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REACH

RESOURCES FOR · CHILD HEALTH

STATUS OF REACH SUPPORT TO EPI IN KENYA AND PLANNING FOR FUTURE USAID ASSISTANCE

MARCH 9-31, 1990

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TRIP REPORT

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AND

PLANNING FOR FUTURE USAID ASSISTANCE

Nairobi
9 - 31 March, 1990

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ACRONYMS

AFRO	WHO Regional Office for Africa
ANC	Ante-natal care
BCG	Bacillus Calmette-Guerin Vaccine
CDD	Control of Diarrheal Diseases
CEIS	Computerized EPI Information System
COSAS	Coverage Survey Analysis Software
DANIDA	Danish International Development Agency
DFH	Division of Family Health
DOP	Department of Pediatrics
DPT	Diphtheria-Pertussis-Tetanus Vaccine
DHS	Demographic and Health Surveys
DPHN	District Public Health Nurse
EPI	Expanded Program on Immunization
FP	Family Planning
GOK	Government of Kenya
HIS	Health Information Systems
ICD	International Classfication of Diseases
IEC	Information-education-communication
IPS	Information Planning Systems
JSI	John Snow, Inc.
KAP	Knowledge, attitudes and practices
KEPI	Kenyan Expanded Program on Immunization
MOH	Ministry of Health
MOI	Missed opportunities for immunization

NGO	Non-governmental Organization
NNT	Neonatal tetanus
OPV	Oral polio vaccine
PVO	Private voluntary organization
REACH	Resources for Child Health Project
SSS	Sentinel surveillance system
TA	Technical assistance
TT	Tetanus toxoid
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

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Acknowledgements

It is always a pleasure to work in Kenya among colleagues and friends. I would like to thank all the hard-working staff at the KEPI Management Unit and in the Division of Family Health - in particular Drs. Sang and Oyoo for their friendly guidance and cooperation. Field staff in Kisumu, Kakamega, Siaya, and Nakuru were uniformly helpful. REACH staff members Grace Kagondu, Josephine Kariuki and Kibe were professional, expertly smoothing the way so that I would not stumble. Finally, the ready support and advice of USAID Health Office staff - Connie Johnson, Molly Gingerich, and David Oot - was, as usual, the essential ingredient which made my visit productive.

I. Executive Summary

REACH assistance to the Kenyan Expanded Program on Immunization (KEPI) is designed to strengthen selected components of the program to complement assistance provided by other donors. These components include:

- communications and social mobilization
- disease surveillance activities, particularly for neonatal tetanus and establishment of a sentinel surveillance system
- medical school curriculum development on immunization
- KEPI Manual revision
- Computerized EPI Information System (CEIS)

Since its buy-in to REACH terminates in September 1990, USAID/Nairobi invited the writer to participate as a technical advisor to a Joint KEPI-Donors Strategic Planning Meeting to discuss the activities and funding requirements of the KEPI Plan of Operations, 1991-1995. The writer collaborated with USAID, KEPI and other donors in determining the nature of REACH assistance through September 1990 and identifying the technical areas for which USAID support to KEPI through September 1992 would be most useful.

This report describes the outcome of those deliberations and discusses the status of current REACH activities. Findings are also presented from a field trip to observe the inaugural child-to-child school program and to assess the usefulness of reported data in determining high-risk areas for, and incidence of, neonatal tetanus (NNT).

Main Findings

1. After a rigorous planning exercise, the KEPI Management Unit (MU) produced a draft Plan of Operations (PLOP), 1991-1995 and emerged with a sense of renewed team spirit. The document served as the basis for discussions at a Joint KEPI/Donor Strategic Planning Meeting in Nakuru from 12-14 March 1990. This was a historic and useful meeting, bringing all the donors together at the same time with the entire KEPI MU. REACH staff member Ms. Grace Kagondu was rapporteur. USAID was represented by Mr. David Oot, Ms. Molly Gingerich and Ms. Connie Johnson, with technical support from the writer.

2. USAID supports KEPI's focus on strengthening district capacity, prioritization of districts, sustainable service delivery, and joint emphasis on social mobilization and reducing missed opportunities for immunization (MOI). Some areas of USAID concern are listed in Annex 5, including the slow progress to date in Kenyanization of KEPI in terms of MOH financial support.

3. Technical areas in which USAID assistance to KEPI during the period October 1990 to September 1992 would be most useful, and complementary to support provided by other donors, were discussed during and after the meeting, including the broad areas of:

- Social mobilization and communications through the provision and support of a long-term (2-year) Kenyan Communications Specialist;

- Monitoring and evaluation activities through the provision of short term technical assistance;

- Disease control and surveillance activities through short-term technical assistance and limited funds for workshops;

- Cost benefit analysis by provision of short-term technical assistance; and

- Training activities through the provision of materials and limited funds for operations.

4. Regular joint KEPI/donor meetings under the chairmanship of Dr. Oyoo have been proposed in the PLOP and promise to be very useful.

5. Activities remaining under REACH I which have been agreed to by KEPI, USAID, the Department of Pediatrics (DOP) and REACH include:

Activities remaining under REACH I		1990
- Support of REACH Communications Specialist		to Sept.
- Support of REACH Administrative Assistant		to Sept.
- Exchange visits between Haiti and Kenya of respective Social Mobilization/Communications Specialists.	$12000 from buy-in	June/July
- TA by Mimi Church on CEIS	$10000 from buy-in	July
- TA on Medical Curriculum development	$ 7500 from buy-in	August
- EPI Essentials	? from buy-in	
- Purchase Order to Department of Pediatrics	$12000 from buy-in	to Sept.

6. Talented epidemiologists, pediatricians, obstetrician-gynecologists, and managers are present in Kenya. To provide authoritative technical opinion for KEPI on policy issues and to review strategic options for disease control, they could regularly sit in an advisory group - just as WHO, for example, turns to its global advisory group for expert guidance.

7. REACH has made a significant contribution in the field of social mobilization. The REACH Communications Specialist is an integral member of the KEPI MU and has been closely and effectively collaborating with UNICEF to broker funds, plan and implement activities.

8. Much has been learned from surveys and studies about the reasons that parents and providers resist immunization. But more is known than is applied in order to overcome these known resistances and design appropriate messages. A review of the results and implications from the many KAP, coverage and missed opportunity surveys already conducted in Kenya, and use of relevant findings, is the first step.

9. REACH has completed its involvement in editing the KEPI Manual. The next step is for KEPI to review the Manual and submit it to UNICEF for final edits, lay-out, and printing. Agreement on pre-testing, quantities needed, and methods of distribution should be reached between KEPI and UNICEF.

10. With support from UNICEF and REACH, KEPI has embarked on a promising, sustainable effort to mobilize school children to raise immunization coverage in selected low-coverage priority districts by referring young children for immunization.

11. The computerized EPI information system (CEIS) is up and running. Although many modifications have been suggested (pages 20-21), the first task is to improve the quality and quantity of data. CEIS should be used to monitor the completeness and timeliness of reporting. CEIS' potential contribution -to enable managers to analyze, feedback, and take prompt corrective actions -has not yet been realized.

12. REACH is prepared to continue providing occasional technical input to KEPI, HIS and IPS on the continued development of the sentinel surveillance system (SSS). However, some difficult administrative decisions have yet to be made by the MOH.

13. Work by the Department of Pediatrics and KEPI on revision of the medical school curriculum concerning immunization is progressing according to plan, as outlined in the memoranda of understanding prepared by the DOP and REACH in September 1989.

14. Reported data on NNT at district health offices and referral hospitals in the three districts visited are so incomplete and of such doubtful quality that the data cannot readily be used to determine high-risk NNT areas and incidence over time.

Recommendations

1. The MOH needs to be more involved in internal political advocacy to lobby the Government of Kenya (GOK) for "counterpart" (PL 480) and increased GOK funds.

2. KEPI is encouraged to conduct cold chain management and transport studies, as recommended in the 1989 DANIDA review. This writer's brief observation of the cold chain revealed important managerial problems at surprisingly high levels of the cold chain which need to be addressed.

3. The MOH needs to issue guidelines for a partnership with Non-governmental Organizations (NGOs) to raise immunization coverage. Respective roles and responsibilities should be specified and NGOs should be included in periodic coordination meetings with the DFH.

4. Communications and mobilization efforts directed at public and private health care providers should be increased, since the lack of up-to-date information, knowledge and motivation might be a powerful deterrent to raise immunization coverage.

5. Social mobilization should be expanded to include direct mail targeted at churches, schools and other community networks, as well as to health care providers.

6. The KEPI MU should carefully track expenditures involved in the child-to-child school health program and strive to keep those costs down in order to encourage district self-reliance and sustainability. Lessons learned should be documented and an article describing the process and impact should be submitted to a suitable journal for publication. A list of suggestions and questions which need to be addressed is provided on pages 17-18.

7. Given the ambitious social mobilization plan, the KEPI MU should consider assigning a vehicle full-time to Ms. Kagondu and the health education officer, Mr. Harold Kodo, for this effort.

8. The computerized EPI information system (CEIS) needs to be customized so that drop-out rates and reporting completeness can be easily monitored by district.

9. The DFH should continue its plan to conduct a workshop on measles control for pediatricians and senior policy makers. Without forgetting the other diseases, the same participants need to be briefed on neonatal tetanus (NNT), which has been identified in many surveys as a major killer in Kenya, as well as on polio control policies and strategies. Such integrated workshops are efficient and follow the model promoted worldwide by WHO.

