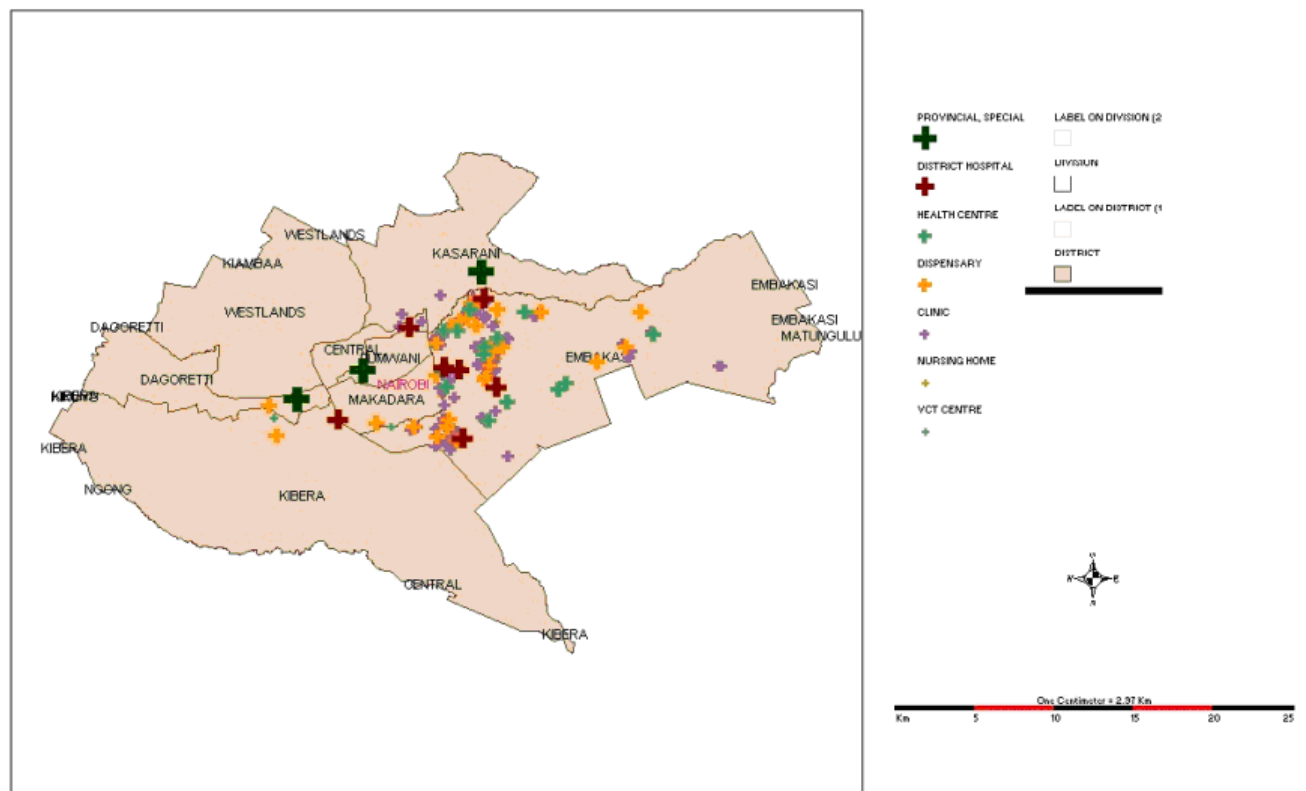


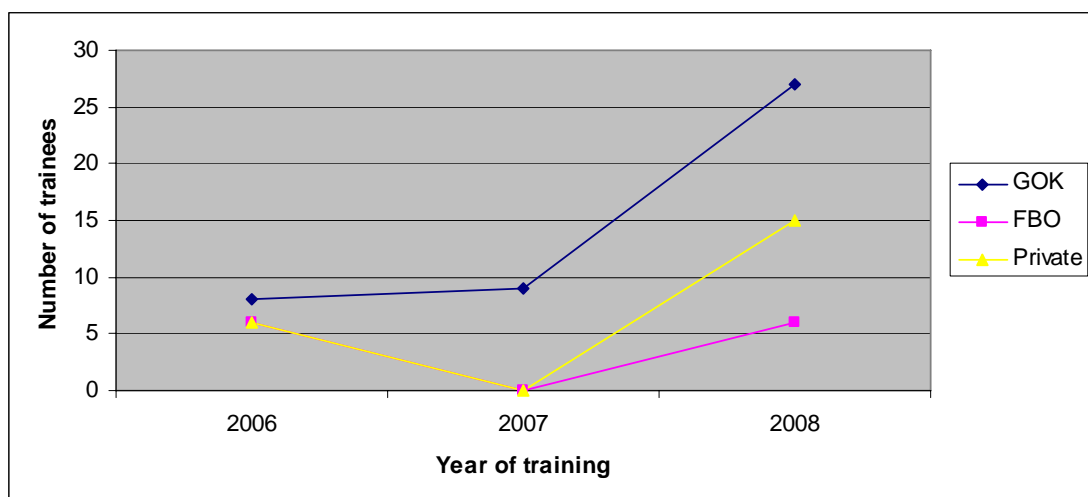
Figure 1: Map of Nairobi by division and geocoded health facilities

The Schools

Eastlands area has about 132 primary schools, which represent 68% (132/198) of all primary schools in Nairobi city. Over a period of three years (2005-2008) the KHNF conducted 23 major seminars where at least one member of the school (teachers) was trained on RHD prevention. Upon returning to their respective schools, the trainees were expected to set up Heart Clubs¹ to involve other teachers, students and their parents in learning more about RHD and its prevention. Furthermore, with assistance from the KHNF, a number of schools launched the “Kenyan-Heart Foundation Talking Walls” – a pictorial illustration of the human circulatory system with a list of signs and symptoms of ARF (**Appendix B**). In total, 130 teachers from 95 (80%) schools were trained during the pilot programme. It should, however, be noted that schools enrolled in this pilot phase were picked randomly. The teachers, however, were selected by the school administration. And since there was no previous baseline survey prior to the implementation of the pilot project, this evaluation interviewed members of schools that received training during this phase and those that did not. To some extent, this approach provided a comparative measure of the impact of the training programmes.

The Health Providers

There are about 70 registered health providers in the Eastlands area of Nairobi - 38 government, 20 private and 12 faith based health facilities. Except for one government district hospital, all the others are small clinics and health centres managed by nurses and clinical officers/assistants. During the last three years (2006-2008), a total of 198 health workers drawn from all these facilities were trained (**Figure 1**).



¹ KNHF defines Kenyan-Heart clubs as lobby groups that were formed in schools to spread the message of RHD prevention among the pupils and their surrounding communities.

Figure 1: Total number of trained health providers by sector – government (GOK), Faith based (FBO) and Private

Proportionally, more nurses were trained in the first two years (**Figure 2.**) This, however, dropped in favour of Records Clerks. Overall, the proportions of trained staff were as follows: 21 Clinical Officers (10.6%), 71 Nurses (36.4%), 3 Laboratory Technologists (1.5%), 81 Records Clerks (40.9%), 8 Doctors (4.0%) and 13 Administrative Officers from the Provincial Medical office (6.5%).

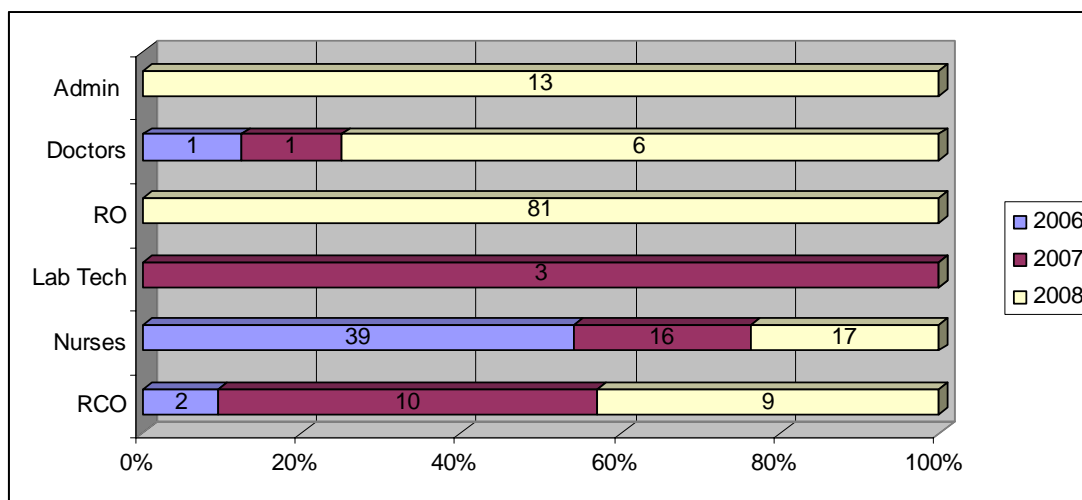


Figure 2: Cadres of staff trained from 2006-2008: RCO, Registered Clinical Officers; Lab Tech, Laboratory Technologists; RO, Records Officers/Clerks; and Admin, Administrative staff

The Local Committees

Local committees are **groups of community members**, usually 5 to 10 volunteers, brought together by the KHNF for the purpose of promoting the agenda of RHD prevention within their respective communities. It is envisioned that they will continue to provide educational support to schools, churches, and health clinics beyond the project lifetime. So far, there are 5 local committees, whose members have attended at least one training seminar. And between the year 2007 and 2008 they reached 5648 people living in Eastlands – 3174 (56.2%) teachers, pupils and parents (schools); 2358 (41.5%) local residents; and 116 (2.1%) others (community leaders and, youth and women’s groups). Because of the important role these committees play and their availability during the survey¹, the evaluation team interviewed 29 members seeking to understand their level of knowledge with regard to RHD prevention and community mobilisation.

¹ Some committee members assisted the evaluation team in locating local facilities e.g. schools and health clinics.

The Kenyan Heart National Foundation

The KHNF was registered on 19th July 2004 as a Trust¹ [*] and it operates in Kenya as a non-governmental organisation. Its mandate is clear, and states in part: 'It is to facilitate in the work of educating the public using whatever effective public forums/gatherings including public media, formal or informal on the control, prevention, treatment and management of heart disease and other related ailments'. It shall achieve its objectives through creating local and international partnerships.

Since inception the organisation has hired only two fulltime staff members², and more recently a third member joined the team. The Foundation's core activity is RHD prevention. In addition, it participates actively in annual celebrations of the WHF Day, a global event dedicated to cardiovascular disease (CVD) prevention. The project also participates in local activities that impact on peace and stability of its target audience – e.g. meetings to promote community peace and tree-planting for environmental conservation have previously been used to highlight the plight of their patients. KHNF current annual operating budget is approximately 3.5 million Kenya Shillings (US\$ 50,000) and only less than 20% is raised from local donors.

Ethical Considerations

Permission to administer questionnaires in schools and health clinics was granted by the Nairobi City Council's departments of Education and Health, respectively. In addition, the KHNF has permission to work in this area. Thus, the survey team found it appropriate to inform the local administration and community leaders about the survey. All participants gave consent to participate in the survey. And all pupils were interviewed in the presence of a teacher or a parent.

RESULTS

Characteristics of the survey population

All the participants interviewed (pupils, teachers, parents, local committee members, and health providers) were residents of the Eastlands area. A total of 330 questionnaires were administered: 270, schools; 31, health providers; and 29 local committees (**Tables 1 and 2**). About 60% of the participants were female. And 42% of all participants had attended at least one training seminar organised by the KHNF or Heart Clubs in the case of pupils and parents.

¹ Trust is a membership organization governed by a set of rules and with a common purpose.

² Two university graduates – the project Manager and Assistant – and a Diploma holder, the Office Assistant

The Schools

The KHNF has helped to establish at least 40 active Kenyan Heart clubs¹ in primary schools and painted 12 talking walls. A total of 270 questionnaires were administered in schools to 121 pupils, 109 teachers and 40 parents in 95 schools with median ages of 14, 40 and 42 years, respectively.

	Pupils (%)	Teachers (%)	Parents (%)	Total (%)
Trained	41 (33.8)	55 (50.5)	10 (25.0)	106 (39.3)
Untrained	80 (66.2)	54 (49.5)	30 (75.0)	164 (60.7)
Total	121 (100)	109 (100)	40 (100)	270 (100)

Table 1: The survey population and training status of pupils, teachers and parents (N=270)

	Health providers (%)	Local Committees (%)	Total
Trained	14 (45.2)	13 (44.8)	27 (45.0)
Untrained	17 (54.8)	16 (55.2)	33 (55.0)
Total	31 (100)	29 (100)	60 (100)

Table 2: The survey population and training status of health providers and local committees (N=60)

Sixty five percent of respondents were Christian Protestants and **their religious beliefs** did not prohibit them from seeking medical treatment. The median family size was 4 members with the same median number of children which ranged from 2 through 13 per family. A majority of children lived with both parents who earned a median monthly income of KShs 11000 (eleven thousand Kenya shillings) (US\$ 150). Most respondents (81.8%) lived in small rented accommodation. Thus, **sharing bedrooms was common** and this ranged from 2-15 children per room. In fact, 82.6% of the children interviewed shared a bedroom with siblings in groups of 2-6 per room.

With regard to **water and sanitation**, 86.5% of the pupils interviewed had running tap water at home while the rest purchased it from a nearby water kiosk. And 95% of the families with tap water have it inside the house or within 10 meters of the house. Among the respondents, 42.9% had toilets without running water and therefore used shared public latrines and pit latrines.

¹ Every school where a member of staff has been trained is expected to have a Heart-club.

When pupils were asked about the **number of sore throats** they had suffered in the last one year, only 46 (38.0%) of them answered the question. Of these, 19.6% could remember at least one serious episode in the last one month; and a further 13.0% admitted to at least one episode in the last year (range 1-4 attacks). Most (79.0%) of the sick children were treated with ‘tablets and gargles’ for a median duration of 4-5 days (range 1-10 days). And a majority (53.2%) of them **purchased medication** from the local private chemist. Interestingly, only 17.8% of the children with sore throat obtained medication from the local dispensary, health centre or hospital.

Asked whether being a **member of the Heart Club** had improved their knowledge about Strep sore throat, RHF and RHD, the responses were variable and with good promise. First, it was clear that being a member of a Heart Club was a high profile position, and if you were a pupil you were likely to have been trained (**Table 3**). In fact, 56% of the pupils and 68% of the teachers interviewed (trained or not) knew about a Heart Club.

Pupils	Heart club member		Total
	Yes	No	
Trained	28	13	41
Untrained	0	79	79
Total	28	92	120

Teachers	Heart club member		Total
	Yes	No	
Trained	21	34	55
Untrained	8	45	53
Total	29	79	108

Table 3: Training status of members of heart clubs – pupils and teachers (N=120, Pupils; N=108, Teachers)

In addition, both pupils and teachers who were trained agreed that their **knowledge about sore throat, RF and RHD had improved**. Two-thirds of those trained clearly knew that the purpose of the Heart Club was to educate pupils and parents about RHD (**Figure 4**).