10. A SSS working group needs to meet regularly to resolve the administrative and managerial issues which have been identified locally by all the collaborators - KEPI, HIS and IPS.

11. A serological component to determine the extent of maternal protection with tetanus antitoxin should be conducted at a convenient time. As the "gold standard" of protection, serological findings will be useful to validate the relative precision of coverage estimates derived by cards, verbal histories, and service statistics.

12. Since routine surveillance data cannot now be used without a major investment in time and effort, and surveys are too costly and impractical, other means of determining the magnitude and area of high-risk for NNT need to be found. The possibility of using existing Demographic and Health Survey (DHS) data to analyze neonatal deaths, by age at death in days, should be explored.

13. NNT surveillance should be improved by requiring that it be reported separate from all other tetanus and by disseminating a standard case definition to improve diagnosis. Recording and reporting of tetanus toxoid (TT) by dose also needs to be standardized.

14. The low number of TT doses given in some districts/facilities relative to the high number of new and repeat antenatal care visits deserves investigation. In districts with a high enrollment of female students, repeated immunization of girls in the early grades before attrition, to take advantage of the long-lasting duration of TT protection (5 properly spaced doses protect a female throughout her future childbearing years), is a sensible medium-term strategy for NNT control which should be considered.

II. Purpose of Visit

The writer's scope of work, as extracted from cables 2936 and 3463 from USAID/Nairobi, was as follows:

A. Participate as a technical advisor to USAID/Kenya O/PH staff at Joint Donor (DANIDA, UNICEF, USAID) - KEPI Strategic Planning Meeting to be held at Nakuru. Overall and sub-objectives of the meeting are:

- Overall objective: to produce an agreed upon plan for implementation of KEPI including requirements for external funding in a detailed form through 1992 and a general form through 1994.

- Sub-Objectives:

  - To clarify KEPI program implications arising from Government of Kenya policies;

  - To review objectives of KEPI and how well these are being achieved;

  - To assess the implementation plan proposed for achieving objectives;

  - To agree upon the external funding requirements, applications and sources.

B. Assist Grace Kagondu to prepare a draft plan of action for KEPI resulting from the Strategic Planning Meeting. The draft plan of action will become the consensus document that provides guidance and clarification for DANIDA-UNICEF-USAID assistance to KEPI in a detailed form through 1992 and a general form through 1994.

C. Review the November 1989 strategy for the REACH long-term intervention in Kenya with O/PH staff. Advise Mission where modifications

are needed for the balance of REACH assistance to KEPI through September 1990 based upon current status of activities.

D. Prepare with and get concurrence from KEPI and Mission draft scopes of work and proposed schedule for balance of all REACH technical assistance visits to KEPI required through September 1990.

Additional activities which were conducted during the 3 week visit included:

1. Visiting Siaya District for two days to observe and provide technical input for the child-to-child school health program;

2. Visiting Kisumu, Kakamega and Nakuru Districts for three days to assess the usefulness of reported data in determining high risk areas for, and incidence and trends of, neonatal tetanus (NNT);

3. Reviewing the status of ongoing REACH activities concerning:

- Social mobilization, including child to child school health
- Computerized EPI Information System (CEIS)
- Medical school curriculum development on EPI
- Sentinel surveillance system
- KEPI Manual

4. De-briefing KEPI, REACH, UNICEF, DANIDA and USAID officials.

The writer also provided written comments on guidelines prepared by UNICEF on KEPI-NGO relations and suggested revisions on two draft radio scripts on EPI.

III. Background

REACH assistance to the Kenya Expanded Program on Immunization (KEPI) is designed to strengthen selected areas of the program to complement assistance provided by other donors. The goal is to improve overall program effectiveness in reducing morbidity and mortality from the target diseases.

The intention stated in the "Strategy Document for Proposed REACH Long-term Immunization Intervention in Kenya" is for REACH to provide catalytic technical support for priority KEPI activities to complement existing resources and to develop the institutional capacity of KEPI to further expand coverage and sustain its achievements.

Technical assistance is provided through the long-term placement of a national communications specialist and by means of a series of short-term visits by REACH staff and consultants.

The KEPI components to be strengthened under REACH assistance include:

- communications and social mobilization
- disease surveillance activities, particularly for neonatal tetanus and establishment of a sentinel surveillance system
- medical school curriculum development on immunization
- KEPI Manual
- computerized EPI Information System (CEIS)

Principal donors to KEPI include DANIDA, UNICEF, Rotary International and USAID. USAID support to KEPI is provided under a bilateral agreement through September, 1992. In addition to a USAID/Nairobi buy-in to REACH which terminates in September 1990, central REACH funds are also being used through September 1990, particularly to provide technical and administrative backstopping.

IV. Trip Activities

9 March	Arrived in Kenya; briefed by REACH, USAID, KEPI and DANIDA on donor meeting
10-11 March	Weekend
12-14 March	Participated at donor meeting, Nakuru
15-16 March	Meetings at KEPI and UNICEF
17 March	Saturday
18 March	Traveled to Siaya District
19-20 March	Participated in child to child school health program, Siaya District
21 March	Reviewed NNT data, Kisumu District
22 March	Reviewed NNT data, Kakamega District
23 March	Reviewed NNT data, Nakuru District
24-25 March	Sunday
26-28 March	Negotiated USAID assistance to KEPI; reviewed status of REACH activities
29 March	Met and de-briefed Drs. Oyoo and Sang with C. Johnson
30 March	Completed sections of draft report; de-briefed USAID and other donors
31 March	Weekend
1 April	Departed Nairobi

A list of persons contacted appears in Annex 1.

V. Methodology and Approaches

The writer reviewed relevant documents available in Washington before departing and in Kenya at the start of the visit. The draft KEPI Plan of Operations, 1991-1995 was carefully studied prior to the donor meeting in Nakuru.

Multiple rounds of discussion and negotiations were held with all the donors, KEPI Management Unit (MU) staff, and REACH staff to reach a consensus on USAID assistance to KEPI through 1992. The Draft KEPI Plan of Operations (PLOP) which had been prepared in advance of the donor meeting was the result of a rigorous planning exercise at a difficult time for KEPI. Much credit is due to the KEPI MU and the DANIDA advisers for having produced the PLOP and having emerged from the exercise with a sense of renewed team spirit.

The KEPI MU graciously welcomed the participation of the writer. The writer chose not to involve himself in the finalization of the PLOP, other than to provide the KEPI MU with detailed written comments on the draft copy. Too active an involvement would have been counter-productive and might have jeopardized the acceptance of the document as a true KEPI-generated product. The KEPI MU had delegated to Grace Kagondu the responsibility of finalizing the PLOP. At the time of this writer's departure, she was nearing completion of this task.

A field visit provided the writer with the opportunity to review the quality and potential usefulness of routinely collected data on NNT incidence, to contribute to the implementation of the first child-to-child school health activity, and briefly to examine the cold chain.

The final week in Nairobi involved many discussions with donors and the MOH to assist USAID in identifying the technical areas where their future support to KEPI would be most useful and complementary to support provided by other donors. The status of REACH ongoing activities were reviewed and a plan for future REACH activities until September 1990 was prepared.

VI. Results and Conclusions

A. Strategic Planning for Proposed USAID Assistance to KEPI

1. Joint KEPI/Donor Strategic Planning Meeting, Nakuru, 12-14 March, 1990

This was an historic meeting in that it was the first time that the KEPI MU met together at the same time with all the donors - USAID, DANIDA and UNICEF. Held for two and a half days in Nakuru from 12-14 March, the meeting allowed the chance for frank and open discussions on past achievements and problems, many of which had been identified in previous international reviews. The meeting agenda is attached (Annex 2). The draft Plan of Operations, 1991-1995 formed the main subject of discussion and review and is attached (Annex 3). The PLOP had been prepared in advance in intensive sessions during which KEPI team members applied techniques of logical framework analysis to consider objectives, inputs, outputs, and outcomes.

The rapporteur for the meeting was Ms. Grace Kagondu, the REACH Communications Specialist assigned to the KEPI MU. Each evening the KEPI MU reviewed the day's discussions and, by the start of the third day of the meeting, draft minutes were distributed to participants for comments.

(Annex 4). Discussions from the third day still need to be incorporated into the minutes, which should be finalized before the end of March.

The meeting provided the opportunity for the donors to exchange viewpoints with each other as well as with KEPI on policy, programmatic, and funding issues in the hopes of achieving consensus. Donors were represented as follows:

DANIDA: Mr. J.W. Johannsen
Mr. Henning Frotlund
Mr. Torkil Hoft

UNICEF: Mr. David Alnwick
Dr. James Maneno

USAID: Mr. David Oot
Ms. Molly Gingerich
Ms. Connie Johnson
Mr. Robert Steinglass (REACH)

This writer served as a technical resource to the meeting at the request of USAID. Written suggested revisions to the minutes and to the format of the Plan were provided directly to Ms. Kagondu, whose responsibility it is, as an integral member of the KEPI team, to produce a final version.

An outline used by Ms. Gingerich and this writer to summarize the USAID response to the KEPI draft PLOP on the last day of the meeting is in Annex 5. Some examples of KEPI activities in which USAID has particular interest, technical resources and possible funds were included in the response.

2. Brief Review of Status of Activities Detailed in Strategy for REACH Long-Term Intervention in Kenya (11/89) and Future Activities under REACH I.

KEPI Manual

Dr. Sang making changes and submitting to UNICEF. Expects no problems, UNICEF still concerned with: size of order (60,000 copies) + cost (a half million dollars); inclusion of everything for everyone. REACH involvement in editing is finished.

Medical Curriculum

All KEPI chapters of teaching manual prepared and given to DOP Latter still preparing their chapters with half said to be completed.

8 lectures (2 from KEPI and 6 from DOP) have been prepared and are now included in the curriculum of 4th year pediatric students.

Series of intensive experience for child scouts (select 4th year pediatric students) has been developed including coverage, KAP, and MOI surveys.

One last REACH consultancy useful in 8/90 (SOW proposed in Annex 6). Work progressing according to purchase order between DOP and REACH.

Sentinel Surveillance System (SSS)

A SSS exists but many unresolved administrative difficluties continue to impede its functioning, despite management-intensive interventions by IPS.

REACH continues to provide TA only, as appropriate from afar, while relying on IPS to assist in micro-management locally.

Neonatal Tetanus Mortality Survey

Survey in Kilifi District shared with GOK and authors of paper.

External review comments incorporated and will now be submitted to a scientific journal.

Discussion of policy options and strategies resulting from the findings has not taken place in a formal meeting or workshop.

CEIS

System up and running. Only modules on population and immunization coverage developed so far. System being used primarily to store data, inputted back to 1987 by district. Use and feedback of data not yet being done. Newly appointed data management officer appointed to KEPI will be responsible, but requires training in computers. USAID could assist. DFH eventually wants USAID to support training of an existing computer-literate staff member to become a programmer. REACH to provie a consultant to customize system further, train staff, and motivate staff to use CEIS. She will do operational manual and leave source codes (See Annex 7 for proposed SOW).

Social Mobilization

KEPI health education officer and REACH Communications Specialist actively pursuing different media channels and developing materials. UNICEF funds brokered by Grace Kagondu on behalf of KEPI. Child to Child school health program begun in Siaya with plans to extend it to KEPI and UNICEF low-coverage high-priority districts. An exchange visit between REACH Social Mobilization/Communications Officers in Haiti and Kenya will take place under REACH I to share mutual experience and provide professional support in Social

Communication, Marketing and Mobilization (Proposed SOW for Haiti REACH staff and for Ms. Kagondu are in Annexes 8 and 9). REACH support for its Communications Specialist will continue until the end of the project.

Activities remaining under REACH I		1990
- Support of REACH Communications Specialist		to Sept.
- Support of REACH Administrative Assistant		to Sept.
- Exchange visits between Haiti and Kenya of respective Social Mobilization/Communications Specialists.	$12000 from buy-in	June/July
- TA by Mimi Church on CEIS	$10000 from buy-in	July
- TA on Medical Curriculum development	$ 7500 from buy-in	August
- EPI Essentials	? from buy-in	
- Purchase Order to Department of Pediatrics	$12000 from buy-in	to Sept

3. Proposed USAID involvement in KEPI, 10/90-9/92

The writer collaborated with USAID to develop a program of technical assistance to KEPI, which complements existing donor resources. The aim is to improve program effectiveness in reducing morbidity, mortality and disability from the vaccine-preventable diseases. USAID wants to be able to provide catalytic technical support for priority KEPI activities while developing the institutional capacity of KEPI to raise immunization coverage and sustain program achievements.

All donors are concerned that a gap in expert technical assistance to KEPI should be filled. The Division of Family Health (DFH) and DANIDA, however, have chosen to replace the outgoing DANIDA adviser with a management specialist. The DFH does not wish to have a second resident adviser dealing with technical matters. Given that this is the case, a special search for a manager with strong EPI technical skills should be carried out. Such people do exist and REACH, with its global EPI experience, would be willing to help to identify such persons for DANIDA and KEPI. DANIDA would be receptive to suggestions.

Based on the donor meeting in Nakuru and negotiations with donors and KEPI, the writer prepared a menu of proposed activities for USAID involvement in KEPI from October 1990 to September 1992. This appears in Annex 10.

The list was discussed in a meeting attended by Drs. Oyoo and Sang, Connie Johnson and the writer. There was great interest and agreement on all the activities listed under "First Priority". Dr. Oyoo pointed out that the issue of TT serology would require higher approval, given the requirements for such research in Kenya. From the "Second Priority" list, there was agreement that USAID could provide needed support for a workshop on accelerated measles control, sentinel surveillance system, and observation tours for staff development.

This writer strongly encourages the DFH to reconsider its decision to limit the workshop to measles. The same participants have a need to be briefed on neonatal tetanus and polio control policies and strategies; such integrated workshops are more efficient and are being promoted at regional, country and district levels by the World Health Organization (WHO).

On his several visits to Kenya, the writer has observed a general reluctance on the part of KEPI to initiate, or otherwise engage national decision-makers, in a discussion on policy issues and review of strategic options in disease control. A regular forum is badly needed to discuss the many new developments in immunization and disease control. This important routine task should not fall to any one individual but to a policy advisory group with technical support, if required, from the donors.

This writer understands that a national immunization advisory committee already exists. Whether or not this would be the appropriate body to be charged with this responsibility of reviewing national policies and strategies is for the MOH to decide. But the need is clear: hepatitis B, Edmonston-Zagreb measles vaccine introduction, and updated NNT control strategies are some of the topics which immediately spring to mind. Talented epidemiologists, pediatricians, obstetrician-gynecologists, and managers present in Kenya could provide the authoritative opinion to guide KEPI.

B. Review of Status of REACH Ongoing Technical Support to KEPI

1. Communications and Social Mobilization

REACH contracted and supported the placement of a full time Kenyan communication specialist beginning in May 1989. Ms. Grace Kagondu sits at the KEPI Management Unit in this capacity. She is responsible for coordinating inter-agency efforts in print and broadcast media to raise demand for immunization. She is also responsible for development, testing, production and impact evaluation of the needed materials.

Grace is well-integrated into KEPI and is considered a member of the team. She is hard-working and well-regarded by all who work with her. Her reports to REACH/Washington have been informative and professional. She has a counterpart, Mr. Harold Kodo, who is a health education officer assigned to KEPI. Grace had been working with UNICEF closely since the latter have an interest in and funds to support social mobilization. This seems an effective arrangement, since she is technically able to broker funds, plan and implement

activities. The extent to which Grace is an integral member of the KEPI MU is reflected by the fact that she is trusted to use any field visit to the districts as an opportunity to supervise KEPI activities in general.

KEPI revived the National Social Mobilization Committee consisting of representatives from UNICEF, KEPI other MOH departments and various ministries and NGOs. The committee has met several times in the past six months. It is meant to meet monthly to guide and facilitate efforts in social mobilization. One problem has been lack of continuity in the participation of individual representatives.

After she underwent in-country mid-level management training in EPI to gain a technical grasp on EPI, Grace set about conducting a series of provincial and district workshops for respective health management teams. The results of these workshops are included in her field report covering August through October. Briefly, one workshop aimed to assist province and district health education officers to make their own local plans for social mobilization for 1989/1990. As a result, funds could be forwarded to the participating districts in return for which KEPI Headquarters was to receive quarterly reports detailing activities and expenditures. These reports have not been routinely received; Management Unit staff have had to chase after the reports in some cases.

Another workshop for district public health nurses and provincial matrons resulted in the participants conducting a missed opportunity survey in Nakuru District. In each district, plans were drawn up for 1989/90 to conduct missed opportunity surveys and to intensify social mobilization. A workshop for Provincial and District Health Management Teams then served as the forum to sanction the workplans elaborated at the previous workshops.

A major focus of activities was preparation (in conjunction with UNICEF) of educational and publicity materials and media activities to celebrate Universal Children's Week in October 1989. A newspaper supplement appeared in all national and district newspapers throughout Kenya (Annex 11).

The writer has collected other health education materials on which KEPI staff have collaborated. The materials are designed in such a way that they can be printed in various languages spoken in the KEPI priority districts. Scripting for radio programs has also begun.

A major focus of activity has been the child to child school program. A description of this effort is provided in the next section.

A detailed social mobilization/communication plan of action for January to June 1990 was prepared. It is a thoughtful document but extremely ambitious. As it is doubtful that even half of it can be accomplished, the plan period was extended to December 1990. Even so, for Grace to be effective, it will be necessary for her to prioritize among activities. UNICEF will provide $230,000 to cover costs for the identified activities. She will require use of a vehicle to be effective. UNICEF expressed the hope that one of the vehicles which they and the Japanese donors are providing to KEPI can be assigned full-time for social mobilization.

This writer fears that the plan may rely too heavily on printed material. Means for distributing the materials may be unrealistic. Instead, efforts to "penetrate markets" (e.g., the school child-to-child programs) are likely to be more effective in targeting the message and coupling it with concrete behavior (referrals). Radio programs are also potentially effective.

The need for prioritization is clear when one considers that the child-to-child program alone will require a minimum of several trips, each of 2-4 days, to each district (16) participating in the first round of the effort. And this is only one planned activity. It alone could occupy a person full-time. KEPI intends to decentralize planning for subsequent rounds; this will help relieve the burden centrally.

More attention on message content would be useful. Through formative research, such as the 1988 Kitui KAP and coverage survey, lessons have already been learned as to the resistances of parents. But more is known than is applied. Communications should address these resistances. For example, it was found in Kitui that more than 1/3 of mothers felt that children with fever, cough and diarrhea should not be immunized. Messages could be directed both at mothers and health workers on this point. There is a plan to do this on radio.

Targeted messages by means of direct mailings (some of which could be computerized) are also likely to be effective and relatively inexpensive. Audiences could include religious groups and churches. Community based interpersonal channels are likely to be effective.