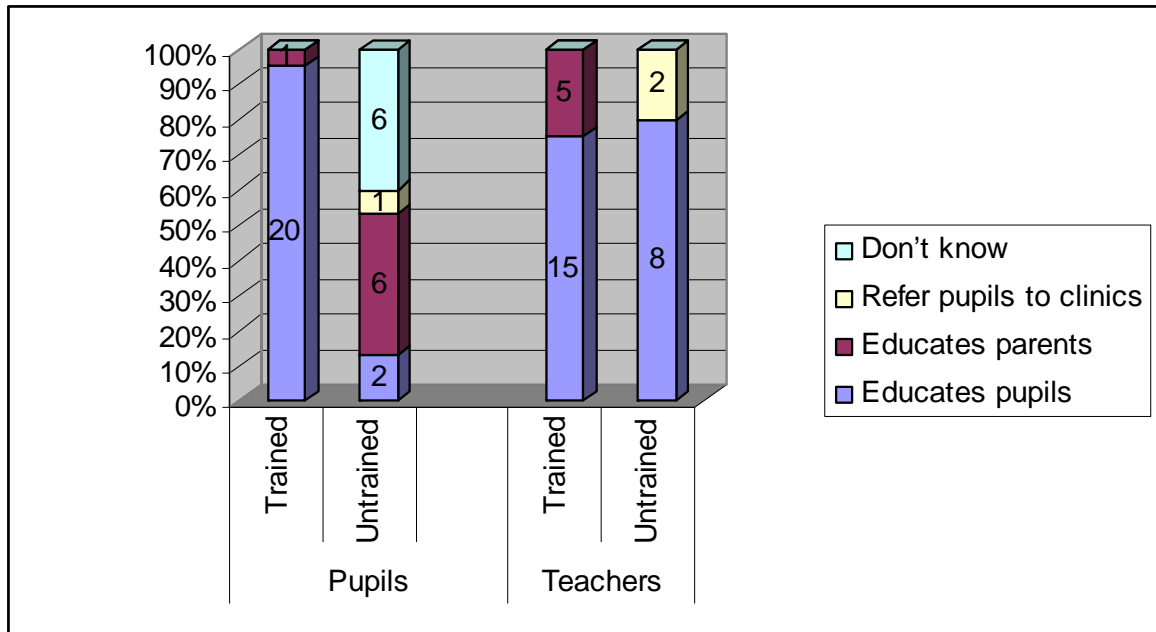


Figure 4: Knowledge of pupils and teachers about the benefits of heart clubs (N=36, Pupils; N=30, Teachers)

Knowledge about sore throat – pupils and teachers

The painting on the walls of 32 schools in Eastlands illustrating the human circulatory system and listing signs of symptoms of RF – **the Kenya-Heart Talking wall – is popular** in those schools. Overall, about 50% of those interviewed, trained and untrained, had seen the wall painting (**Table 4**)

Pupils	Ever seen a 'Talking wall'?		Total
	Yes	No	
Trained	25	15	40
Untrained	27	49	76
Total	52	64	116

Teachers	Ever seen a 'Talking wall'?		Total
	Yes	No	
Trained	29	24	53
Untrained	21	32	53
Total	50	56	106

Table 4: Pupils and teachers who have seen a 'Talking Wall' (N=116, Pupils; N =106, Teachers)

As expected, the pupils interviewed, who were mainly in their final year of primary school, **had an excellent knowledge of the human circulatory system**. Over 80% of them knew that the heart had four chambers; and virtually everyone knew that ‘blood from the heart takes oxygen to the rest of the body’, and ‘blood from the rest of the body brings carbondioxide back to the heart’. This is part of the concept of blue blood (venous) and red blood (arterial) captured in the painting. Similarly, teachers had good knowledge about these basic concepts.

More importantly, however, both pupils and teachers were asked whether they had ever looked at a sore throat. About 30% of pupils had seen a sore throat compared to 65% of the teachers (**Table 5**). However, there was **no difference in their knowledge when asked ‘how strep sore throat looks like’**, especially with regard to ‘red tonsils’ and ‘pus tonsils’ as important signs of infection (**Figure 5**). Proportionally, more teachers than pupils - irrespective of their training status - thought that swollen tonsils were a major sign of strep sore throat. Overall, these findings are in keeping with the information in the KHNH education booklet entitled “*Strep Sore Throat What do I do?*” (**Appendix C**). This book, in part, says the following about Strep sore throat:

‘The back of the child’s mouth and the tonsils become very red and swollen’

Pupils	Ever looked at a sore throat?		Total
	Yes	No	
Trained	18	19	37
Untrained	12	50	62
Total	30	69	99

Teachers	Ever looked at a sore throat?		Total
	Yes	No	
Trained	29	17	46
Untrained	34	16	50
Total	63	33	96

Table 5: Pupils and teachers who have looked at a sore throat (N= 99, Pupils; N = 96, Teachers)

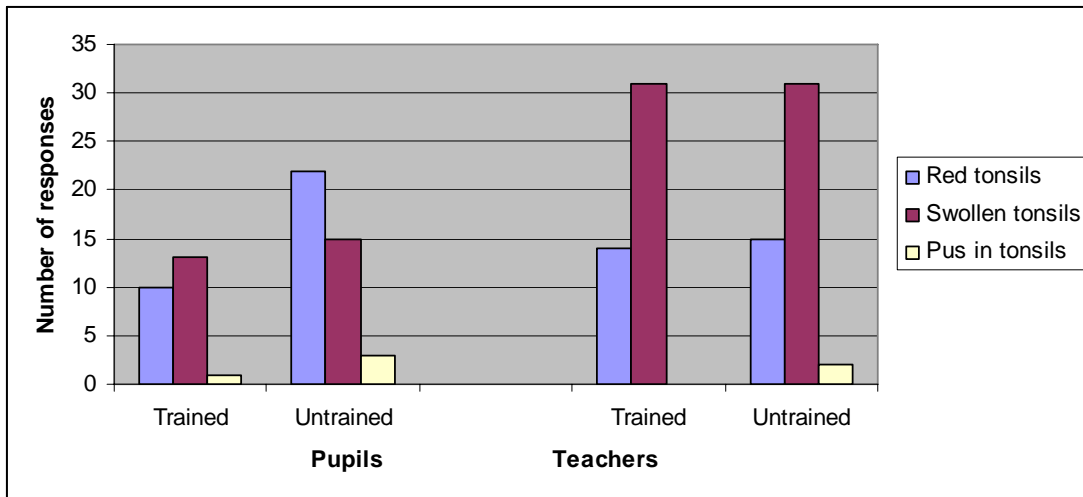


Figure 5: Knowledge of pupils and teachers about signs of a sore throat (N= 65, Pupils; N = 95, Teachers)

Further to the questions above, both pupils and teachers were asked three other questions: (i) how Strep sore throat affected the heart, (ii) how long after Strep sore throat infection is a child likely to develop RF, and (iii) how many episodes of strep sore throat does a child need to have damage to the heart. With regard to the first question only one-third of the pupils and a half of the teachers (trained and untrained) knew that **Strep sore throat could lead to heart valve and muscle damage (Figures 6 and 7)**. Notably, these ratios were reversed for those who didn't know the relationship between Strep sore throat and the heart. Moreover, among those who did not know, whether pupils or teachers were likely to be untrained.

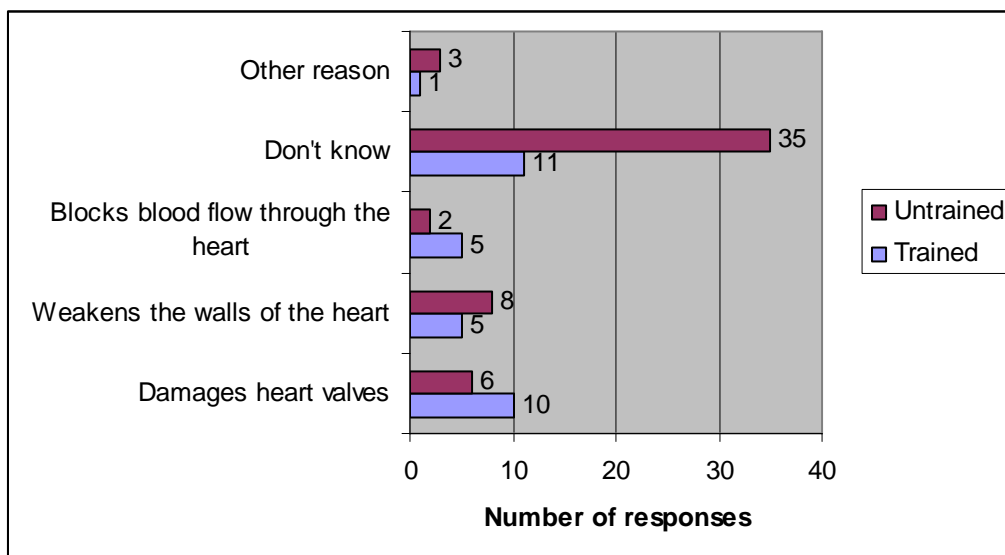


Figure 6: Knowledge of pupils about the effect of Strep sore throat on the heart (N = 86)

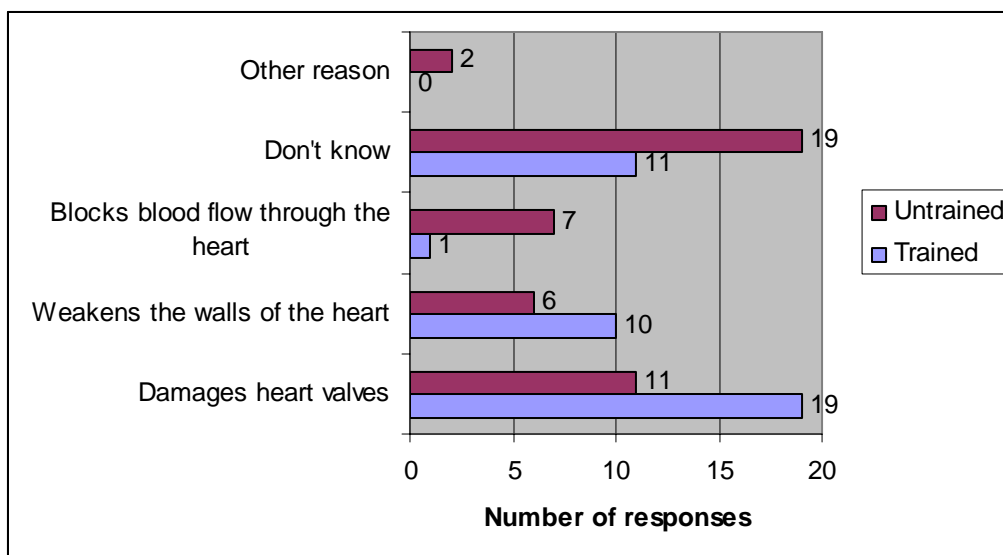


Figure 7: Knowledge of teachers about the effect of Strep sore throat on the heart (N = 87)

Twenty five percent of the teachers knew that **ARF could follow within two weeks of strep sore throat infection**; but 19% did not know this critical time period. Equally, only 10% of pupils knew the two-week period and one third had no idea about this time frame. It is worth noting that, the knowledge level was lower among teachers and pupils who had not undergone any training. And finally, the last question sought to determine the number of episodes of sore throat infections required before a child gets damage to the heart. Among the pupils who responded, 25% said five episodes, and an equal number did not know. With regard to the teachers, 10% said five episodes as well, but 30% did not know. Again the pattern of responses was similar to the answers given to the previous questions where a majority of those who did not know had not attended any form of training in the past.

Knowledge about RF/RHD among pupils and teachers

The pupils' and teachers' knowledge about RF and RHD was assessed further. First, both groups were asked to say who is at risk of these two conditions. About 45% of the pupils and 60% of the teachers who responded thought the following were most likely at risk: children who have recently suffered a sore throat; untreated sore throat; and poorly treated sore throat. But only about 25% of both groups thought that **children between 5-15 years of age were at highest risk**. An equal number of respondents thought that children under five were also at risk. As expected, the responses were comparatively better among those who had previously attended training.

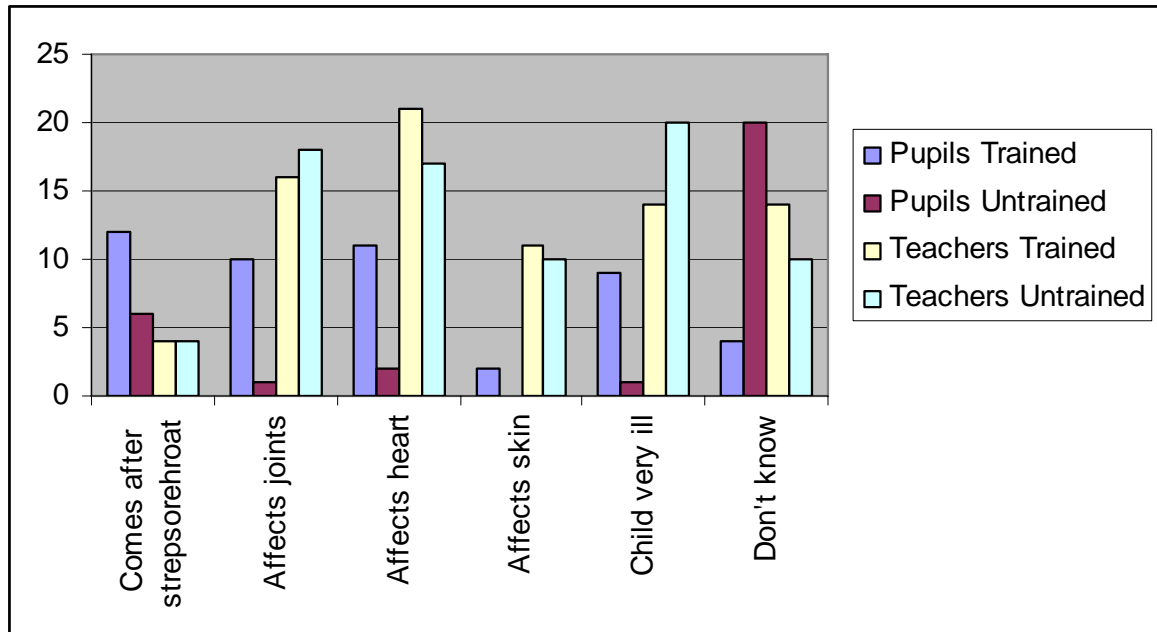


Figure 8: General knowledge among pupils and teachers about the effects of RF (N= 90, Pupils; N=87, Teachers)

Secondly, they were asked what they should individually do for a child suspected to have ARF. [What should you do for a child you suspect has ARF?] This question drew impressive responses. About 80% of pupils and over 90% of teachers (trained and untrained in both groups) strongly felt that the child should be referred to the nearest hospital. However, when asked what they understood by Rheumatic Fever, the responses were variable. Most **pupils and teachers who had attended training knew the disease follows a sore throat infection**, and it affects joints, the heart and skin (**Figure 8**). Overall, knowledge about skin involvement was the lowest in the two groups. And, unlike pupils, more trained teachers did not know what RF is compared to their untrained colleagues.

There were additional questions about RHD signs and symptoms and general treatment. Overall, about 65% of **teachers and pupils (trained and untrained) knew the common symptoms of RHD** e.g. shortness of breath on physical exertion, general body weakness, and an irregular heart beat especially on exercise (**Figure 9**). However, among those who did not know these symptoms, 43% had not attended any training compared to 17% who had trained in the past.