Health workers themselves need to receive new information. An excellent 1989 study done by fourth year pediatric students (child scouts) supervised by Dr. V. Orinda of the Department of Pediatrics found that one half of health care providers, interviewed at immunization service delivery points in Nairobi, believed that children with a parents' verbal history of measles should not be immunized. A message on this point to all health workers, stressing the unreliability of parental self-diagnosis and the danger of denying measles immunization, could be very effective. As with qualitative data as mentioned above, existing quantitative data are also not being fully used to focus activities. For example, drop-out rates should be monitored by district to identify areas where immunization acceptability and missed opportunities may be a relatively greater problem.

This writer feels that a greater focus of communications and mobilization efforts must be directed at health care providers, whose lack of information, knowledge, and motivation in many countries is a powerful deterrent to raising immunization coverage. Results of missed opportunity studies, conducted and planned, should be fed back to peripheral health staff for improved action. Why is it that the comment is frequently heard (1988 Kitui KAP report, Siaya child-to-child briefings of headmasters, etc.) that health staff are "abusive" and "harass" mothers, especially if cards are lost? Communications staff need to direct their attention to providers themselves.

Positive developments include an interest in printing materials in local languages and increasing interest in conducting formative research. Collection and review of results from existing formative research to extract and use relevant findings would seem to be the first step. KEPI plans an Information-Education-Communication (IEC) evaluation in 1991 to review the results of all efforts and to provide guidance for the future.

The timeline for activities through the end of 1990 is in Annex 12. Activities planned for 1991-1995 appear in the draft PLOP, now under-going finalization.

The general impression is that REACH has made a difference in the field of social mobilization and that REACH involvement is very relevant to the needs. Nonetheless, Grace would benefit from having a small REACH budget line item for those times when the tardy release of KEPI and UNICEF funds threatens to undermine planned social mobilization activities.

2. Child-to-Child Social Mobilization through Schools

KEPI has developed what promises to be an effective, systematic effort for mobilizing schools to raise immunization coverage in selected low coverage priority districts. UNICEF has provided funds for this activity. The KEPI health education officer, REACH social mobilization officer, and UNICEF have developed a variety of materials and posters for headteachers and teachers to use in educating school children in standard 6 and 7 classes about the importance of immunization (Annex 13). The children then give appointment slips to up to four mothers of eligible children aged 0-23 months. The plan is to harness the natural competitiveness of the children by having schools compete for the highest number of referrals. Winning schools in each zone, division and district will be given modest prizes. The entire process relies on normal service delivery points to minimize disruption and increase the likelihood that this activity can be sustained.

The writer was privileged to accompany the KEPI officers to Siaya District for the first test of the materials and launching of the program. The interest of the district education officers had been secured on a previous visit to the district. There are 587 primary schools and 40 health facilities in the district. Each of the six divisions in the district was scheduled to receive a one-day briefing for its headteacher. On the first day 92 of 112 headteachers in Boro division participated. Turn-out on the second day was approximately 40 of 65 headteachers in Ugunju Division. Training sessions were chaired by District Education Officers with input from KEPI staff. The most senior District Medical Officer of Health also participated. This sense of district ownership is consciously being promoted by KEPI.

The writer provided a district specific hand-out, which can be used as a model for other districts, to inform the headteacher about the annual toll of the vaccine-preventable diseases in Siaya District. It also explains how many deaths and polio cases can be averted by fully immunizing 1000 infants. (Annex 14) The only figures on the hand-out which require modification for use in other districts are those in the first paragraph. Siaya was assumed to

have a 1990 population of 775,000. If the next district to which the program will be extended has a population, for example, of 1,000,000 then the respective figures can be calculated as follows:

District	1990 Pop.	Annual deaths due to EPI diseases	Annual Polio Cases
Siaya:	775,000	2170	200
District X:	1000,000	2800	258

$$\frac{1{,}000{,}000}{775{,}000} \times 2170 = 2800 \qquad \frac{1{,}000{,}000}{775{,}000} \times 200 = 258$$

Some suggestions can be offered for future programs:

- Make a special effort to convince the health authorities of the political embarrassment which would result if health facilities were to run out of vaccine or other needed supplies due to the increased demand. Convince the DPHN to make a supply/briefing visit to each health facility at least one week before the program begins.

- Based on the Siaya experience, determine whether or not health staff from facilities needed to have met beforehand.

- Keep careful accounts of the expenditures involved in the program and search for ways to reduce costs in case the program is effective and needs to be replicated.

- Evaluate the program's impact on district immunization coverage by plotting on separate graphs the month - specific infant coverage with DPT 1, DPT 3, and measles. A baseline month by month for at least the previous 12 months should be plotted to control for any seasonal variation when evaluating the totals during and after the program. An example from the Yemen EPI is attached (Annex 15).

- Experiment with sending a post card reminder addressed to each school headmaster at the very start of the program (to allow time for it to reach them by the end of the 2nd week of activities). Decide how results of the program will be fed back to participating schools and to the general public.

- Prepare a hand-out list of all health facilities offering immunizations in the districts, including NGOs, and the days of the week on which these are offered.

- Encourage the headteacher to teach the classes themselves so that important information is not lost. (At present, headteachers brief the teachers - two or three in most schools - to pass on the information).

- Include in an explanatory flyer the method of calculating the winning school, which should be based on the rate of participation. A school with 100 students in class 6 and 7 which returns 300 slips would thus have a participation of index 3.0. This school would rate better than a larger school of 500 students returning 750 slips, since their index would be only 1.5.

- Modify the tally sheet to eliminate weekly tabulation of returned appointment slips and put a line on which to enter starting and ending dates.

- Modify the explanatory pamphlet eventually to say that a lesson plan has been prepared, and not that teachers should prepare their own.

- As suggested by the headteachers themselves, prepare a simple certificate of appreciation for participating teachers.

- Consider using the Pied Crow issue on immunization in the schools.

Questions which eventually will need to be answered include:

- periodicity of the program in each district during the year and in subsequent years.

- order of expansion to other districts.

- appropriateness of the prizes for motivation.

The first test in Siaya has been a definite learning experience. Grace Kagondu and David Alnwick (UNICEF), who joined her after this writer had left, have come up with a useful list of their own suggestions. For example, Mr. Kamau should visit each health facility before immunizations begin to ensure adequate supplies of vaccine, diluent, needles, syringes, cards, etc. are present. In future districts, Grace will first check on supplies and only then provide the teaching, with the referrals to start immediately thereafter. (At present, there is a 2-3 week delay between briefing headteachers and referring children, during which momentum is lost.)

Ms. Molly Gingerich, USAID, suggests that methods be found to motivate the health workers. This could be done by designing the appointment slip so that a part of it is retained by the health facility. The staff of the health facility submitting the highest number of slips could be entitled to an observation tour to a model immunization facility in another district.

The ssibility of having the school children refer pregnant women for at least one dose of TT should be considered.

3. Computerized EPI Information System (CEIS)

The CEIS was originally developed by the South East Asia Regional Office of WHO (SEARO). It was written in DBASE III PLUS with an interface for the graphs to LOTUS 1-2-3. The CEIS was developed as a tool to help EPI managers better organize, process and analyze their data. As noted by REACH staff member Ed Wilson on a visit to Turkey, "CEIS was designed to move the EPI manager's focus from adding up numbers to thinking about what the numbers mean." Both past and present versions of the CEIS provide a simple menu-driven system for entering data, producing reports, and generating graphs. The CEIS can be installed to collect and report data on coverage, cases and deaths, funding, training, and coverage surveys.

The former REACH CEIS advisor, Mr. Dinesh Gupta, visited Kenya in November 1988, April 1989 and August 1989 in order to install CEIS, customize it and train KEPI staff in its use. CEIS was customized to incorporate several data elements routinely reported at the service delivery points. These are discussed later.

CEIS is installed at the KEPI Management unit and uses the district (of which there are 42 in Kenya) as the lowest level for data entry. Data on immunization coverage is collected at the service delivery points and reported monthly to the district public health office. After compiling the data on summary tally sheets, the data are sent to KEPI headquarters in the Division of Family Health in Nairobi.

Data for 1988 and 1989 have so far been entered and plans exist to go further back in time. These data are now sent directly to KEPI from the districts. However, in the past some data were sent instead to Health Information Systems (HIS) in Nairobi. It is possible that in the past some of these data were not shared between KEPI and HIS.

An Olivetti 290 computer was supplied in 1989 by UNICEF for KEPI for CEIS. It is a 286 type, IBM-compatible with 40 megabytes. It has a floppy disc drive, as well as hard drive. The monitor is monochrome. The printer is Citizen dot matrix but is said to be too slow. Another printer, manufactured by Olivetti, is on order. There is an uninterrupted power supply. CEIS is functioning adequately on this hardware. Although CEIS was installed at KEPI, a disc was also left with HIS.

Philomena Kamunge, the KEPI secretary, was trained to use CEIS on Gupta's first visit. She had no prior training or experience using computers. Two HIS statistical clerks, Elizabeth and Francis, were loaned to KEPI to assist in data management. On Gupta's subsequent CEIS visits, they were also trained for several weeks to enter data, print graphs, and do back-up. Unlike Elizabeth and Francis, Philomena no longer works on CEIS. The DANIDA cold chain advisor, Torkil Hoft, received training on CEIS from Gupta during the latter's third visit. The KEPI Manager was briefed on several of Gupta's visits on the general interpretation and analysis of CEIS outputs. He was also exposed to CEIS on his REACH observation tour of Indonesia and

Bangladesh. He has not himself been trained in data entry. KEPI submitted a proposal in January 1990 to USAID for training in general computer use (DOS, Dbase, Lotus), data entry and system maintenance. USAID is considering the proposal.

EPI staff require training in computer use and data interpretation in order to operate CEIS fully and correctly. Training in DOS, Dbase and Lotus and with a word processing program are still needed. KEPI has a recently appointed staff member, Jane Wanza, responsible for data management. She has not yet received any formal computer training.

At the time of installation, no technical documentation about the program and data base files were provided. Later, upon the request from USAID for documentation, REACH provided documentation developed for Indonesia by Gupta. Although a user's guide in English was eventually provided, it has not been needed thus far. The writer was shown a copy of the manual. No other documentation or training materials were developed during follow-up visits.

FoxBase and Lotus 1, 2, 3 are used to run CEIS in Kenya. The standard CEIS modules were installed, including coverage, cases and deaths, training, surveys and funding. Although all these modules are ready for use, only modules on immunization coverage and population data are actually used. Some specific modifications were made to the immunization coverage module including the addition of:

-"fully immunized"
-hepatitis B coverage
-"less than 12" and "more than 12" months of age
-OPV birth dose
-women of childbearing age for eventual use with TT.

Reports and graphs are generated in English. Some samples appear in Annex 16.

Some additional modifications are still required:

- The reports calculate the number of eligibles (the denominator) by taking 5% of the projected population. However, the graphs calculate the number of eligibles using district-specific crude birth rates (which may be more or less than 5%) multiplied by the survival rate (1 minus national infant mortality rate). Coverage results for the same district consequently differ from graph to report. The latter method used to generate graphs is more appropriate, conforms to the methods generally used by WHO in all countries, and should be used on the generated reports, as well.

- A report on drop-out rates by district should be generated.

- On the report for immunization coverage, the column "newborns" should be replaced with "annual newborns," since the figure appears against each month's row but is certainly not a monthly number of newborns.

- The "number of facilities immunizing" and "number of facilities reporting" should appear on the population denominator screen and on the immunization coverage screen by month.

- The screen on percent of immunization coverage by district should include the number of months in the year that the district has submitted reports to headquarters.

- The content of graphs and reports to be generated quarterly has not been finalized by KEPI.

- A change from Lotus to Harvard Graphics has been suggested.

- Users would like to be able to print all graphs and reports for one district without exiting each time and returning to the CEIS program.

- Users would like to print all the feedback one time, rather than 42 times (one for each district).

- It is difficult to tell without exiting 42 times (for each district) for what month the data were last entered.

Data entry and generation of reports and graphs is the responsibility of Elizabeth, who is responsible for entering coverage figures continuously upon receipt. The writer randomly selected two districts and discovered that data were last entered for December 1989. This slight delay might be due to untimely receipt of monthly returns or untimely data entry.

Just as facilities which do not report to district offices are not reminded systematically to submit reports, at headquarters CEIS is not being used to monitor completeness and timeliness of reporting. CEIS should be used automatically to generate reminders to districts that returns are still awaited. A table of report completeness should appear on screen.

Although KEPI staff may desire to adjust coverage figures to 100% reporting based on the reports actually received (which according to the HIS Annual Report for 1987 was only 50% nationwide), this temptation should be resisted. It is not known whether the 50% of facilities reporting are representative of all facilities which should be reporting. In fact, a facility which reports is probably more likely to vaccinate, as well.

No one has been given the responsibility in-country for ongoing system maintenance, trouble shooting and customization. Local assistance can be purchased, or possibly staff at HIS could be requested by KEPI to assist. UNICEF would probably be able to provide support for additional equipment and possibly funds for local consultants. Occasional enhancements, customization and training are needed from REACH.

Back-up and restore procedures for data bases have been established. Data are backed up weekly by Elizabeth.

A new KEPI staff member, Jane Wanza, has been given the responsibility for data management. She is responsible for analyzing reports and graphs produced by CEIS. How often this is to be done is unclear. Prior to CEIS installation, HIS was responsible for analyzing routine reports and summarizing program performance for all MOH projects. Too little analysis was ever done, and when it was, it was too late to be useful for management. However, now that CEIS has been installed, reports, graphs and indicators of EPI performance are still not being routinely analyzed by KEPI.

The quality of potential graphic presentation using CEIS far exceeds what was previously available. Reports and graphs were presented to the Provincial and District Health Management Team members during a series of meetings in September and October 1989. HIS and IPS have developed a manual for data analysis to be used in training at district level. The manual is being printed by UNICEF. Interpretation and use of reports and graphs generated by CEIS should be included in district training on data management.

CEIS is also not being used as a basis for management decisions or actions. Completeness of reporting and achievement of targets is not being monitored. There are no plans to expand CEIS to other levels. Such expansion would be premature at this point.

CEIS' most important contribution - the ability to analyze data more easily and promptly - is not being utilized. System weaknesses include complex procedures for producing outputs.

One danger of CEIS is that a pretty print-out gives the appearance of validity to data which are frequently incomplete and suspect.

Once the 1989 census data are released (expected in 1991), new denominator populations by district using district-specific infant mortality rates should be calculated for CEIS. In the meantime, there are several actions which KEPI needs to take to improve the quality of reports (the numerators) in the CEIS:

- an inventory is needed listing the names of all health facilities authorized to immunize
- reporting timeliness and completeness should be monitored and reminders to defaulting districts should be generated automatically
- periodicity, type and content of outputs, and feedback should be determined.

The quality of output at the moment is limited by the poor quality of input received from the districts.

During the next CEIS consultant's visit, REACH needs to make available the source codes for Kenya's CEIS so that any future consultants or authorized KEPI staff could modify CEIS as needed.

4. Medical Curriculum Development

All KEPI chapters of the teaching manual have been prepared and given to the DOP The latter are still preparing their chapters, with half said to be completed.

Eight lectures (two prepared by KEPI and six by DOP) have been prepared and are now included in the curriculum of fourth year pediatric students.

A series of intensive experiences for child scouts (select 4th year pediatric students) was developed and executed in August 1989, including coverage, KAP, and MOI surveys.

One last REACH consultancy would be useful in 8/90 (SOW in Annex 6). Work is progressing according to the purchase order between the DOP and REACH.

5. Sentinel Surveillance System

The ultimate aim of immunization programs is to reduce disease incidence and mortality. However, the routine disease surveillance system managed by HIS is presently unable to provide data on the EPI - target diseases which have sufficient completeness, reliability, timeliness or usefulness for KEPI managers. Furthermore, only 50% of expected routine reports of vaccinations administered were received at the central level of HIS for 1987.

KEPI has established disease reduction targets for 1990 which include:

- reduction of NNT incidence by 50%;
- elimination of endemic poliomyelitis; and
- control and virtual elimination of infant mortality from measles.

These diseases lend themselves to effective surveillance since they are easy to diagnose clinically, are responsible for the largest portion of preventable disability and mortality, and are controllable in the short-term through effective immunization programs.

Among the major infectious diseases, including diarrheal diseases and malaria, measles was reported to be the leading cause of death in 1984 among children. It is fitting that KEPI has selected measles morbidity to be the single most useful indicator of program impact.

A surveillance system, based on sentinel sites with a history of reliable diagnosis and regular reporting, is being established by the MOH and will initially include measles and diarrheal diseases. The surveillance objectives concerning measles are to measure the impact of KEPI on disease incidence over time and by age groups, and to determine vaccine efficacy by age. Additional epidemiological features, such as seasonality, can be defined. The SSS can also be used to assess the degree of underreporting in defined catchment areas.

REACH has been involved in providing technical assistance to staff of Information Planning Systems (Thunder and Associates, Inc.), who have been advising HIS and KEPI on the development of a SSS. Specifically, REACH has provided technical advice to IPS in designing the content of a workshop on SSS, in the development of a SSS manual, and in a manual for district training on immunization data collection forms.

Dr. Lynne Gaffikin, IPS, has prepared "An Evaluation Report on Measles/Diarrhea Sentinel Surveillance System" in February 1990. The report clearly explains the intense administrative and management efforts on her part which have been necessary to set up and run the system. Many of the administrative decisions required by the MOH concerning system operations have still not been taken. Consequently, the report is not optimistic about the future of SSS now that she has left her employment with I.P.S. Her replacement, Mr. Greg Boyer, will continue the precedent of seeking occasional technical assistance from REACH.

An important lesson for REACH has been that support for an ongoing system or long-term activity is difficult to manage from afar. In the absence of in-country technical staff, REACH has a better track record in those areas or activities which have a clear start and finish - such as a NNT survey - and do not require continuous micro-management. The technical support to SSS was too far ahead of the administrative problems, which still are unsolved.

6. KEPI Manual

REACH was requested by KEPI to assist in editing the 300 page KEPI Manual after the 1989 DANIDA Review identified revision to be needed. Two REACH consultants arrived at a workshop in Mombasa in November 1989 with the REACH-edited version which REACH believed KEPI wished to discuss. The KEPI Management Unit team, however, arrived with their own edited version and were surprised that REACH had a copy of the Manual at all. According to Dr. Sang, KEPI had shared the Manual with training institutes and pediatricians and had solicited their comments.

The clear correspondence which passed between all parties make it difficult to understand how there could have been any doubt that REACH had been authorized to edit the Manual. However, the fact that the Manual had never officially been given to REACH by KEPI led to uneasy feelings at the workshop. REACH regrets this misunderstanding.