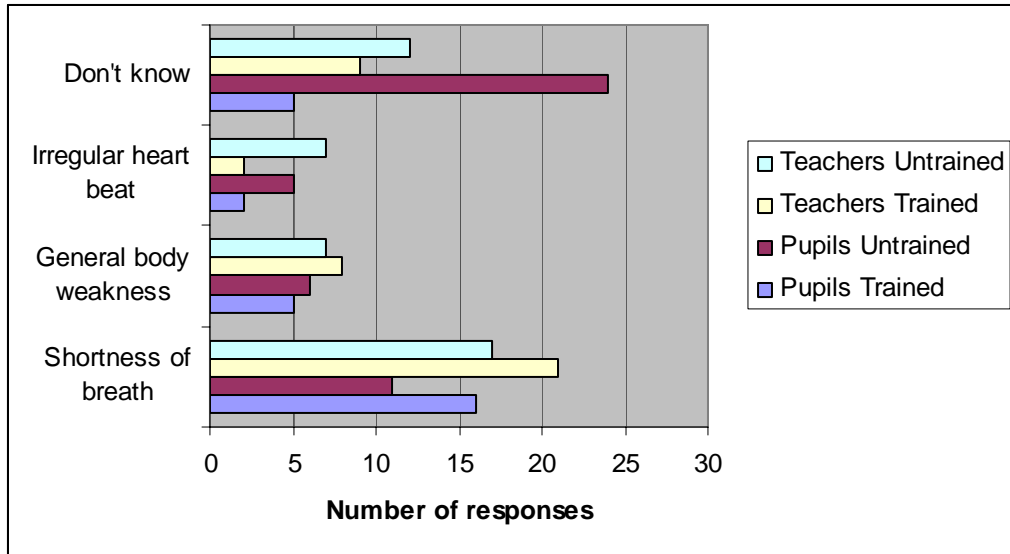


Figure 9: Knowledge of pupils and teachers about symptoms of RHD (N=74, Pupils; N=83, Teachers)

Further, they were asked how RHD is treated. Among all the respondents, 40% said heart operation, 33% medicine, and 27% did not know (**Figure 10**). Pupils who did not know how RHD is treated were constituted by 44% from the untrained and only 25% of the trained group. Again, **this illuminates the value of training** among these school children.

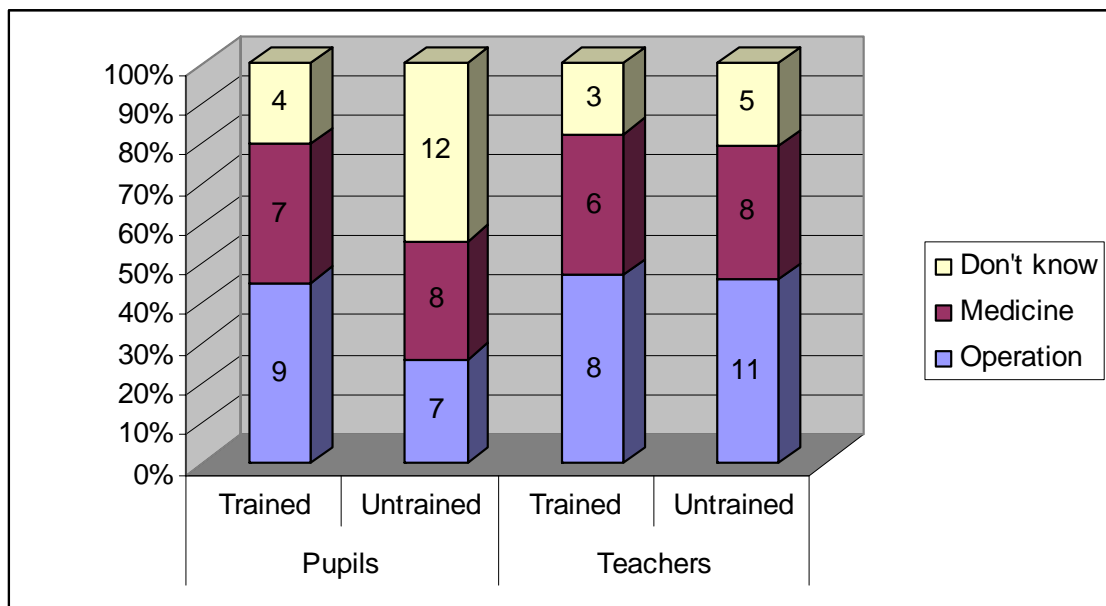


Figure 10: Knowledge of pupils and teachers about treatment of RHD (N=47, Pupils; N=41, Teachers).

The parents

Knowledge about Sore throat – parents and pupils

Children's knowledge about public health problems may sometimes influence their parents' health seeking behaviour. Although this survey did not strictly address this aspect, it is clear that all **parents whose children belonged to a Heart Club (trained) were themselves trained**. It is possible that the children's training may have influenced their parents' decision to train as well. But this is difficult to prove from the available data. However, all parents who had undergone training had at one time also looked at a throat of a child with a sore throat (**Figure 11**).

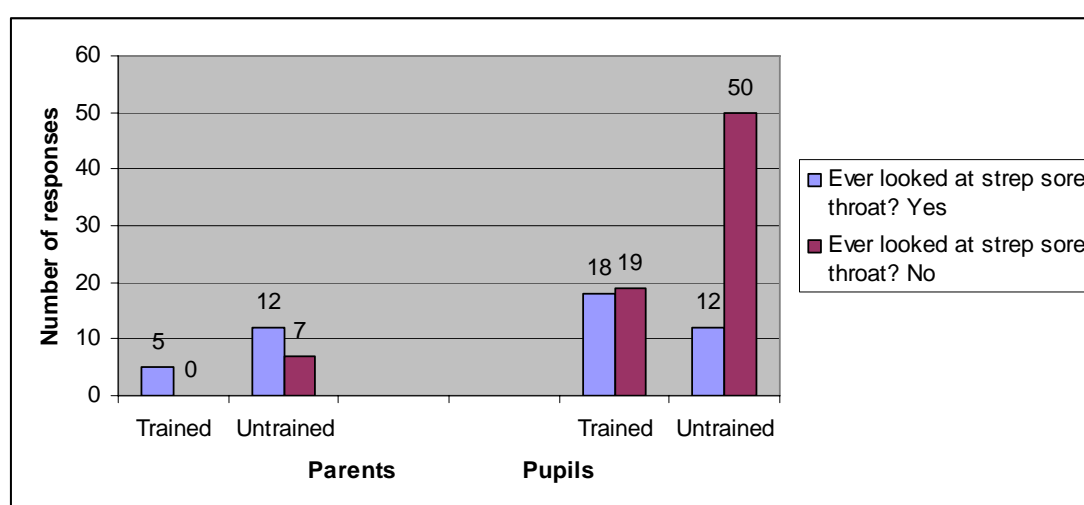


Figure 11: Knowledge of parents and pupils who had looked at sore throat

HEALTH PROVIDERS

Diagnosis and treatment of Streptococcal sore throat

A total of 31 health providers (nurses and clinical officers), 69.6% female, and 26.7% self-employed (running private clinics) were interviewed. A majority (63%) of the respondents worked in public dispensaries and health centres. About fifty percent of all those interviewed had attended at least one seminar organised by the KHNF. All but one had never diagnosed a child with Strep sore throat, perhaps signifying the laboratory support required to confirm the diagnosis.

Fifty percent of the respondents worked in facilities with a 'laboratory'. However, virtually all respondents irrespective of their training status recognised that red and swollen tonsils were an important sign of Strep sore throat infection that required treatment. And 95.5% knew that the cause of Strep sore throat is a bacterium. Despite this knowledge, 29.6% of all respondents thought that **Strep sore throat could be treated at home** without clinical consultation (**Table 6**). Asked what priority medication they would administer, only 48% chose oral penicillin (**Figure 12**). This choice was not influenced by whether they had attended a training seminar or not (**Table 7**)

Health provider	Can Strep sore throat be treated at home?		Total
	Yes	No	
Trained	3	10	13
Not trained	5	9	14
Total	8	19	27

Health provider	Does your facility have laboratory?		Total
	Yes	No	
Trained	6	6	12
Not trained	7	7	14
Total	13	13	26

Table 6: Knowledge of health providers about diagnosis and treatment of sore throat and RF (N=27)

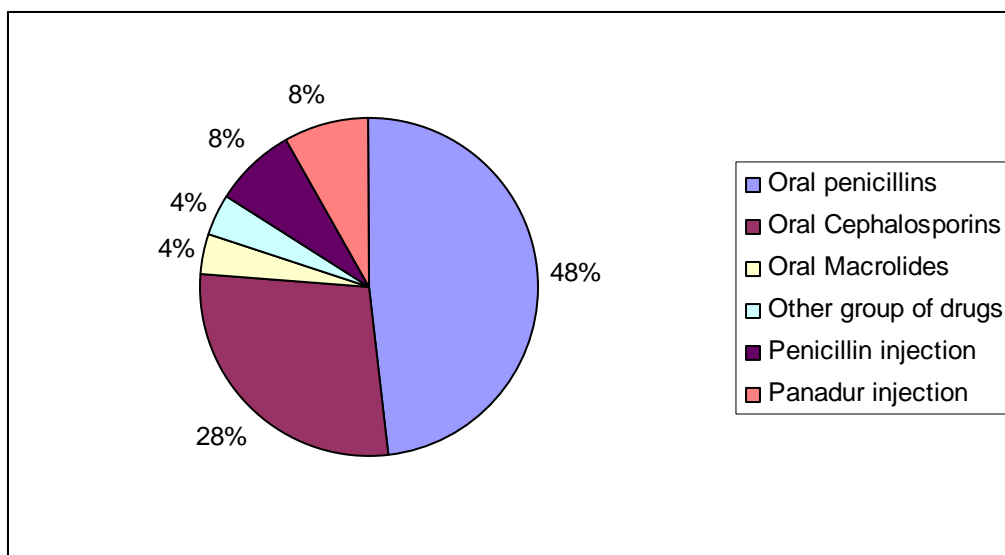


Figure 12: Antibiotic preference of health providers for treatment of Strep Sore throat (N= 25)

Health provider	How to treat Strep sore throat					Total
	Oral Penicillins	Oral Cephalosporin	Oral Macrolides	Penicillin injection	Panadur injection	
Trained	5	3	0	1	2	11
Untrained	6	4	1	1	0	12
Total	11	7	1	2	2	23

Table 7: Antibiotic preference of health providers for treatment of Strep Sore throat based on previous training (N= 23)

When asked how Strep sore throat affects the heart, the responses were equally variable (**Figure 13**). A majority (**92.3%**) **knew that it could lead to damage of the heart valves**. Only two health providers did not know the relationship between Strep sore throat and heart valve disease. Both had not attended any training seminar in the past.

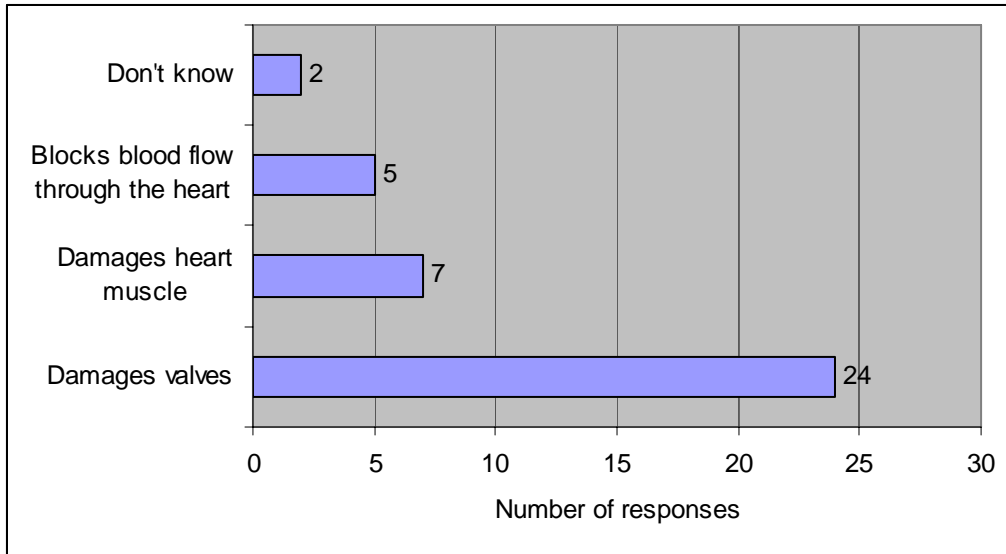


Figure 13: knowledge of health providers about the relationship between Strep sore throat and valvular heart disease (N=26).

Knowledge about Acute Rheumatic Fever

Asked whether they had ever diagnosed ARF in their professional lives, only 24% answered affirmatively (**Figure 14**). This response rate was higher than when a similar question was asked about Strep sore throat. Again this highlights the inherent differences in making clinical and laboratory based diagnoses. Among the respondents, **only 25% knew the revised Jones Criteria in its broad sense** – minor and major signs and symptoms. However, when asked to list the signs and symptoms of ARF, the level of knowledge was more impressive (**Figure 15**).

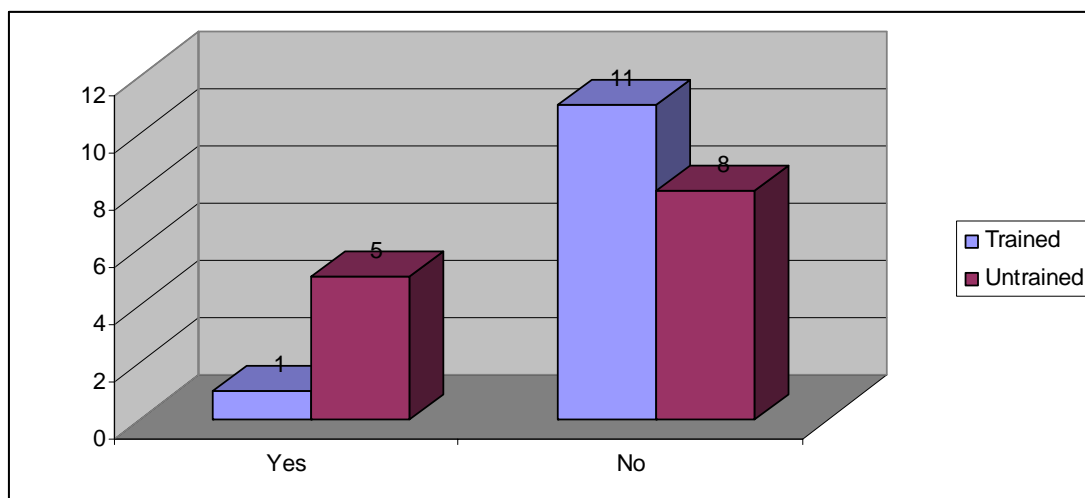


Figure 14: Number of health providers who have previously diagnosed ARF (N=25)