REACH has now completed its involvement in editing the 300 page KEPI Manual. Based on deliberations at the workshop, a REACH editing consultant made some further technical revisions and grammatical changes, while retaining the Kenyan "flavor." Unfortunately, the return of the Manual to Kenya was delayed for a couple of months in Washington. The document submitted by REACH to KEPI is presently being reviewed by KEPI Management Unit staff, after which it will be submitted to UNICEF for printing.

UNICEF agrees that REACH involvement in the final production of the manual is complete. One concern expressed by REACH and UNICEF at the Donors' Meeting in March 1990 was that KEPI expects 60,000 Manuals to be printed.

UNICEF estimates the printing cost would be more than a half million dollars. Before any mass printing, REACH hopes that UNICEF and KEPI choose to pre-test it. Funds for distribution must also be identified and a decision must be made on how to bind the document. Finally, the KEPI decision to retain some sections which have little general relevance (e.g., section of kerosene refrigerator maintenance) should be "re-visited" before printing.

C. Exploring New Technical Areas

1. Determining High-Risk Areas for Neonatal Tetanus

At the donor meeting in Nakuru, KEPI expressed an interest in conducting additional NNT mortality surveys. This writer cannot support this. Already Kenya has conducted five such surveys, more than practically any other country. These surveys have already concluded that NNT is a major public health problem which kills approximately ten newborns out of every 1000 live births. To document the "before" and "after" status of NNT incidence by using a survey is an expensive undertaking whose findings are limited to the administrative area in which the survey is conducted. Sample sizes would have to be huge so that survey-derived estimates would have sufficient precision. Otherwise, the confidence intervals around the estimates of two different surveys would likely overlap. This could be counter-productive for program managers, since it would not be possible to say that the control intervention had made any statistically significant difference in NNT incidence.

Disease surveillance reports received in Nairobi cannot be used to determine the incidence of NNT, since NNT is not disaggregated from tetanus at any age on the reporting forms. Also the routine reporting system is very incomplete.

The writer proposed that existing data at the district level might be used to determine high-risk areas for NNT, as has recently been done throughout Latin America. The KEPI Manager and writer visited district hospitals and public health offices in three districts - Kisumu, Kakamega and Nakuru - located in three different provinces in order to determine the usefulness of these data sources. The plan was to calculate the proportion of NNT cases to all pediatric admissions for the visited hospitals and public health offices for several recent years. This could indicate areas of relative high-risk and trends over time. Although it is well-known that NNT is very much under-reported, with WHO estimating that only 5%-10% of cases are routinely reported, it was felt that such a record review which controlled for the number of pediatric admissions might yield useful information on which to target control efforts.

The writer and Dr. Sang observed that this high-risk approach cannot work in the districts visited, and presumably in other districts, without a major investment in time and effort. This is due to the dubious quality and incompleteness of the data and, in some cases, the lack of comparability.

Since routine surveillance data cannot be used, other means of determining the magnitude and area of risk need to be found. The possibility of using Demographic and Health Survey data and analyzing neonatal deaths by age at death in days should be explored.

The number of outpatient tetanus cases, without a separate category for NNT, is supposed to be reported monthly by each health facility to the district public health office. The same form is used by the district to consolidate all health facilities' monthly reports and is sent to HIS in Nairobi. (See Annex 17 for a sample form.)

Inpatient morbidity and mortality data are recorded on a discharge sheet for each patient. Final diagnoses are then supposed to be recorded by statistical clerks and medical records officers on index cards by disease category according to the International Classification of Diseases (ICD, Ninth Revision, 1975). Whereas outpatient data are forwarded by district to Nairobi where they are analyzed (with 1987 being the most recent year of analysis), inpatient data remain in the hospital. The number of district hospital admissions is sent to HIS in Nairobi but are identified only by ward numbers, which are not standardized from hospital to hospital and which are not labeled as, for example, "pediatric ward," "intensive care," etc.

A third reporting system concerns the immediate (weekly) notification from health facilities to the district public health office, and from the latter to HIS in Nairobi, of cases and deaths of selected infectious diseases.

The methodology employed by the writer and Dr. Sang in each hospital visited was first to determine into which ward a NNT case would be admitted. Pediatricians were interviewed concerning their clinical impression regarding the trend of NNT incidence. Index cards with an ICD code 771 (other perinatal infections) were examined in order to locate 771.3 (neonatal tetanus).

A review of the consolidated outpatient reports at the district public health office was then conducted. The findings by hospital and district public health office are reported below.

New Nyanza General Hospital, Kisumu

There was disagreement about the ward to which a child with NNT would be referred. Dr. Orege, Medical Officer, said that about 5 cases of NNT were seen yearly and that practically all die. So far in the first quarter of 1990, one case had been admitted, he said, into the nursery isolation room.

A review of inpatient index cards for 1986 found that 5 NNT (3 female and 2 male) and 22 non-NNT cases (4 female and 18 male) had occurred. All 5 of the neonates died, with day of death ranging from 4 to 8. Only 4 of the non-NNT cases were known to have died, 3 female and 1 male. It was unknown how many patients left against medical advice.

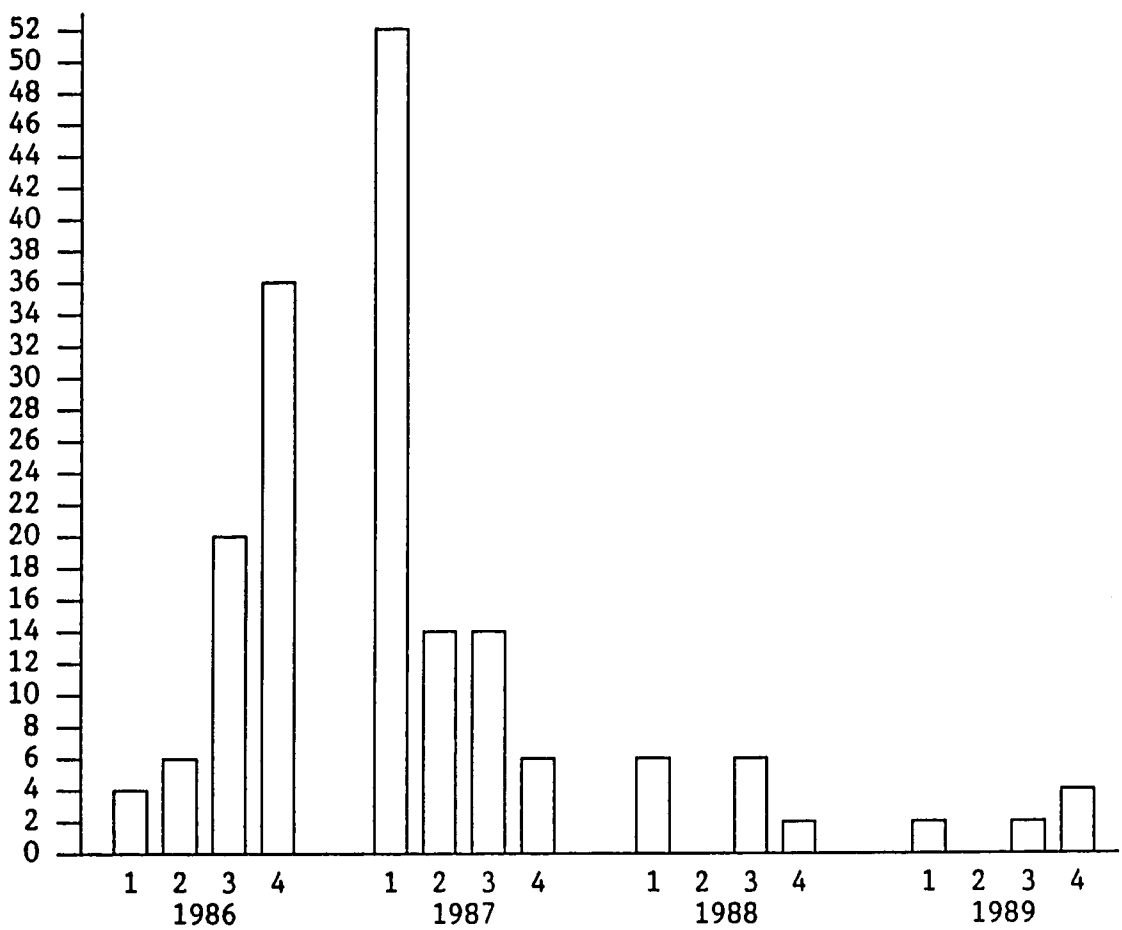
In 1988, the number of NNT cases had dropped to zero and non-NNT cases to 9 (4 female with 3 deaths, and 5 males with 1 death).

Of 25,815 new and repeat antenatal clinic visits in 1986, 7,207 total doses of TT were given. Of 10,141 new antenatal care visits and 19,120 repeat visits in 1988, 8,707 TT injections were given. TT injections are not broken down by dose. Since the MOH policy is to immunize women with 2 doses in the first pregnancy and one in each subsequent pregnancy, the reported number of TT doses is much lower than should have been given.

District Public Health Office, Kisumu

Total tetanus has decreased with 66, 85, 16 and 10 cases reported in 1986, 1987, 1988 and 1989, respectively. The quarterly variation in reported tetanus, however, leads one either to question the diagnosis or the completeness of reporting. (Table 1). There was insufficient time to explore this anomaly further, or to determine whether the peak in 1986 and 1987 reflected improved surveillance.

TABLE 1
REPORTED TETANUS CASES, BY QUARTER,
KISUMU DISTRICT HEALTH OFFICE, 1986-1989



Provincial General Hospital, Kakemega

Dr. Odongo, a pediatrician, has worked for 10 years in the hospital and reports seeing about 4-5 cases of NNT each year in recent years. He says that the number used to be higher. He said that NNT cases would be admitted into ward 5A, the pediatric ward. Table 2 shows little change in NNT incidence or NNT as a proportion of pediatric admissions in the past 3 years.

TABLE 2
NNT CASES AND PEDIATRIC ADMISSIONS, PROVINCIAL GENERAL HOSPITAL, KAKAMEGA
1986-1989

	1986		1987		1988		1989		1987-1989	
	C	D	C	D	C	D	C	D	C	D
NNT										
Male	2	0	2	2	4	3	3	3	9	8
Female	6	5	4	1	4	1	2	2	10	4
Total	8	5	6	3	8	4	5	5	19	12
Pediatric Admissions	NA		5,430		5,707		4,873		16,101	
NNT as Proportion of Pediatric Admissions	NA		.11%		.14%		.10%		.12%	

C=cases; D=deaths

A total of 10, 13 and 21 cases of non-NNT were admitted in 1987, 1988, and 1989, respectively, to the same hospital.

As in Kisumu's New Nyanza Hospital, the reported number of TT doses given were low compared to the number of new ANC visits and re-visits.

Kakamega District Health Office

The district public health office does not receive any hospital in-patient reports of tetanus, since only the number of outpatient cases are reported.

A large reduction in reported outpatient tetanus cases from 208 in 1988 to 91 in 1989 was noteworthy. Data for 1987 were not already consolidated for the year, so the writer counted all tetanus cases reported from the 42 health

facilities' annual month-specific totals. A total of 65 cases were reported in 1987.

A frequency distribution of reported outpatient cases of tetanus by year is presented in Table 3. While the great majority (71% to 80% in each year) of facilities reported no tetanus, some facilities reported a great number of cases in some years and practically none in other years.

TABLE 3
NUMBER OF OUTPATIENT TETANUS CASES REPORTED TO
KAKAMEGA DISTRICT HEALTH OFFICE, 1987-89

	No. of Facilities Reporting Specified Number of Tetanus Cases															
cases:	0	1	2	3	4	5	6	9	10	12	16	19	26	69	150	TOTAL
1987																
Facilities	30	5	2	2	0	1	0	0	0	0	0	1	1	0	0	42
Total Cases	0	5	4	6	0	5	0	0	0	0	0	19	26	0	0	65
1988																
Facilities	34	3	0	1	2	0	1	0	1	1	1	0	0	0	1	45
Total Cases	0	3	0	3	8	0	6	0	10	12	16	0	0	0	150	208
1989																
Facilities	37	4	0	3	0	0	0	1	0	0	0	0	0	1	0	46
Total Cases	0	4	0	9	0	0	0	9	0	0	0	0	0	69	0	91

The annual number of outpatient cases of tetanus for any facility reporting five or more cases in any year is shown in Table 4. These wide fluctuations from year to year in the same facility do not inspire confidence in the accuracy of the diagnosis. For example, Bakura Health Center reported no cases in 1987 and 1989 and 150 in 1988, which accounted for 72% of all cases in 1988. Similarly, Mwihila Hospital reported less than 5% of all cases in 1987 and 1988, but in 1989 accounted for 76% of all cases with 69 cases reported.

TABLE 4
ANNUAL NUMBER OF REPORTED OUTPATIENT CASES OF TETANUS BY ANY FACILITY REPORTING 5 OR MORE CASES IN ANY YEAR, KAKAMEGA DISTRICT HEALTH OFFICE, 1987-1989

	1987		1988		1989	
Facility	No.	% of Yearly Total	No.	% of Yearly Total	No.	% of Yearly Total
Kaimosi Hospital	19	(29)	16	(8)	?	(2)
Vihiga Health Center	26	(40)	3	(1)	0	(0)
Navakholo Health Center	5	(8)	10	(5)	0	(0)
Bakura Health Center	0	(0)	150	(72)	0	(0)
Provincial General Hospital	?	(<5)	12	(6)	3	(3)
Mbale Health Center	?	(<5)	?	(<3)	9	(10)
Mwihila Hospital	?	(<5)	?	(<3)	69	(76)

An analysis of the seasonality of cases also raises doubt about the diagnoses (see Table 5). In 1987, over half of the cases reported by the 3 highest reporting facilities occurred in the single month of June. In 1988, only 1% of cases were reported in June, while 27% were in October and 60% in December. In 1989, no cases were reported in the last quarter of the year in the facility which reported 76% of the year's total cases. It would be very unusual for tetanus, a non-communicable environmental hazard, to behave with such erratic fluctuations. No standard case definition for tetanus is used by health facilities.

TABLE 5
REPORTED OUTPATIENT TETANUS CASES IN FACILITIES REPORTING
A HIGH NUMBER OF CASES, BY MONTH, 1987-1989

Year	(Facilities)	J	F	M	A	M	J	J	A	S	O	N	D	Total
1987	(Kaimosi, Vihiga, Navakholo)	1	0	0	0	4	26	5	0	0	1	6	7	50
1988	(Kaimosi, Bakura, Provincial General Hospital, Navakholo)	6	2	2	2	2	2	2	1	10	50	1	106	186
1989	(Mwihila)	8	8	8	4	6	7	8	8	12	0	0	0	69

According to the Annual HIS Report for 1988 for Kakamega District, nearly 90,000 pupils in 144 schools were seen by the school health services for helminthic and eye infections, malaria and BCG vaccination. According to UNICEF, this represents about a quarter of all students 6-14 years old enrolled in 1987 in the district's primary schools. UNICEF reports that half of all students in Kakamega are female. Immunization of female students with TT in the early grades before attrition, by a health service which is already active in schools, would be a sensible medium-term strategy for controlling NNT. At present, this is not being done and represents a missed strategy in a district where more than 90% of deliveries take place at home and where 94% of children 6-14 years old are enrolled in school (UNICEF data). (The district-wide proportion of new ANC visits to expected newborns was unavailable.)

Provincial General Hospital, Nakuru

The most recent in-patient data available in consolidated form were for 1986, but data for 1984 and 1985 were missing. A total of 9, 18 and 2 tetanus cases were reported in 1982, 1983 and 1986, respectively. One case classified as NNT was recorded as 7/12, or 7 months old. Ward numbers change frequently and so it is difficult to know which was the pediatric, nursery or isolation ward in a particular year. Opinions differ as to where NNT cases are admitted. Forms, index cards and staff are all in short supply.

Occasional piecemeal input from REACH, or any other donor, will not improve the HIS. The shame is that in spite of the effort going into the HIS system, "the juice is clearly not worth the squeeze."

District Health Office, Nakuru

Only about 1/3 to 1/2 of the facilities report at all. Monthly numbers of reported outpatient cases are kept by facility, but are not added up by facility for the year. Clearly, no use is made of the data. TTI and TT2 were reported by facility by month in 1987 but was not totaled by facility for the year. 1988 data were said to be misplaced.

2. Cold Chain Observations from Field Trip

As time was short, only a rapid look at the cold chain in a few places was possible. Nevertheless, serious enough problems were uncovered to warrant a more detailed investigation.

District Cold Store, Old Nyanza Hospital

Several problems were observed in spite of the proximity of regional cold chain supervisors in Kisumu:

- Large quantities of DPT had been received in a frozen state.
- Expired vaccine was found in the refrigerator. This may be due to the fact that DPT and measles vaccines are not being opened according to their expiry dates.
- Sealed bottles of water did not occupy unused refrigerator space as a means of stabilizing and holding the temperature every time the door is opened.
- Vaccine stock records or bin cards were not kept by expiry date.
- A positive point was that the date of receipt was recorded on each box of vaccine.

District Cold Store, Kakemega

- A box of DPT with a distant expiry date was being used, while other DPT boxes soon to expire were buried unused deep in the refrigerator.
- BCG boxes were not stored by expiry date.
- No sealed bottles of water (or liquid ice packs) were occupying unused refrigerator space.
- Some DPT vials were presently frozen.

District Health Office, Nakuru

- Vaccine was not kept by expiry date.

3. Early Planning for a Nationwide Coverage Survey, 1991

KEPI plans to conduct a nationwide coverage survey in 1991. USAID is interested in participating in the survey. This writer recommends that a serological component be included to determine the extent of maternal protection with tetanus antitoxin. Serological methods have been pioneered by the Danish State Serum Institute, who could possibly be approached by DANIDA for laboratory assistance, if this is agreed by all. The method requires a drop of blood to be drawn from finger pricks onto filter paper.

There are reasons why such a serological approach is needed.

- The routine reporting system in Kenya is very incomplete, with only 50% of expected immunization reports received during 1987.

- The lack of long-term cards to record TT doses received makes it difficult to rely on surveys and mothers' verbal histories to determine the proportion of babies born protected from neonatal tetanus.

- There are difficulties inherent in using a single year's "uptake" of TT to determine the level of protection among women of childbearing age. Unlike the case of infants, a cohort which renews itself annually and is consequently easily calculated, multiple doses of TT are administered with varying intervals over a 30 year reproductive span, and women enter and leave the eligible age range all the time. "Coverage" in a given year does not equal "protection," because it overlooks vaccinations given in past years which are still protective.

Taking the serological findings as the "gold standard" of protection, the survey will be useful for validating the relative accuracy of estimates of protection derived by cards, verbal histories, or service statistics.

Dr. Oyoo explained that higher approval of the research design would be required for this serology to be done.