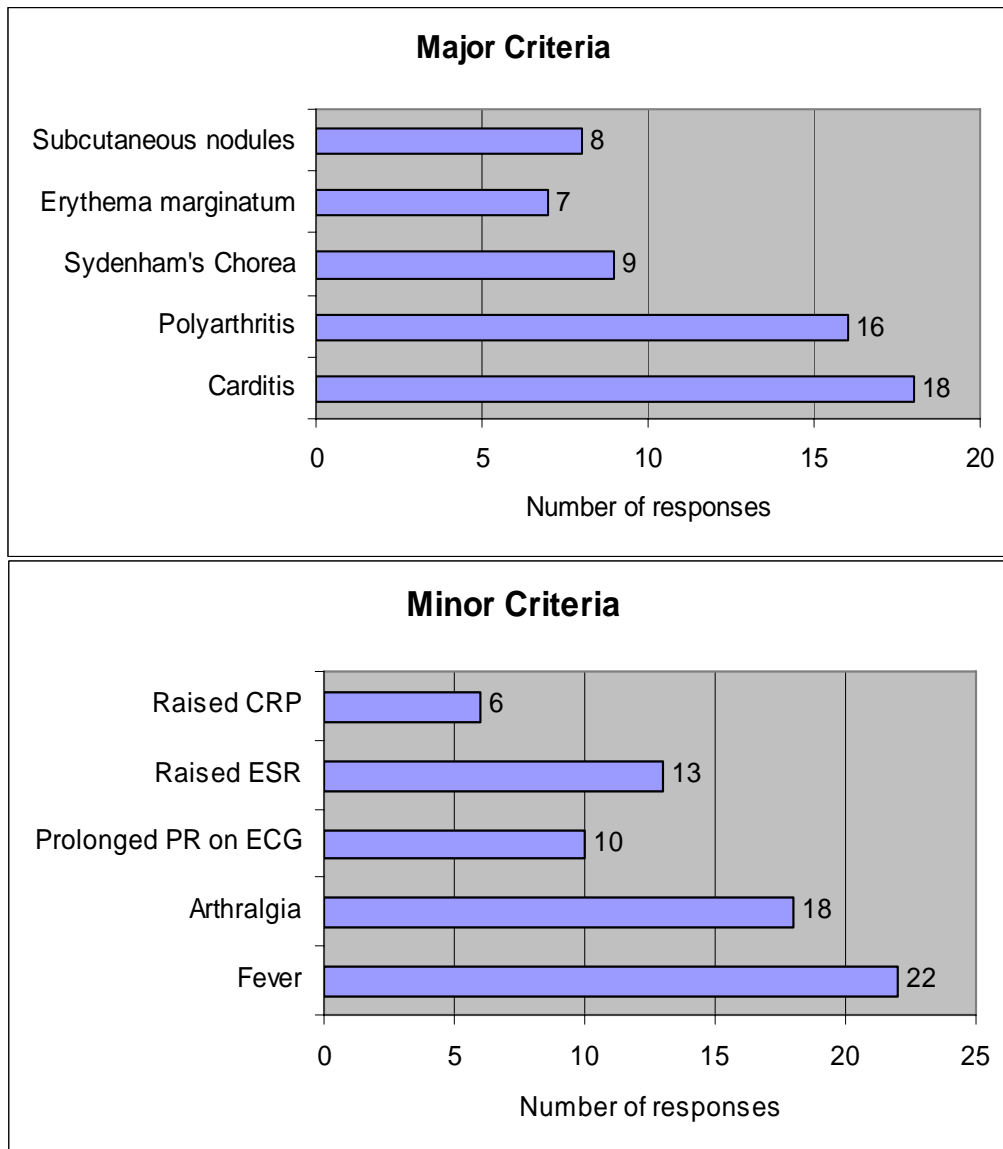


Figure 15: Knowledge of health providers about the revised Jones Criteria (N=26)

Over 60% listed Carditis, Polyarthritits and Fever all combined, whilst less common presentations like Chorea and supporting laboratory investigations (e.g. ECG and CRP) were scored by less than 35% of the respondents. **Prior training had no influence on the three commonly picked signs and symptoms.** However, those who had attended training were more likely to select the less common presentations including the minor signs and symptoms that help support the diagnosis, namely: subcutaneous nodules, erythema marginatum, chorea and the laboratory investigations. A similar pattern was observed among those who had attended training, especially their knowledge about the diagnostic guidelines for ARF and the duration of treatment (**Table 8**).

Health providers	Guidelines for ARF diagnosis			Total
	Two major plus evidence of Strep sore throat	One major, two minor plus evidence Strep sore throat	Don't know	
Trained	8	3	0	11
Not trained	7	2	3	12
Total	15	5	3	23

Table 8: Knowledge of health providers about guidelines for ARF diagnosis (N=23)

Health providers	Duration of treatment follow-up for confirmed ARF						Total
	1 yr	2 yrs	Up to 18 yrs	Up to 25 yrs	Lifetime	Don't know	
Trained	1	2	4	2	4	0	13
Untrained	0	0	2	3	4	5	14
Total	1	2	6	5	8	5	27

Table 9: Knowledge of health providers about the duration of treatment follow-up for confirmed ARF (N=27)

When a diagnosis of ARF is suspected in a child, individual health providers were asked what appropriate action they would take. Some indicated that **they would investigate first before referring**. But, of the 28 facilities that responded, only the following investigations can be done: throat swab 7; Antistreptolysin Antigen Test (ASOT) titres 4; Erythrocyte Sedimentation Rate (ESR) 6; and full blood count 9. Over 90% said they would refer to the nearest hospital with or without investigations. Further enquiry into what they expected would be the important investigations in hospital; two-thirds said ASOT titres while over 95% said ESR. Despite this level of knowledge, **75% did not know the cut-off value for ASOT titres** and only 50% knew how they would use the test results. Similarly, 80% thought ESR measured the 'amount of infection' in blood and only 20% knew it is a measure of 'blood viscosity'. These differences were the same irrespective of whether respondents had attended a training seminar or not.

For children already diagnosed with RF, the health care providers were asked what they understood by the phrase – secondary prophylaxis management plan. About 60% (both trained and untrained) said **they would give the first dose of Panadur (Benzathine penicillin G)**¹. All other aspects of secondary prophylaxis management plan received very low responses, with dental examination receiving the least, only 14% (**Figure 16**).

¹ Benzathine penicillin is locally and popularly known as Panadur

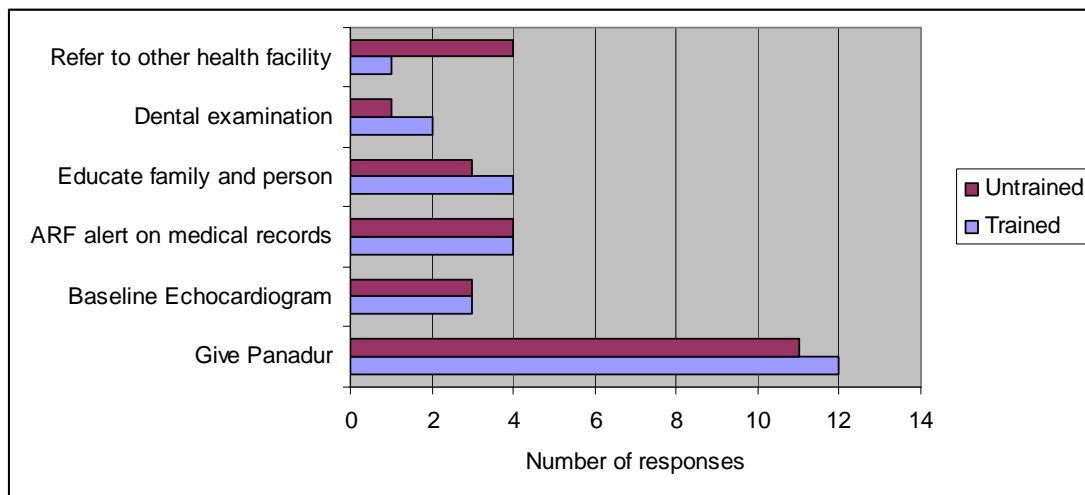


Figure 16: Knowledge about secondary prophylaxis for RF among health providers (N=21)

The respondents were further asked to state which children qualified to receive secondary prophylaxis. Fifty six percent thought **ARF confirmed by the Jones Criteria required prophylaxis**, while only 25% thought laboratory confirmed RHD was an indication (**Figure 17**). There were no significant differences in responses with regard to previous training.

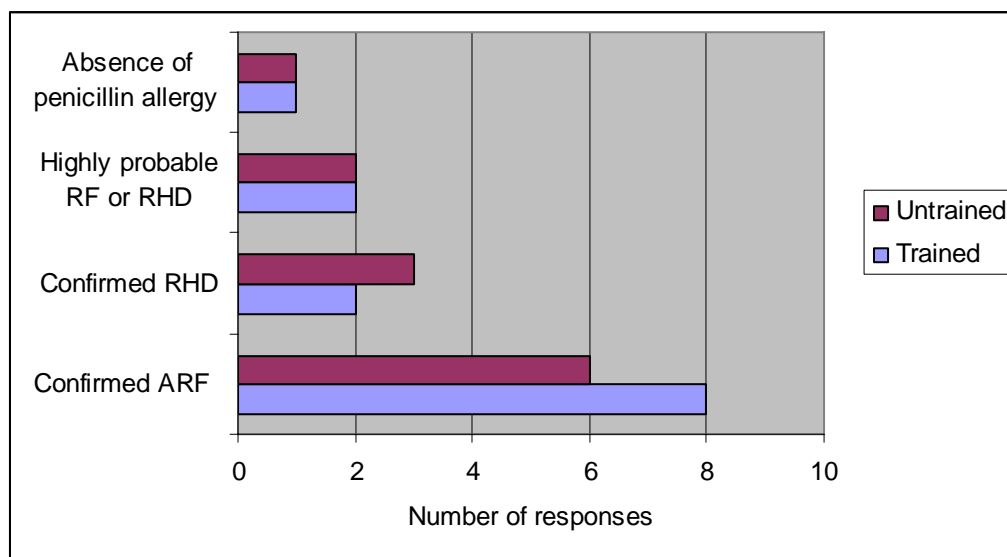


Figure 17: Knowledge about indications for secondary prophylaxis among health providers (N=25)

In addition, health providers were asked the reasons for giving long-term preventive antibiotic treatment. Twenty five of them answered this question and their responses were variable and informative. Two-thirds (trained and untrained) said **the aim was to prevent further strep sore throat infections**, while about one quarter felt its purpose was to prevent the

development of ARF. Only two respondents said the aim was to prevent the development of RHD. All respondents were finally asked what other antibiotics they would use as alternatives to Benzathine penicillin G (Panadur), the responses were as follows: Oral penicillin V 250 mg twice daily, 56%; Oral Erythromycin 250 mg twice daily, 36%; and two respondents did not know which alternative they would use (**Figure 18**). Indeed, all but one of the respondents had access to local guidelines for the treatment of ARF.

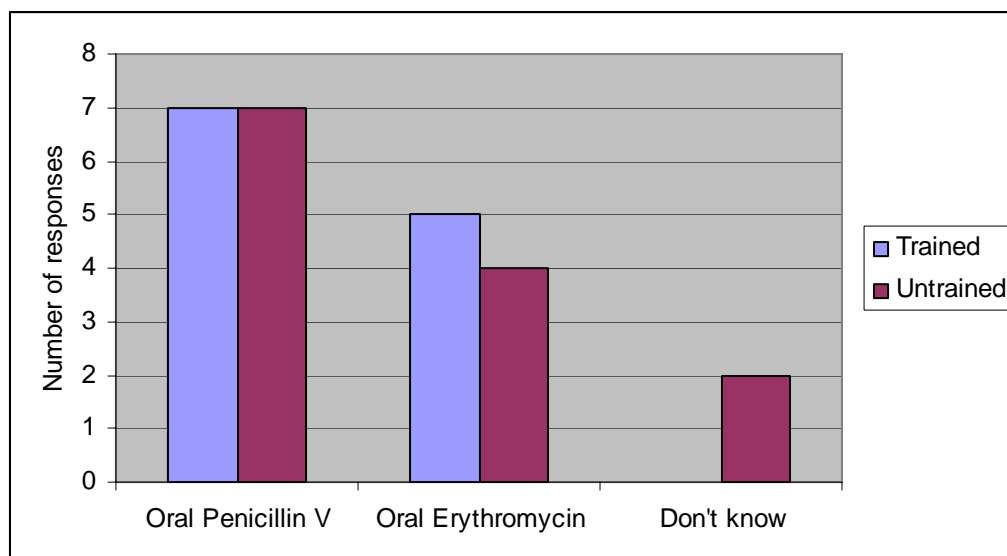


Figure 18: Knowledge about alternative antibiotics for secondary prophylaxis (N=25)

In view of the importance of Penicillin, and especially Benzathine penicillin in the management of RHD, the health providers were asked about the number of children who came to their respective clinics for monthly injections and if they had enough penicillin in stock. Eight children from as many health facilities were noted as coming for regular monthly injections. Thus, almost **25% of the clinics in Eastlands have at least one child on regular Benzathine penicillin treatment** (Table 10).

Health providers	Number of children who come for monthly Panadur injections		Total
	Yes	No	
Trained	5	5	10
Untrained	3	10	13
Total	8	15	23

Table 10: Number of children on regular monthly Benzathine Penicillin injections (N=23)

With regard to availability, the answers were different based on the type of health facility. First, almost 80% of the children who received regular injections attended either local dispensaries/health centres or private clinics. Yet, a significant number of those facilities did not have Benzathine Peinicillin: 1/4 (25%) of the dispensaries, 2/3 (67%) of the health centres and 3/4 (75%) of the private clinics (**Table 11**). Secondly, the staff recognised the importance of continuing treatment and therefore patients (their parents and guardians were) sent to local chemists to purchase penicillin when it was not available.

Type of Health facility	Is Benzathine penicillin available?		Total
	Yes	No	
Dispensary	4	1	5
Health Centre	6	4	10
Sub-district Hospital	1	0	1
Referral Hospital	1	0	1
Private Clinic	4	3	7
Private Hospital	1	0	1
Total	17	8	25

Table 11: Availability of Benzathine Peinicillin in health facilities in the Eastlands area

Knowledge about Rheumatic Heart Disease

About 90% of health care providers (trained and untrained) knew that children with recurrent sore throats were at risk of RHD. Further, virtually all of them knew that the main signs and symptoms of the disease were: shortness of breath on exertion, generalised body weakness, swelling of the feet, among others. In addition, **90% knew that children with RHD required regular hospital evaluation**. Despite this high level of knowledge, in the last three years, only one practitioner remembered referring a child with RHD to the main national referral centre, the KNH in Nairobi.

Overall, in the one month preceding the survey the health providers said they had received a number of referrals. Twenty one children had sore throat (suspected strep sore throat), one with RF and another with suspected RHD. On the other hand, 14 health providers (10 untrained and 4 trained) had never received any referrals. Of the referrals received, three were 'self referrals'; one from the school, while the rest were unknown.

Since July 2007 the KHNF designed special data forms to capture all patients with sore throat, RF and RHD – old and news cases – seen in the public clinics within the project area (**Appendix D**). Records Clerks/Officers from the have been trained in the proper use of the forms and reporting work is in progress.

Knowledge about the KNHF and its work

All respondents were asked if they had ever heard of the KNHF and its work. Two-thirds of the group (trained and untrained) knew about the organization, and one half of those who had never attended KNHF’s training seminars also knew about it (**Figure 19**) However, when asked to state the precise work of the Foundation, the responses were informative. Charity walks to raise money for cardiac operations as well as **seminars on RHD prevention were the best known of KNHF’s work**. In contrast, and as expected, a majority (80%) of those who did not know KNHF’s work had not attended any of its past events (**Figure 20**).

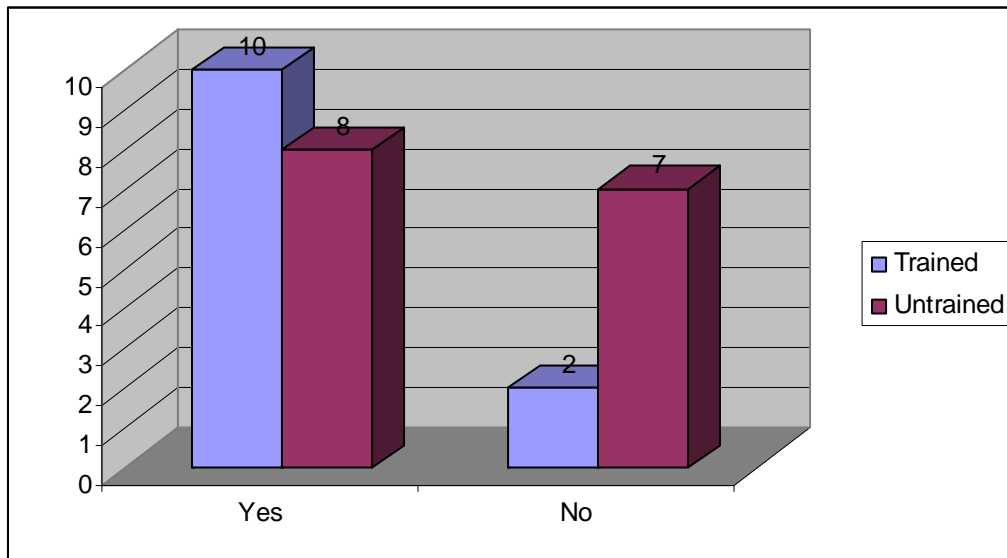


Figure 19: Knowledge about the KNHF among health providers (N=27)

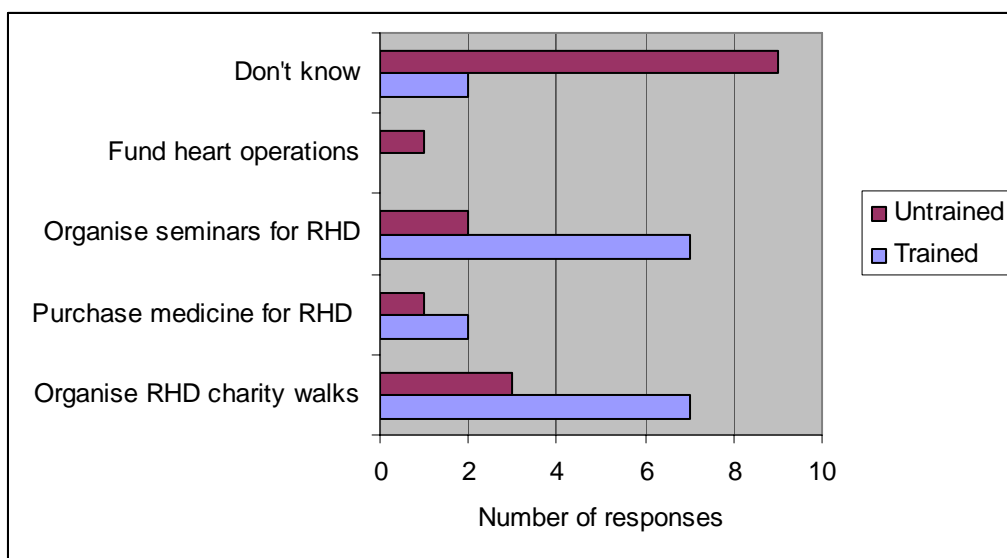


Figure 20: Knowledge about the KNHF’s work among health providers (N=21)

Health providers	Are there any KHNF educational materials?		Total
	Yes	No	
Trained	5	5	10
Untrained	0	15	15
Total	5	20	25

Table 12: Availability of KHNF educational materials

The health providers were asked whether they had access to the KHNF's educational materials – booklets, posters and leaflets. Interestingly, 50% of the staff who responded did not have access and so were all the untrained staff (**Table 12**). Those who had access to the material said the posters were clearly hanged on the notice boards while booklets were given to them. Some of the untrained staff members who did not have the materials thought that, perhaps, colleagues may have taken them home.

The local Committees

Twenty nine local committee members were given a short interview to elicit knowledge about their work. Most of them had attended a training seminar in the last one year. They were asked to state what they thought were the main activities of the KHNF. About 60% thought the main activity was to educate the community (**Table 13**). Fifty percent had previously worked with the KHNF to organise a community meeting.

KNHF activity	Frequency	Percent
Educate community	10	58.8
Fund raising	5	29.4
Sensitize and train community on RHD	2	11.8
Total	17	100.0

Table 13: Knowledge of local committees about the work of KHNF

Their knowledge about RF/RHD was good. About two-thirds knew RF resulted from sore throat infection or poorly treated sore throat.

COMMENTS

Rheumatic Heart Disease: a public health problem

These comments are discussed within the context of the survey findings and focus mainly on the questions posed in the TOR and the existing initiatives on RHD prevention on the African continent. Clearly, the **KHNF is tackling an important public health problem**, which is largely neglected by most governments in Africa. Moreover, to the best of our knowledge, it is the only organisation in Kenya working actively on RHD prevention. The pilot project is implemented in a defined geographic area, Eastlands that is densely populated, with poor infrastructure and sanitation facilities providing an environment for Streptococcal throat infection – a precursor to RHD.

Primary prevention for combating RHD

It is evident that surgical treatment of RHD is expensive and unaffordable to virtually all families living in the Eastlands area of Nairobi. It is estimated that at the national referral hospital where treatment is subsidised, it costs up to KSh. 350,000 (three hundred and fifty thousand Kenya shillings) or approximately US\$ 5,000 (five thousand US dollars) to treat one child. The **KHNF has six children on a surgical waiting list** at the national referral centre, and they have previously fundraised for others to receive treatment. This information gives a snapshot of the national crisis facing Kenya, and similar developing countries, in treating patients with rheumatic valvular heart disease. Primary prevention is therefore supremely important and its role in combating RHD cannot be overemphasized.

The Eastlands area of Nairobi provides one of the **best opportunities for a RHD primary prevention** site: it is densely populated and houses just over 50% of Nairobi's residents, mostly workers with low socio-economic status; household overcrowding is a way of life (up to 2-6 of the school children share one bedroom); and poor sanitation is common. More importantly, the area has two-thirds of all primary schools in Nairobi providing a single large target audience of pupils, teachers and parents. In addition, Kenya's national demographic surveys¹ show that persons below the age of 15 years constitute 45% of the population. It is believed that the population structure in Eastlands is likely to be the same.

Approach to RHD primary prevention

The KHNF programme of activities in the pilot area include: raising public awareness through education; improving the knowledge of health personnel in the detection, treatment and reporting of Streptococcal sore throat and RF/RHD; and raising funds for the evaluation and treatment of children with RHD as well as Congenital Heart Disease (CHD). With regard to the first activity, KHNF employs a range of methods which include workshops,

¹Kenya National Bureau of Statistics. Kenya Facts and Figures 2006. Available at <http://www.cbs.go.ke/>. Last accessed October 30, 2008

seminars, open-air public meetings, pamphlets and leaflets, 'talking walls', role play by school children, and the media. The **preferred methods are seminars and workshops**. And in the last two years alone 23 major training seminars have been conducted each costing about KSh 90,000 (ninety thousand shillings) or US\$ 1200 (one thousand two hundred US dollars). Based on the information available, and in the absence of comparative cost and impact analysis of other methods, it is difficult to comment objectively on cost effectiveness. It is obvious, however, that the **cost of preventing one potentially risky sore throat is insignificant** compared to the huge resources required to treat a single case of established RHD. In addition, given the type of project, centralised seminars and workshops are good value for money, especially for initiating awareness campaigns. Additional targeted workplace meetings to monitor the effectiveness of the knowledge learned in seminars would add greater value to the achievements of the big seminars. Nevertheless, the cumulative value of all the training activities has recently been summed up by Ms. E Gatumia (the CEO of KHNF), when she wrote:

"Creating awareness about heart disease prevention in Kenya and Africa, as a whole, is a matter of urgency and a matter of Life and Death"

These words not only underpin the work of KHNF, but also highlight one of the cornerstones of the A.S.A.P. programme¹ - a pan African programme that concentrates on four areas of activity: (i) raising the **awareness** of the public and health care workers with regard to RF and RHD; (ii) improving the quality of information available on the incidence, prevalence and burden of RF/RHD through epidemiological **surveillance**; (iii) working together as **advocates** to change public policy for the improvement of health care facilities needed to treat and prevent the disease; and (iv) working towards the establishment of national primary and secondary **prevention** programmes for RF and RHD².

Within the A.S.A.P. framework, KHNF's core activities have concentrated almost exclusively on raising awareness. More recently, however, efforts have been made to start systematic case reporting of sore throat and RF/RHD using data sheets. This broadens the Foundation's work to include surveillance. To make this system robust and more efficient, consideration needs to be given to creating a RHD registry at the local district hospital. This registry can be supported by a full Electronic Medical Records (EMR) system and should be in conformity with the national reporting guidelines.

To achieve its long term objectives, the KHNF has begun to build strong partnerships and collaborations. At local level, the organization maintains a very **good working relationship with the city education and health departments**, as well as having strong links with the Ministry of Health (MoH). In addition, it is clearly visible that deliberate efforts have been invested in nurturing a good working relationship with the local administration and

¹ ASAP: RF/RHD, Awareness, Surveillance, Advocacy and Prevention programme in Africa coordinated by the Pan African Society of Cardiology in collaboration with the World Heart Federation and the World Health Organization.

² Robertson, K.A., J.A. Volmink, and B.M. Mayosi. S Afr Med J., 2006. 96(3 Pt 2): p. 241-245

community leaders. The latter has played a key role in making the pilot more acceptable to local communities and it is also expected to serve as a foundation for community ownership of the project – an essential component of project sustainability. On the other hand, however, there is no formal collaboration with the local professional groups like the Kenya Cardiac Society (KCS). Despite this, the KHNF enjoys support from a few members of the KCS who facilitate at its training seminars and perform clinical evaluation of children suspected to have RHD living in the project area.

Achieving the project goals

As described in the project documents, the purpose of the RHD prevention project is threefold: (i) to create awareness amongst residents of Eastlands area on prevention of RHD through education and information; (ii) by teaching residents how to identify a Strep sore throat, RF and RHD; and (iii) to advise them on what to do for each of these stages. Furthermore, the project seeks to improve the knowledge and practice of health practitioners through training and to engage civil society through building sustainable local committees. Has the project done what it set out to do in the best possible way?

Clearly, there have been good achievements scored, significant progress made and number of lessons learned. Among the target audience, and especially those who have undergone training, the **knowledge level about strep sore throat and RF/RHD is very good** among school teachers and children, but only average among health care providers. More importantly, is the increasing level of knowledge among parents and the involvement of the local communities through committees. To the best of our knowledge there are no other school based projects in this area that put pupils first in the endeavour to make public health change. This is highly commendable. It should be remembered that ten years from today, most children involved in this project will be young adults with various responsibilities, including leadership. This project is therefore training future leaders in RHD prevention.

The disparity in the knowledge level between schools and health facilities requires further reflection. Both were exposed to similar training seminars, educational materials, and support. Yet, the outcomes are vastly different. The success in schools may be attributed to **training reinforcement provided through the Kenyan-heart clubs** and strong local leadership by trained teachers. The presence of the ‘talking walls’ in schools is also a constant reminder of the RHD prevention project. In contrast, the health facilities do not have similar structures in place. Perhaps, this is the best lesson of what works well and what does not. It is important therefore, that serious consideration be given to establishing ‘Heart clubs’ for health care providers with membership drawn from multiple local health facilities – private, public and faith based. This interest group can also draw members from other professional groups like the KCS, among others.

The findings, however, of the present survey with regard to health care providers need to be contextualized. First, the three major public health

problems facing health facilities in this area are Malaria, HIV/AIDS, Tuberculosis and Maternal and Child health issues. This is a mirror image of the national health problems and, thus the areas of top priority for the MoH. In general, **communicable diseases have a better budget and time allocation** than non communicable diseases. Secondly, there are intervention programmes e.g. in reproductive health and childhood immunization that have succeeded well in the pilot area and at national level. And the RHD prevention project can learn from these projects, especially what works and what fails. Finally, the recognition by the national MoH about the urgent need to improve cardiovascular health could not have come at a better time for the pilot project. The RHD project, and indeed the KNHF, should take the opportunity to be a leader in the national effort to prevent CVD in general.

The Kenyan-Heart National Foundation

The KKNHF can be described as being measurably effective, but small for the task. Thus, the need for extra professional staff is evident. The relationship, however, between the staff, the board and the members is not clear in terms of organizational structure and administration. It will be imperative to define these relationships for effective institutional building and cohesion. This approach, among other benefits, will clearly spell out the board size, composition, and duration of service. Moreover, such fundamental **organizational structures encourage diversity of membership**, while at same time attracting new ideas and promoting self renewal. Institutional building is key to future sustainability. It forestalls collapse of programmes should the persons driving the process leave the organization – a disease that bedevils many NGOs.

Expanding the project horizon

Because of the need to reach as many people and as many groups within Nairobi city and its environs, the KNHF has acceded to invitations to hold seminars outside the project area. Indeed, this is a noble cause which requires support. However, with limited resources – financial and human – expanding the project activities beyond Eastlands is not sustainable at the present time. Perhaps, rather than expand in breadth, **it will be better to expand in depth**. For instance, adding a research component to the RHD prevention project will be critical now and rewarding in the long term. Research is likely to attract new partnerships, more resources and above all, publications that will increase international visibility of this important work. The A.S.A.P. programme has a number of ongoing research activities that would dovetail seamlessly with the current project activities.

Meeting the challenges and overcoming obstacles

While the KKNHF continues to score successes it has to manage traditional obstacles and overcome new challenges. The organization acknowledges that lack of baseline data from the project site remains a challenge particularly in setting a reference point for measuring success and the impact of its

activities. Although the evaluation team has partly addressed the problem by collecting and comparing data from two groups – trained and untrained – the issue may need to be revisited in order to have clear project milestones measured from a reference point. Nevertheless, the other **challenges and obstacles can be summed up as the ‘3 Cs’ – cost, capacity and culture.** Cost: according to the KHNH its budget is constantly under strain and does not even cover core activities like advertising and public relations; public education through the mass media and the training of its own staff. In addition, local committee members expect to be financially compensated for the time spent away from their businesses, which brings to the fore the issue of building the capacity required to run the project at community level. In addition, there is a shortage of volunteers at this particular level.

With regard to health facilities, the human capacity challenge is even greater. Key trained personnel – nurses, clinicians and others – often get transferred away from the project area to take up new positions elsewhere in the country. A similar problem is encountered among others working in the civil service e.g. local administrators and teachers. And, of course retirement from the service for the trained personnel is a major impediment. Mandatory retirement age from civil service in Kenya is 55 years! This has led to discontinuation of the RHD prevention activities in some schools and health facilities. Coupled with the aforementioned loss of staff is the culture of working in civil service. Traditionally, **health facilities and schools have suffered long periods of underinvestment.** Consequently, staff members in these public institutions are poorly motivated and lack the initiative to acquire new knowledge or implement new projects. Shortage of qualified personnel in some of these institutions has led heavy workloads especially in public schools and health clinics. And because of these and historical shortages in government clinics, confidence in utilising them has declined over the years.

CONCLUSIONS AND RECOMMENDATIONS

In conclusion, several key points were evident about The Nairobi Eastlands Children Heart Education Project

1. This is a unique and leading project on RHD prevention without parallel comparison in the country, and perhaps in the East African region.
2. Significant achievements have been made in sensitising school teachers and children on all aspects of sore throat, RF and RHD prevention.
3. Health care providers will benefit more from continued workplace support in the form of regular follow up through peer group seminars.
4. The growing community support for the project from parents, local administrators, faith leaders and volunteers is important and also a sign of great promise, which needs continued support for long term project sustainability.

There are challenges and indeed these are not to be ignored. During the survey, one head teacher from the untrained schools stated this:

“We are a forgotten school. For so many years we have not received any visitors here. We have also not been invited to participate in any local projects. Please do let us know your findings and also invite us to be part of the project”.

These words carry a dual message. First, the need to expand the pilot project to include more schools in the area or in the country, and especially the most disadvantaged primary schools. Secondly, the need to give feedback to the schools and other groups and persons that participated in the survey.

Several recommendations are implied in the foregoing sections of the report. In addition, the key recommendations are:

1. Every effort should be made to formally demarcate the Nairobi Eastlands Children Heart Education Project area as part of the WHF project demonstration sites.
2. The KHNF’s work of raising awareness needs to be extended to include RHD surveillance. This can be done in collaboration with KCS and as part of the A.S.A.P programme.
3. Continuous monitoring and evaluation of the KHNF’s work is critical and needs to be established. Protocols to assist in this exercise are available from the A.S.A.P programme.
4. The project needs to expand its mandate to include a research component in its objectives. This will immensely help in providing evidence for its awareness and advocacy work.

ACKNOWLEDGEMENT

The evaluation team led by two experienced cardiologists Dr. F Bukachi (MB, ChB; PhD) and Prof. B Mayosi (MB, ChB; DPhil) from the Universities of Nairobi and Cape Town respectively wish to acknowledge the contributions of the following persons and groups: Dr T K Mwendwa (MB, ChB; MPH), Epidemiologist, from the University of Nairobi for assisting with the study design, preparation of the questionnaires, and providing Figure 1; Research students at the Department of Medical Physiology, University of Nairobi, for conducting questionnaire interviews; and the staff of the KHNF for providing important data and activity reports. Special thanks to the Nairobi City Council departments of Education and Health for giving permission for the survey to be conducted. And to all persons who participated in the survey. The Danish Heart Foundation gave the funding for the survey.

APPENDICES

APPENDIX A: TERMS OF REFERENCE (TOR)

Evaluation of the Nairobi Eastlands Children's Heart Education Project

The Nairobi Eastlands's Children's Education Project has been going on for two and a half years out of tree. It is co-funded by Danida (micro project, about 300.000 US dollars) and the Danish Heart Foundation (about 70.000 US dollars).

Before applying for new funds we want an external evaluation in order to have an indication about what is working well and what is not working well.

- Is our focus on primary prevention the right choice for combating RHD
- Have we chosen the right approach by focussing on education of the following target groups: school children, parents and professional staff in the clinics. Have we chosen the right methods to reach them and are they the most relevant groups.
- Have we chosen the most cost effective approach
- Have we done what we wanted to do in the best possible way.
- Are the organisation (KHNF) qualified to carrying out the project.

Especially for the clinics we want an indication of

- If the training we have offered has been sufficient and qualified
- Have the clinics found a satisfactory number of cases and have they put the right treatment in place
- If the data collection which has been started 1. July by the provincial medical record officers in Nairobi is sufficient for monitoring and assessing development and outcome of interventions

For the future

- How can the project further qualify to grow into a demonstration project within the framework of WHF demonstration projects.
- What kind of research could further add to qualify and develop the project.

Explanation:

Beside training and organising teachers and health workers, the project has a civil society approach. In order to build KHNF as a popular and sustainable organisation it is important to involve civil society. One of the aims of the project is therefore to start local committees which as times goes by will form the basic structure of KHNF.

We have now 5 local committees in Nairobi Eastlands and they are playing an important role in educating the local population. It would be nice with a remark about that, but we don't need at thorough evaluation about them as we regardless of the result will continue to build on them as part of a long term strategy.

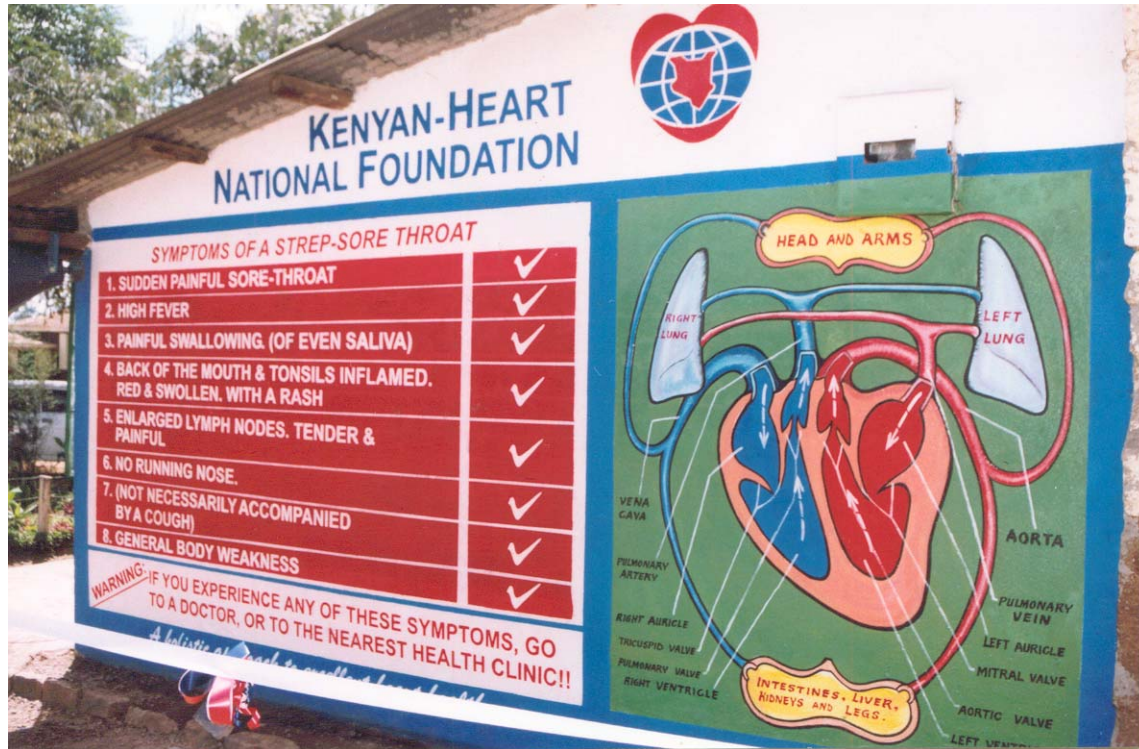
The evaluation must be conducted in close collaboration with KHNF. KHNF will help by giving all possible information. The information is confidential and can not be published or used by anyone else than Danish Heart Foundation and KHNF in full agreement.

DHF commission the evaluation and possess all rights to the results.

SV/DF d. 8/7-2008

APPENDIX B: THE “KENYAN-HEART TALKING WALL”

A sample of a “Kenyan-Heart Talking Wall” at Kiboro Primary School, Starehe Constituency



APPENDIX C: KHNH EDUCATION BOOKLET – “STREP SORE-THROAT, WHAT DO I DO?”

KENYAN-HEART NATIONAL FOUNDATION
Viking House, 3rd Floor, Westlands, Waiyaki Way, Opp. CBA, P.O. Box 59178 - 00200 Nairobi, Kenya.
Tel: 254 020 4452214 Fax: 4452214 Email: kenyanheart@wananchi.com

KENYAN-HEART NATIONAL FOUNDATION

Strep Sore Throat What do I do?

1. Strep Sore Throat

↓

2. Rheumatic Fever

↓

3. Rheumatic Heart Disease



The illustration shows a woman in a light-colored dress examining a man's throat. The man has a thought bubble above his head, indicating he is thinking about the question 'What do I do?'. The background is a light blue gradient.

 who  isfc  UNESCO DANIDA

APPENDIX D: MONTHLY DATA SUMMARY SHEET

KENYAN-HEART NATIONAL FOUNDATION

Prevention of RHD District Summary

DISTRICT NAME	NRB EAST-MARCH 08					
		Visit	Makadara Div.	Embakasi Div	Total	
DIVISION NAME	Age					
Diseases						
STREP-SORE THROAT	1-5yrs	New	0	0	0	
		Old	0	0	0	
	5-9yrs	New	0	7	7	
		Old	0	0	0	
	10-14yrs	New	0	1	1	
		Old	0	0	0	
	15-20yrs	New	0	3	3	
		Old	0	0	0	
	>20yrs	New	0	0	0	
		Old	0	0	0	
	RHEUMATIC FEVER (ACUTE)	1-5yrs	New	0	0	0
			Old	0	0	0
		5-9yrs	New	0	0	0
			Old	0	0	0
10-14yrs		New	0	0	0	
		Old	0	0	0	
15-20yrs		New	0	0	0	
		Old	0	0	0	
>20yrs		New	0	0	0	
		Old	0	0	0	
RHEUMATIC HEART DISEASE		1-5yrs	New	0	0	0
			Old	0	0	0
		5-9yrs	New	0	0	0
			Old	0	0	0
	10-14yrs	New	0	0	0	
		Old	0	0	0	
	15-20yrs	New	0	1	1	
		Old	0	0	0	
	>20yrs	New	0	0	0	
		Old	0	0	0	
	Total	New	0	12	12	
		Old	0	0	0	
	Grand Total		0	12	12	

Reported by.....DesignationDate.....Sign.....

APPENDIX E:

APPENDIX: E

KENYA HEART NATIONAL FOUNDATION PROJECT EVALUATION-INDEPTH INTERVIEW QUESTIONNAIRE (PUPILS/TEACHERS/PARENTS)

DATE INTERVIEWER'S INITIALS

DD / MM / YYYY

PARTICIPANT'S INITIALS

START TIME :
(24hrs)

END TIME :
(24hrs)

DEMOGRAPHICS

YEAR OF BIRTH GENDER MALE FEMALE

RESIDENTIAL ADDRESS

ESTATE _____ ROAD _____

IF PUPIL, DO YOU LIVE WITH BOTH PARENTS ONE PARENT

OTHER SIBLINGS RELATIVE GUARDIAN FOSTER PARENT

OTHER (SPECIFY) _____ NUMBER OF SIBLINGS

IF PARENT, OCCUPATION

UNEMPLOYED SELFEMPLOYED EMPLOYED SMALL BUSINESS

LARGE BUSINESS SPECIFY EMPLOYMENT TYPE(S) _____

INCOME PER MONTH Kshs

FAMILY SIZE NUMBER OF CHILDREN

AGES (yrs) <15 >15 NUMBER OF SISTERS <15 YEARS

RELIGION

CATHOLIC MUSLIM HINDU PROTESTANT

JEHOVAH'S WITNESS OTHER (SPECIFY) _____

DOES YOUR RELIGION PROHIBIT YOU FROM GOING TO HOSPITAL? YES

SPECIFY RELIGION _____ NO

REFUSED

HOUSING (indicate by ticking appropriate box ONLY FOR PARENTS AND PUPILS)

DO LIVE IN A HOUSE? YES NO RENTED OWNED

IF HOMELESS WHERE DO YOU SLEEP? _____

FAMILY LIVES IN NAIROBI FAMILY LIVES UPCOUNTRY

TYPE OF HOUSING NONE STONE BRICKS MABATI

MUD AND STICKS CARTONS PLACTIC PAPER

OTHER (SPECIFY) _____ NUMBER OF ROOMS

NUMBER OF BEDROOMS PERSONS SLEEPING IN SAME ROOM

CHILDREN SLEEPING IN SAME ROOM

DO YOU POSSESS ANY OF THE FOLLOWING ITEMS?

MOBILE TELEPHONE RADIO TELEVISION BICYCLE

MOTORBIKE MKOKOTENI CAR MATATU LORRY

OTHER (SPECIFY) _____

SOURCE OF WATER TAPS AT HOME WATER KIOSK BOREHOLE

NAIROBI RIVER OTHER (SPECIFY) _____

DO THE TOILETS HAVE WATER? YES NO DISTANCE TO WATER

SOURCE _____

COST OF WATER PER FAMILY EVERY DAY EVERY MONTH

HUMAN WASTE DISPOSAL PRIVATE WC PUBLIC LATRINE PIT

LATRINES BUSHES FLYING TOILET OTHER (SPECIFY)

EDUCATION

YEARS OF FORMAL EDUCATION NONE PRIMARY

(IF PUPIL)WHAT JOBS DO YOUR PARENTS HAVE?

UNEMPLOYED SELFEMPLOYED EMPLOYED SMALL BUSINESS

LARGE BUSINESS SPECIFY EMPLOYMENT TYPE(S) _____

INCOME PER MONTH Kshs

HOW BIG IS YOUR FAMILY?

NUMBER OF SIBLINGS DO YOU LIVE WITH BOTH PARENTS? YES

NO DO YOU LIVE WITH ONE PARENT? YES NO ARE YOU AN

ORPHAN? YES NO AGES (yrs) <15 >15

NUMBER OF SISTERS <15 YEARS NUMBER OF BROTHERS < 15 YEARS

FREQUENCY OF SORETHROAT IN HOUSEHOLD (in schools if teacher) (Indicate

number of times and match with number of children)

NUMBER OF CHILDREN EVER HAD SORETHROAT

NUMBER OF SORETHROATS PER CHILD

NEVER LAST MONTH LAST THREE MONTHS LAST YEAR

LIFETIME CANNOT REMEMBER REFUSED

NUMBER OF STREP SORE THROATS PER CHILD

NEVER LAST MONTH LAST THREE MONTHS LAST YEAR

LIFETIME CANNOT REMEMBER REFUSED

RECURRENT SORETHROATS PER YEAR 0 1 2 3 4 >5

TREATED SORETHROATS PER YEAR 0 1 2 3 4 >5

TYPE OF TREATMENT NONE GARGLE TABLETS INJECTION

COMBINATIONS OF ABOVE (SPECIFY) _____

DURATION OF TREATMENT (DAYS) 0 1 2 3 4 5 7

10 INJECTION ONCE A MONTH SKIPPED ANY DOSES YES NO

NUMBER OF DOSES SKIPPED TABLETS 0 1 2 3 4 5
>5

INJECTIONS _____

REASONS FOR SKIPPING DOSES

TABLETS _____

INJECTION _____

SOURCE OF TREATMENT FOR SORETHROAT NONE KIOSK CHEMIST

DISPENSARY HEALTH CENTRE HOSPITAL HERBALIST

HOMEREMEDY OTHER (SPECIFY)

ASOT ECG HAVE YOU EVER BEEN DIAGNOSED WITH

RHEUMATIC FEVER YES NO IF YES, WHO MADE THE DIAGNOSIS

COST OF TREATMENT CONSULTATION BLOOD COUNT

THROAT SWAB ASOT ECG TABLETS INJECTIONS

TREATMENT RECEIVED FOR RHEUMATIC FEVER _____

KENYAN HEART CLUBS (FOR TEACHERS AND PUPILS ONLY)

HAVE YOU EVER HEARD OF THE KENYAN HEART CLUBS? YES NO

IS THERE KENYAN HEART CLUB IN YOUR SCHOOL? YES NO

ARE YOU A MEMBER? YES NO

WHO QUALIFIES TO BE A MEMBER OF THE KENYAN HEART CLUBS?

HOW HAS YOUR CLUB MEMBERSHIP IMPROVED YOUR KNOWLEDGE ON
STREPSORETHROAT-RHF -RHD?

EDUCATE PUPILS EDUCATE PARENTS REFER PUPILS TO CLINICS

OTHER(SPECIFY) _____

WHAT ACTIVITIES ARE CARRIED OUT BY THESE CLUBS?

HOW HAS YOUR CLUB MEMBERSHIP IMPROVED YOUR KNOWLEDGE OF

1. STREP SORE THROAT?

2. RHEUMATIC FEVER ?

3. RHEUMATIC HEART DISEASE?

KENYAN HEART TALKING WALL

HAVE YOU EVER SEEN THE KENYAN HEART WALL? (SHOW PICTURE)

YES NO IF NOT HAVE YOU HEARD ABOUT IT YES NO

HAVE YOU ASKED YOUR PUPILS WHAT THEY HAVE LEARNT FROM THE

KENYA HEART TALKING WALL? YES NO

HAVE YOU ASKED OTHER TEACHERS WHAT THEY HAVE LEARNT FROM THE
KENYA HEART TALKING WALL? YES NO

HOW MANY CHAMBERS DOES THE HEART HAVE? (TICK ONLY ONE)

0 1 2 3 4 5 6 7

HOW DOES BLOOD FLOW THROUGH THE HEART TO THE REST OF THE BODY?

BLOOD FROM THE LUNGS TAKES OXYGEN BACK TO THE HEART

BLOOD FROM THE HEART TAKES OXYGEN TO THE REST OF THE BODY

BLOOD FROM THE REST OF BODY BRINGS CARBON DIOXIDE BACK TO THE HEART

BLOOD FROM THE HEART TAKES CARBON DIOXIDE TO THE LUNGS

DON'T KNOW OTHER (SPECIFY) _____

IN WHICH VESSELS DOES THE BLOOD COLOURED BLUE FLOW?

ARTERIES VEINS

DOES IT HAVE MORE OR LESS OXYGEN? MORE LESS

IN WHICH VESSELS DOES THE BLOOD COLOURED RED FLOW?

ARTERIES VEINS

DOES IT HAVE MORE OR LESS OXYGEN? MORE LESS

HAVE YOU EVER LOOKED AT STREPSORETHROAT? YES NO

HOW DOES THE STREPSORETHROAT LOOK LIKE? RED TONSILS

SWOLLEN TONSILS PUS IN TONSILS OTHER (SPECIFY) _____

CAN STREPSORETHROAT BE TREATED AT HOME? YES NO IF NOT,

GIVE REASON BACTERIA ONLY CURED BY ANTIBIOTIC DELAY IN

TREATMENT RESULTS IN RHEUMATIC FEVER CHILD MAY DIE

OTHER (SPECIFY) _____

IF YES, WHAT DO YOU USE? SALT LEMON HONEY HERBAL TEA

OTHER SPECIFY _____

HOW DOES STREP SORE THROAT AFFECT THE HEART?

INJURES GATES ALLOWING BLOOD TO PASS THROUGH THE HEART

WEAKENS THE WALLS OF THE HEART

BLOCKS BLOOD FLOW THROUGH THE HEART

DON'T KNOW OTHER (SPECIFY) _____

HOW DOES A CHILD FEEL WHEN THEY HAVE STREPTHROAT?

HIGH FEVER IT STARTS QUICKLY HURTS ON SWALLOWING

NO RUNNY NOSE NO COUGH ENLARGED LYMPH NODES

PAINFUL LYMPHNODES GENERAL BODY WEAKNESS

OTHER (SPECIFY) _____

HOW LONG AFTER THE STREPSORETHROAT DOES A CHILD DEVELOP RHEUMATIC FEVER?

SAME DAY 3 DAYS 1 WEEK 2 WEEKS 1 MONTH

OTHER (SPECIFY) _____

HOW MANY EPISODES OF STREPTHROAT DOES A CHILD NEED TO HAVE TO DAMAGE THE HEART? 0 1 2 3 4 5 >5

WHAT IS RHEUMATIC FEVER?

COMES AFTER STREPSORETHROAT AFFECTS JOINTS

AFFECTS HEART AFFECTS SKIN CHILD VERY ILL

OTHER (SPECIFY) _____

WHO IS AT RISK OF RHEUMATIC FEVER? DON'T KNOW

CHILDREN WHO HAVE RECENTLY HAD STREPSORETHROAT

UNTREATED STREPSORETHROAT

POORLY TREATED STREPSORETHROAT

CONTACT WITH CHILD WITH STREPSORETHROAT

LACK OF MONTHLY PANADAR INJECTION

UNDER 5 BOYS MORE AT RISK

5-15 YEAR OLD BOYS MORE AT RISK

BOYS ABOVE 15 YEARS MORE AT RISK

UNDER 5 GIRLS MORE AT RISK

5-15 YEAR OLD GIRLS MORE AT RISK

GIRLS ABOVE 15 YEARS MORE AT RISK

WHAT SHOULD YOU DO FOR A CHILD IF YOU SUSPECT RHEUMATIC FEVER?

VISIT NEAREST HOSPITAL GET TESTED FOR ASOT PERFORM ECG

COMPLETE BLOOD COUNT ESR NO NEED FOR LAB TESTS

TREAT WITH ANTIBIOTIC WITHOUT TESTING OTHER SPECIFY _____

HOW LONG DOES A CHILD TAKE TO RECOVER FROM RHEUMATIC FEVER?

DON'T KNOW SHORT TIME LONG TIME NEVER RECOVERS

OTHER (SPECIFY) _____

WHAT ARE THE SYMPTOMS OF RHEUMATIC HEART DISEASE?

SHORTNESS OF BREATH GENERAL BODY WEAKNESS

IRREGULAR HEART BEAT ESPECIALLY AFTER STRENOUS ACTIVITY

PERSON MAY HAVE HEART MURMUR DON'T KNOW

OTHER (SPECIFY) _____

WHAT ARE THE SIGNS OF RHEUMATIC HEART DISEASE?

SWOLLEN FEET VERY SICK CHILD CHILD UNABLE TO RUN LIKE

OTHER CHILDREN

HOW IS RHEUMATIC HEART DISEASE TREATED? DON'T KNOW

OPERATION MEDICINE NO NEED FOR TREATMENT

OTHER (SPECIFY) _____

DOES THE CHILD NEED TO MAKE MORE VISITS TO THE HOSPITAL AFTER THE

OPERATION? YES NO IF, GIVE REASON _____

IF YES, GIVE REASON _____

HOW LONG SHOULD THE CHILD BE FOLLOWED UP? 1 YEAR 2 YEARS

5 YEARS 10 YEARS UP TO 18 YEARS OLD UP TO 25 YEARS OLD

LIFETIME DON'T KNOW OTHER (SPECIFY) _____

DO THE HEART VALVES NEED TO BE REPLACED AS THE CHILD GETS OLDER

YES NO IF NO, GIVE REASON _____

IF YES,GIVE REASON _____

CLINIC REFERRALS

HOW MANY CHILDREN HAVE BEEN REFERRED TO THE CLINIC FOR SUSPECTED

STREPSORETHROAT? RHEUMATIC FEVER? RHEUMATIC

HEART DISEASE?

DO YOU KNOW ANY CHILDREN ON MONTHLY PANADAR® INJECTION?

YES NO IF SO,HOW MANY

DID THE HEALTH PROVIDER DISCUSS ABOUT THE RISK OF RHEUMATIC HEART DISEASE? YES NO IF YES, WHAT INFORMATION WAS PROVIDED ABOUT

WHO IS AT RISK OF STREPTHOAT

CHILDREN WHO HAVE RECENTLY HAD STREPSORETHROAT

UNTREATED STREPSORETHROAT POORLY TREATED STREP SORE

THROAT CONTACT WITH CHILD WITH STREPSORETHROAT

LACK OF MONTHLY PANADAR INJECTION UNDER 5 BOYS MORE AT RISK

5-15 YEAR OLD BOYS MORE AT RISK BOYS >15 YEARS MORE AT RISK

UNDER 5 GIRLS MORE AT RISK 5-15 YEAR OLD GIRLS MORE AT RISK

GIRLS ABOVE 15 YEARS MORE AT RISK POOR CHILDREN

POOR HOUSING OVERCROWDED HOUSES LACK OF MEDICAL

CARE DON'T KNOW

WHERE ARE THE TESTS AVAILABLE TO CONFIRM STREPTHOAT?

HOSPITAL HOME DON'T KNOW

APPENDIX: F

KENYA HEART NATIONAL FOUNDATION PROJECT EVALUATION-INDEPTH INTERVIEW QUESTIONNAIRE (HEALTH PROVIDERS)

DATE INTERVIEWER'S INITIALS

DD / MM / YYYY

PARTICIPANT'S NUMBER

START TIME :
(24hrs)

END TIME :
(24hrs)

TYPE OF HEALTH FACILITY: DISPENSARY HEALTH CENTRE

SUBDISTRICT HOSPITAL DISTRICT HOSPITAL REFERRAL

HOSPITAL OTHER (SPECIFY) _____

FACILITY AFFILIATION: PRIVATE PUBLIC MISSION

NGO CBO OTHER _____

TYPE OF MEDICAL STAFF AT HEALTH FACILITY

MEDICAL OFFICER CLINICAL OFFICER REGISTERED NURSE

ENROLLED COMMUNITY NURSE MEDICAL RECORDS OFFICER

LABORATORY TECHNICIAN PHARMACIST PHARMACY

TECHNOLOGIST NUTRITIONIST PHYSIOTHERAPIST

COMMUNITY HEALTH WORKER OTHER (SPECIFY) _____

DEMOGRAPHICS

YEAR OF BIRTH GENDER MALE FEMALE

RESIDENTIAL ADDRESS

ESTATE _____ ROAD _____

MARITAL STATUS

SINGLE MARRIED SEPARATED DIVORCED WIDOWED

OTHER (SPECIFY) _____

RELIGION

CATHOLIC MUSLIM HINDU PROTESTANT

JEHOVAH'S WITNESS OTHER (SPECIFY) _____

DOES YOUR RELIGION PROHIBIT YOU FROM GOING TO HOSPITAL? YES

SPECIFY RELIGION _____ NO REFUSED

EDUCATION

YEARS OF FORMAL EDUCATION NONE PRIMARY SECONDARY

POLYTECHNIC COLLEGE UNDERGRADUATE POSTGRADUATE

OCCUPATION
SELFEMPLOYED EMPLOYED SMALL BUSINESS LARGE BUSINESS

SPECIFY EMPLOYMENT TYPE(S) _____

INCOME PER MONTH Kshs

STREPSORETHROAT DIAGNOSIS

HAVE YOU EVER DIAGNOSED A CHILD WITH STREPSORETHROAT? YES NO

HOW DOES A CHILD WITH STREP THROAT PRESENT?

HIGH FEVER IT STARTS QUICKLY HURTS ON SWALLOWING

NO RUNNY NOSE NO COUGH ENLARGED LYMPH NODES

PAINFUL LYMPHNODES GENERAL BODY WEAKNESS

OTHER (SPECIFY) _____

DID YOU LOOK INTO THE CHILD'S THROAT? YES NO IF NO, GIVE

REASON NO TORCH AVAILABLE CHILD REFUSED TO OPEN MOUTH

LONG QUEUE SO NO TIME OTHER SPECIFY _____

HOW DOES THE STREPSORETHROAT LOOK LIKE? RED TONSILS

SWOLLEN TONSILS PUS IN TONSILS OTHER (SPECIFY) _____

WHAT ORGANISM CAUSES STREP SORE THROAT? BACTERIA VIRUS

FUNGI DON'T KNOW OTHER (SPECIFY) _____

TESTS CONFIRMING STREP SORE THROAT BLOOD COUNT HROAT

SWAB ASOT ECG OTHER(SPECIFY) _____

CAN STREPSORETHROAT BE TREATED AT HOME? YES NO IF NOT,

GIVE REASON BACTERIA ONLY CURED BY ANTIBIOTIC DELAY IN

TREATMENT RESULTS IN RHEUMATIC FEVER CHILD MAY DIE

OTHER (SPECIFY) _____

IF YES, WHAT DO YOU USE? SALT LEMON IONEY HERBAL TEA

OTHER SPECIFY _____

HOW DOES STREPSORETHROAT AFFECT THE HEART?

INJURES GATES ALLOWING BLOOD TO PASS THROUGH THE HEART

WEAKENS THE WALLS OF THE HEART BLOCKS BLOOD FLOW THROUGH
THE HEART DON'T KNOW OTHER (SPECIFY) _____

HOW LONG AFTER THE STREPSORETHROAT DOES A CHILD DEVELOP RHEUMATIC
FEVER?

SAME DAY 3 DAYS 1 WEEK 2 WEEKS 1 MONTH

OTHER (SPECIFY) _____

HOW MANY EPISODES OF STREPTHOAT DOES A CHILD NEED TO HAVE TO

DAMAGE THE HEART? 0 2 3 4 5 5 > 6 7

SOURCE OF TREATMENT FOR SORETHROAT NONE KIOSK CHEMIST

DISPENSARY HEALTH CENTRE HOSPITAL HERBALIST

HOMEREMEDY OTHER (SPECIFY) _____

HOW WOULD YOU TREAT STREPSORETHROAT? ORAL PENICILLINS

ORAL CEPHALOSPORINS ORAL MACROLIDES OTHERS SPECIFY

RHEUMATIC FEVER DIAGNOSIS

WHAT IS RHEUMATIC FEVER?

COMES AFTER STREPSORETHROAT AFFECTS JOINTS

AFFECTS HEART AFFECTS SKIN CHILD VERY ILL

DON'T KNOW OTHER (SPECIFY) _____

WHO IS AT RISK OF RHEUMATIC FEVER?

CHILDREN WHO HAVE RECENTLY HAD STREPSORETHROAT

UNTREATED STREPSORETHROAT POORLY TREATED STREP SORE

THROAT CONTACT WITH CHILD WITH STREPSORETHROAT

LACK OF MONTHLY PANADAR INJECTION UNDER 5 BOYS MORE AT RISK

5-15 YEAR OLD BOYS MORE AT RISK BOYS >15 YEARS MORE AT RISK

UNDER 5 GIRLS MORE AT RISK 5-15 YEAR OLD GIRLS MORE AT RISK

GIRLS ABOVE 15 YEARS MORE AT RISK POOR CHILDREN

POOR HOUSING OVERCROWDED HOUSES LACK OF MEDICAL

CARE DON'T KNOW

WHAT SHOULD YOU DO FOR A CHILD IF YOU SUSPECT RHEUMATIC FEVER?

VISIT NEAREST HOSPITAL GET TESTED FOR ASOT PERFORM ECG
COMPLETE BLOOD COUNT ESR NO NEED FOR LAB TESTS
TREAT WITH ANTIBIOTIC WITHOUT TESTING OTHER SPECIFY _____

HAVE YOU EVER DIAGNOSED RHEUMATIC FEVER? YES NO

IF YES, HOW DID YOU MAKE THE DIAGNOSIS? JONES CRITERIA

OTHER CRITERIA (SPECIFY) _____

WHAT ARE THE SIGNS AND SYMPTOMS OF ACUTE RHEUMATIC FEVER?

MAJOR CRITERIA CARDITIS POLYARTHRITIS CHOREA

ERYTHEMA MARGINATUM SUBCUTANEOUS NODULES

OTHER (SPECIFY) _____

MINOR CRITERIA FEVER ARTHRALGIA PROLONGED PR

INTERVAL RAISED ESR RAISED CRP OTHER (SPECIFY) _____

DOES THIS FACILITY HAVE A LABORATORY? YES NO IF YES, WHICH
TESTS ARE AVAILABLE? THROAT SWAB ASOT ESR COMPLETE
BLOOD COUNT OTHER (SPECIFY) _____

WHAT IS THE ASOT TEST? ANTISTREPTOLYSIN ANTIGEN TEST

DONT KNOW OTHER (SPECIFY) _____

WHAT DOES IT MEASURE? TITRES OF ANTIBODIES AGAINST STREPTOLYSIN

CONCENTRATION OF STEPTOCOCCUS IN THE BLOOD

OTHER (SPECIFY) _____

ASOT REAGENT AVAILABILITY? ALWAYS AVAILABLE IRREGULAR SUPPLY

NEVER BEEN STOCKED OTHER (SPECIFY) _____

HOW IS THE ASOT TEST REPORTED? _____

WHAT IS THE CUT OFF VALUE FOR ASOT (IU/L)? 200 250 300 500

DONT KNOW OTHER (SPECIFY) _____

HOW DO YOU USE ASOT TO MONITOR RECURRENT STREPTOSORETHROAT?

REPEAT ASOT AND CHECK FOR RISING TITRES DONT KNOW

OTHER(SPECIFY) _____

WHAT IS ESR? ERYTHROCYTE SEDIMENTATION RATE DONT KNOW

OTHER (SPECIFY) _____

WHAT DOES ESR MEASURE? BLOOD VISCOSITY PRESENCE OF INFECTION

DON'T KNOW OTHER (SPECIFY) _____

WHAT ARE THE GUIDELINES FOR DIAGNOSING ACUTE RHEUMATIC FEVER?

TWO MAJOR PLUS EVIDENCE OF STEP SORE THROAT INFECTION

ONE MAJOR AND TWO MINOR MANIFESTATIONS PLUS EVIDENCE OF
STREP SORE THROAT OTHER (SPECIFY) _____

WHY IS IT DIFFICULT TO DIAGNOSE ACUTE RHEUMATIC FEVER EARLY?

SYMPTOMS MAY NOT BE SERIOUS OTHER COMMITMENTS MAY TAKE

PRIORITY DIFFICULTY IN GETTING TRANSPORT TO HEALTH FACILITY

HEALTH STAFF MAY NOT RECOGNIZE THE SIGNS AND SYMPTOMS

ARF MISDIAGNOSED AS OTHER ILLNESS ARF CONFUSED WITH SPORTS

INJURY OTHER (SPECIFY) _____

HOW WOULD YOU DIAGNOSE SUBCUTANEOUS NODULES?

PAINLESS LUMPS LUMPS ON LATERAL ASPECT OF JOINTS

WHICH JOINTS ARE AFFECTED? NECK SHOULDERS ELBOWS

WRISTS HANDS BACK HIPS KNEES ANKLES FEET

OTHER (SPECIFY) _____

HOW DO THE NODULES PRESENT? SINGLE NODE GROUPS OF NODES

DON'T KNOW SKIN NOT RED OR INFLAMMED LASTING 1-2 WEEKS

RARELY MORE THAN 1 MONTH

NODULES COMMONLY ACCOMPANIED BY CARDITIS

OTHER (SPECIFY) _____

IF IN GROUPS, HOW MANY GROUPS OF NODULES? 1 2 3 4

5 6 7 8 9 10 11 12 >12 DON'T KNOW

OTHER (SPECIFY) _____

HOW WOULD YOU DIAGNOSE ERYTHEMA MARGINATUM?

PAINLESS PATCHES FLAT PATCHES PINK PATCHES

CIRCULAR PATTERN SPREADS RADIALY PRESENTS EARLY

MAY LAST MONTHS RARELY LAST YEARS LOCATED ON BACK
LOCATED ON FRONT OF BODY OTHER (SPECIFY) _____

HOW DO YOU DIAGNOSE SYNDENHAM'S CHOREA?

TWITCHY MOVEMENTS JERKY MOVEMENTS MUSCLE WEAKNESS
BODY PARTS INVOLVED FACE HANDS FEET OTHER (SPECIFY) _____

SIDES OF BODY INVOLVED BOTH SIDES ONE SIDE NONE
DON'T KNOW OTHER (SPECIFY) _____

MORE COMMON IN TEENAGERS MORE COMMON IN GIRLS
RARELY SEEN ABOVE 20s OTHER (SPECIFY) _____

HOW MANY MONTHS AFTER STREP SORE THROAT DOES IT BEGIN?

MAY OCCUR WITHOUT SYMPTOMS 1 2 3 4 5 6
>6 OTHER (SPECIFY) _____

HOW LONG DOES CHOREA LAST? DAYS 1 2 3 4 5 6 7
WEEKS 1 2 3 4 5 6 >6 OTHER WEEKS _____
MONTHS 1 2 3 4 5 6 >6 OTHER MONTHS _____

HOW DOES ARTHRITIS IN ARF PRESENT?

PAINFUL JOINTS SWOLLEN JOINTS MOST COMMON SYMPTOM

FINISHES IN ONE JOINT AND BEGINS IN ANOTHER JOINTS AFFECTED
INCLUDE KNEES ANKLES ELBOWS WRISTS OTHER JOINTS

HOW DOES CARDITIS PRESENT? CHEST PAIN HEART MURMUR

DIFFICULTY IN BREATHING OTHER (SPECIFY) _____

RHEUMATIC HEART DISEASE

WHO IS AT RISK OF RHEUMATIC HEART DISEASE?

CHILD WITH RECURRENT STREPSORETHROAT EPISODES DON'T KNOW

WHAT ARE THE SYMPTOMS OF RHEUMATIC HEART DISEASE?

SHORTNESS OF BREATH GENERAL BODY WEAKNESS

IRREGULAR HEART BEAT ESPECIALLY AFTER STRENOUS ACTIVITY

PERSON MAY HAVE HEART MURMUR DON'T KNOW

OTHER (SPECIFY) _____

WHAT ARE THE SIGNS OF RHEUMATIC HEART DISEASE?

SWOLLEN FEET VERY SICK CHILD CHILD UNABLE TO RUN

LIKE OTHER CHILDREN HEART MURMUR AWARENESS OF

HEART BEAT ON AFTER EXERCISE DON'T KNOW OTHER (SPECIFY)

CLINIC REFERRALS

IN THE LAST ONE MONTH, HOW MANY CHILDREN HAVE BEEN REFERRED TO THIS CLINIC FOR SUSPECTED

STREPSORETHROAT? RHEUMATIC FEVER?

RHEUMATIC HEART DISEASE? CANNOT REMEMBER

NEVER RECEIVED ANY REFERRALS

WHERE WERE THEY REFERRED FROM? SELF PRIVATE CLINIC

PUBLIC CLINIC PUBLIC HOSPITAL SCHOOL CHIEF

CHURCH OTHER (SPECIFY) _____

SINCE 2005, NUMBER OF CHILDREN REFFERED TO KNH FOR SURGERY?

WERE OPERATED? HAVE DIED DURING THE OPERATION?

HAVE DIED FROM COMPLICATED STREPSORETHROAT?

RHEUMATIC FEVER? RHEUMATIC HEART DISEASE?

MANAGEMENT

BENZATHINE PENICILIN (PANADAR)

HOW MANY CHILDREN COME FOR MONTHLY PANDAR® INJECTION?

YES NO IF SO, HOW MANY?

IS BENZATHINE PENICILLIN (PANADAR) AVAILABLE? YES NO

IF NO, WHERE DO YOU SEND YOUR PATIENTS? CHEMIST OTHER

HEALTH FACILITY SENT TO CHEMIST BUT INJECTED IN THIS CLINIC

OTHER (SPECIFY) _____

WHAT PRECAUTIONS NEED TO BE TAKEN PRIOR TO INJECTION?

CHILD MUST NOT BE HUNGRY PRIOR GIVE A TEST DOSE

SHAKE PANADAR THOROUGHLY FOR AT LEAST 5 MINUTES

OTHER (SPECIFY) _____

WHAT IS THE CONCENTRATION OF PANADAR PER VIAL? DONT KNOW

1.2MU 2.4MU CANNOT REMEMBER OTHER (SPECIFY) _____

IS THERE A WEIGHT CRITERION FOR GIVING PANADAR? YES NO

DONT KNOW 10 KG 20 KG 30KG 40KG 50KG >50KG

AT WHAT WEIGHT DOES THE DOSE OF PANDAR CHANGE? _____

WHAT ARE THE DOSAGE ADJUSTMENTS MADE FOR WEIGHT?

DO YOU KNOW HOW TO ADJUST THE DOSE FOR WEIGHT OF CHILD? YES

NO IF NOT, GIVE REASON NOT NECESSARY DONT KNOW HOW

TO ADJUST OTHER (SPECIFY) _____

HOW MANY MILLIGRAMS DOES ONE MEGAUNIT OF PANADAR CONTAIN?

DONT KNOW 600MG 1000MG 1200MG 2400MG

CANNOT REMEMBER OTHER SPECIFY _____

WHAT FLUID DO YOU USE TO MIX PANADAR? NORMAL SALINE

WATER FOR INJECTION 5% DEXTROSE DEXTROSALINE

10% DEXTROSE 50% DEXTROSE OTHER (SPECIFY) _____

HOW MANY MILLILITRES SHOULD BE ADDED TO A 2.4MU VIAL?

DONT KNOW 1 2 3 4 5 6 7 8 9 10

OTHER (SPECIFY) _____

WHAT ARE THE CRITERIA FOR GIVING PANDAR TILL 25 YEARS OF AGE?

FIRST STREPSORETHROAT RECURRENT STREPSORETHOATS

FIRST RHEUMATIC FEVER RECURRENT EPISODES OF RHF.

FIRST CONFIRMED RHD RECURRENT EPISODES OF RHD

DONT KNOW OTHERS (SPECIFY) _____

WHAT ARE THE CRITERIA FOR LIFELONG THERAPY? DONT KNOW

FIRST STREPSORETHROAT RECURRENT STREPSORETHOATS

FIRST RHEUMATIC FEVER RECURRENT EPISODES OF RHF

FIRST CONFIRMED RHD RECURRENT EPISODES OF RHD

OTHERS (SPECIFY) _____

OTHER ANTIBIOTICS APART FROM PANADAR INCLUDE

ORAL PENICILLIN V 250MG TWICE DAILY

ORAL ERYTHROMYCIN 250MG TWICE DAILY

OTHER (SPECIFY) _____

PANADAR INJECTION DELIVERY

CHECK NAME CHECK DOSE CHECK EXPIRY DATE

USE A SIZE 23-GAUGE NEEDLE DISPOSE USED NEEDLES AND SYRINGES IN

PUNCTURE-PROOF CONTAINER USE A NEW NEEDLE AND SYRINGE

FOR EACH INJECTION ADMINISTER INJECTION IMMEDIATELY AFTER

PREPARATION OTHER(SPECIFY) _____

WHAT IS THE SECONDARY PROPHYLAXIS MANAGEMENT PLAN?

GIVE PANADAR DO BASELINE ECG ARF ALERT FOR MEDICAL

RECORDS EDUCATE PERSON AND FAMILY DENTAL

EXAMINATION REFER TO OTHER HEALTH FACILITY IF UNABLE TO

MANAGE OTHER (SPECIFY) _____

HOW DO YOU MANAGE A CHILD WITH PROBABLE ARF?

TREAT SYMPTOMS GIVE PANADAR REFER FOR ECHO

GIVE A ONE MONTH FOLLOWUP APPOINTMENT REPEAT ECHO AT ONE

MONTH REVISIT CONTINUE PANADAR IF ARF IS CONFIRMED

STOP PANADAR IF NOT ARF BUT MONITOR ARF SYMPTOMS

OTHER(SPECIFY) _____

WHICH CHILD SHOULD RECEIVE SECONDARY PROPHYLAXIS?

ARF CONFIRMED BY REVISED JONES CRITERIA RHD CONFIRMED ON

ECHO HIGHLY PROBABLE ARF OR RHD BUT NOT CONFIRMED

CONFIRMED ABSENCE OF PENICILIN ALLERGY DURING PREGNANCY

TOGETHER WITH ANTICOAGULANTS OTHER (SPECIFY) _____

DURATION OF SECONDARY PROPHYLAXIS WILL DEPEND ON

AGE AT FIRST DIAGNOSIS DISEASE SEVERITY PRESENCE OF
CARDITIS YEARS SINCE LAST ARF PREVAILING RISK FACTORS

TREATMENT COMPLIANCE OTHER (SPECIFY) _____

IF ARF WITHOUT CARDITIS TREAT FOR AT LEAST 5 YEARS AFTER LAST ARF
OR UNTIL 18 YEARS

IF MILD-MODERATE-HEALED CARDITIS TREAT FOR AT LEAST 10 YEARS
AFTER LAST ARF OR UNTIL 25 YEARS

IF SEVERE RHD OR POST SURGERY, TREAT FOR LIFE

COST (KSHS) OF TREATMENT COST OF CONSULTATION

DO YOU REQUEST FOR THE FOLLOWING TESTS/DRUGS?

BLOOD COUNT BLOOD CULTURE PROTHROMBIN TIME INDEX

THROAT SWAB ASOT ECG TABLETS INJECTIONS

HOW MUCH DO THE FOLLOWING TESTS/DRUGS COST (KSHS)?

BLOOD COUNT _____ BLOOD CULTURE _____ ASOT _____

ECG _____ PROTHROMBIN TIME INDEX _____

THROAT SWAB _____ TABLETS _____ INJECTIONS _____

COST WAIVED OTHER (SPECIFY) _____

TREATMENT RECEIVED FOR RHEUMATIC FEVER BED REST

PAINKILLER ORAL ANTIBIOTIC DAILY INJECTION

MONTHLY INJECTION OTHER (SPECIFY) _____

HOW LONG DOES A CHILD ON TREATMENT TAKE TO RECOVER FROM

RHEUMATIC FEVER? NEVER RECOVERS DAYS 1 3 5 7

WEEKS 0 1 2 3 4 DON'T KNOW

OTHER (SPECIFY) _____

HOW LONG SHOULD THE CHILD BE FOLLOWED UP? 1 YEAR YEARS

5 YEARS 10 YEARS UP TO 18 YEARS OLD UP TO 25 YEARS OLD

LIFETIME DON'T KNOW OTHER (SPECIFY) _____

DO YOU DISCUSS ABOUT THE RISK OF RHD?

YES NO IF YES, WHAT INFORMATION DID YOU PROVIDE ABOUT AGE

GROUPS AT RISK OF RHD? UNDER 5s 5-15 YEARS

15-25 YEARS >25 YEARS OTHER (SPECIFY) _____

HOW IS RHEUMATIC HEART DISEASE TREATED?

OPERATION MEDICINE NO NEED FOR TREATMENT DON'T

KNOW OTHER (SPECIFY) _____

DOES THE CHILD NEED TO MAKE MORE VISITS TO THE HOSPITAL AFTER

THE OPERATION? YES NO IF NO, GIVE REASON: NO NEED FOR

FOLLOWUP UNNECESSARY COST PROBLEM HAS BEEN SOLVED

OTHER (SPECIFY) _____

IF YES, GIVE REASON: VALVES NEED MONITORING PREVENT

FURTHER HEART DAMAGE ANTICOAGULANT MONITORING (IF CHILD IS

USING ONE) OTHER (SPECIFY) _____

HOW DO YOU ADVISE PATIENTS DIAGNOSED WITH RHD?

KEEP CLINIC APPOINTMENTS NEVER MISS MONTHLY PANADAR

ARE THERE KENYAN GUIDELINES IN THE MANAGEMENT OF RHD? YES

NO IF NO, WHICH GUIDELINES ARE USED? WORLD HEART

FOUNDATION GUIDELINES OTHER (SPECIFY) _____

ANTICOAGULANT USE

WHAT ARE ANTICOAGULANTS? DRUGS BUT NOT SURE WHERE THEY ACT

DRUGS THAT PREVENT CLOT FORMATION DRUGS THAT PREVENT

BLEEDING WARFARIN HEPARIN OTHER (SPECIFY)

ARE ANTICOAGULANTS SOMETIMES NECESSARY FOR RHD? YES NO

IF NO GIVE REASON _____ IF YES GIVE REASON _____

DO YOU DO COAGULATION SCREEN MONTHLY IF ON WARFARIN

DO THEY SEEK HELP IF THEY GET

FEVER TOES START TURNING BLUE FEET START SWELLING

CHEST FEELS CONGESTED HAVE ANY INFECTION

OTHER (SPECIFY) _____

KENYAN-HEART FOUNDATION

HAVE YOU EVER HEARD ABOUT THE KNHF? YES NO

WHAT WORK DOES THE KNHF DO?

ORGANIZE WALKS TO RAISE MONEY FOR HEART OPERATIONS

BUY MEDICINE FOR NEEDY RHF/RHD CHILDREN SEMINARS FOR RHD

PREVENTION FUND HEART OPERATIONS FOR NEEDY RHD CHILDREN

DONT KNOW OTHER (SPECIFY) _____

HAVE THEY BEEN TRAINED BY KNHF STAFF? YES NO IF TRAINED,

SEMINAR SHORT COURSE OTHER (SPECIFY) _____

ARE THERE ANY KNHF IEC MATERIALS AT THE CLINIC? YES NO

IF YES, WHAT TYPES OF IEC MATERIALS? POSTERS BROCHURES

OTHER (SPECIFY) _____

IF NO, HAVE YOU EVER SEEN ANY? YES NO IF YES, WERE POSTERS

DISPLAYED ON NOTICE BOARD BUT REMOVED BROCHURES BROUGHT

TO CLINIC BY KNHF STAFF BUT MISPLACED BROCHURES MAY

HAVE BEEN TAKEN HOME BY CLINIC STAFF POSTERS COVERED BY

OTHER POSTERS OR NOTICES ON NOTICE BOARD OTHER (SPECIFY)

-----END END-----