KEPI hopes to conduct the survey in early 1991 and agrees that the data will be entered on coverage survey analysis software (COSAS). According to Dr. John Kekovole of the Ministry of Planning, district populations as determined by the 1989 census will be released by mid - 1990. However, sub-location populations will not be released until mid - 1991. In standard 30 cluster surveys, the sub-location would be the sampling unit used once the district has been selected in the first stage of sampling. Both districts and sub-locations are selected by proportionate population sampling.

The unavailability of the sub-location populations until mid-1991 at the earliest poses a problem. Either KEPI will need to wait until the second half of 1991 to conduct the survey, or else KEPI may need to use the nationwide sample, consisting in each district of 24 clusters of 100 households, which Dr. Kekovale's statistical unit will construct based on the 1989 census. This nation-wide sample will be ready by mid-1990 and local residents identified for future survey work.

If KEPI decides to use the nationwide sample, they will need to discuss with donors and the Ministry of Planning about the personnel who will conduct the survey. The Ministry of Planning resident staff are probably best used to accompany trained MOH surveyors as guides, interpreters, and escorts.

A statistician familiar with EPI coverage surveys should be consulted to determine the precision of estimates derived from a 24 - cluster survey, as opposed to a 30 - cluster survey.

The KEPI manager has requested that the 1987 coverage survey data not be entered into COSAS until the time of data entry for the 1991 nationwide survey.

VII. Recommendations

See Section I (Executive Summary) for the main findings and recommendations.

VIII. Follow-up action

1. USAID should encourage DANIDA to search for a manager with technical EPI skills to replace their outgoing advisor. REACH would be willing to help to identify such persons, if requested.

2. KEPI needs to:

- include a section on data management in the PLOP;
- finalize the PLOP, 1991-1995;
- incorporate into the meeting minutes the discussion from the third day of the Joint KEPI-Donor Strategic Planning meeting;
- prepare a workplan for 1990.

3. USAID and DFH are to discuss USAID training support for an existing computer literate staff member to become a programmer. USAID should also consider providing training in DOS, LOTUS, Dbase and word processing for the new data management officer at KEPI.

4. Given its limited central staff, KEPI needs to prioritize activities and delegate even more to the districts and provinces.

5. REACH should request that the Institute for Resource Development in the USA secure the release of DHS data from the National Council for Population and Development in Kenya, so that analysis of neonatal mortality, by age at death in days, can be conducted by REACH.

6. If agreeable to KEPI, DANIDA could approach the Danish State Serum Institute, who have internationally recognized expertise, to do tetanus antitoxin serologies as part of the nationwide coverage survey planned for 1991.

7. REACH will provide KEPI with some statistical advice concerning the loss of precision which would result from conducting a coverage survey with only 24 clusters, rather than the customary 30.

ANNEX 1

ANNEX 1

PERSONS CONTACTED

Mr. John Agweatty	Statistical Clerk, Kisumu
Mr. David Alnwick	Senior Project Officer, UNICEF, Nairobi
Mrs. Mary Atieno	Public Health Technician, Kisumu
Mr. Jovi Ayub	Program Officer, DICECE, Siaya
Mr. Gregory Boyer	Systems Analyst, IPS, Nairobi
Mr. N. Chimoy	Records Officer, Kakamega
Dr. Alan Cross	Dept. of Pediatrics, U. of Nairobi
Ms. Jeanne Cushing	Computer Specialist, DHS
Mrs. R.D. Dola	Sr. Nursing Officer, Kisumu
Mr. A. Dongo	District Clinical Officer, Siaya
Mr. Henning Frotlund	Deputy Head, DANIDA, Nairobi
Dr. Lynne Gaffikin	Consultant
Ms. Molly Gingerich	Dep. Director, Health Office, USAID/Nairobi
Mr. Torkil Hoft	Cold Chain Engineer/Advisor, KEPI, Nairobi
Mr. J. Winther Johannsen	Management Officer, DANIDA, Nairobi
Ms. Connie Johnson	H/P Dev. Officer, USAID, Nairobi
Ms. Grace Kagondu	REACH Communications Specialist, NairobiM
Mr. S. M. Kamau	Logistics Officer, KEPI, Nairobi
Mrs. Philomena Kamunge	Secretary, KEPI, Nairobi
Ms. Josephine Kariuki	REACH Administrative Assistant, Nairobi
Dr. John Kekovole	Deputy Dir. of Statistics, Min. of Planning
Mr. Kiarie	Operations Officer, KEPI, Nairobi
Dr. Arnfried Kielmann	Professor, University of Nairobi
Mr. Geoffrey Kimani	Statistician, HIS, Nairobi
Mr. Paul Kizito	Economist/Statistician, NCPD, Nairobi
Mr. H. Kodo	Health Education Officer, KEPI, Nairobi
Dr. Eric Krystall	Director, FPPS, Nairobi
Mr. John Kweri	Team Leader, IPS, Nairobi
Mr. Likulu	Supplies Assistant, KEPI, Nairobi
Dr. James Maneno	Project Officer, UNICEF, Nairobi
Mr. S. Matthews	Medical Records Officer In-Charge, Kakamega
Mrs. Mlay	Accountant, EPI, Tanzania
Ms. M.N. Mwangi	Training Officer, KEPI, Nairobi
Mr. Nathan Mwema	Statistician, HIS, Nairobi
Dr. H.W. Odongo	Pediatrician, Kakamega
Dr. M. Ogondo	Medical Superintendant, Kakamega
Mrs. Grace Olang	Dist. Public Health Nurse, Kisumu
Mrs. Ombayo	Acting District Public Health Nurse, Siaya
Mr. James Ombogo	Statistical Clerk, Kakamega
Mr. Mark Ondiege	Provincial Health Ed. Officer, Kisumu
Mr. Denish Onyango	Medical Records Asst., New Nyanza Hospital
Dr. F. Onyango	Chmn., Dept. of Pediatrics, U. of Nairobi
Mr. David Oot	Director, Health Office, USAID, Nairobi
Dr. J.O. Opar	Medical Superintendant, New Nyanza Hospital
Dr. I.A. Orega	Medical Officer, New Nyanza Hospital
Dr. Vincent Orinda	Dept. of Pediatrics, U. of Nairobi
Mr. Rafael Owako	Physiotherapist, Siaya
Mr. Peter Owich	Medical Records Asst., New Nyanza Hospital

Mr. M. Owidi	Library Technician, Kakamega
Mr. Oroo Oyioka	District Inspector of Schools, Siaya
Dr. A.O. Oyoo	Director, DFH, Nairobi
Dr. G.O. Rae	CS Fellow, AMREF, Machakos
Dr. R.K.M. Sang	Manager, KEPI, Nairobi
Ms. Jane Wanza	Data Management Officer, KEPI, Nairobi
Dr. David Wendo	Medical Officer of Health, Siaya

ANNEX 2

ANNEX 2

ANNEX 2
Meeting Agenda

KEPI PLAN OF OPERATION 1991-1995 DRAFT PLAN:

REVIEW WORKSHOP - HOTEL KUNSTE, NAKURU, 12-14 MARCH 1990:

MONDAY 12TH MARCH 1990:

8.00a.m	-	Departure from Afya House for Nakuru
10.30a.m	- 12.00noon	Checking in at Hotel Kunste. Moderator - Mr. S.M.Kamau.
12.00	- 1.30 p.m	L U N C H
1.45 P.M	- 2.00 P.M	CLIMATE SETTING - Mr. Kamau / Dr. Sang
2.00p.m	- 3.00p.m	INTRODUCTION *Background and Overview - Dr. Sang
3.00p.m	- 3.30p.m	OVERVIEW OF THE DRAFT DOCUMENT - Mr. Johansen
3.30p.m	- 4.00p.m	COFFEE/TEA BREAK
4.00P.M	- 5.00P.M	TRAINING including Operational Research - MRS.MWANGI
5.00PM	- 6.00PM	DATA MANAGEMENT - MS.JANE WANZA

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TUESDAY 13TH MARCH, 1990:

8.00A.M	-	9.00A.M	VACCINES	- procurement - storage - MR. KIARIE - Distribution
9.00a.m	-	10.00a.m	- GAS SUPPLY - OTHER SUPPLIES	- MR. KAMAU - cards, Refrigerators, etc - MR. LIKULU
10.00a.m	-	10.30a.m	TEA / COFFEE BREAK.	
10.30A.M	-	11.30A.M	TRANSPORT	- MR. KAMAU
11.30A.M	-	12.30P.M	COLD CHAIN MAINTAINANCE	- MR. HOFT
12.30P.M	-	2.00P.M	L U N C H	
2.00P.M	-	3.30PM	SOCIAL MOBILIZATION	-MR. KODO -MS.KAGONDU
3.30P.M	-	4.00P.MN	TEA / COFFEE BREAK	
4.00P.M	-	5.30P.M	SUPERVISION AND MONITORING	-DR. OYOO -MR. KAMAU -MRS. MWANGI -MR.KIARIE

(Also Inputs from Dr. Sang, Mr. Kodo, Ms. Kagondu, Ms. Wanza and Mr. Hoft.)

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WEDNESDAY 14TH MARCH 1990

8.00 - 9.00A.M - OUTSTANDING ISSUES TO BE ADDRESSED -DR.OYOO
-D. SANG

9.00A.M - 10.30A.M - DONORS' RESPONSE

- DANIDA

- USAID

- UNICEF

10.30AM - 11.00A.M - TEA/COFFEE BREAK

11.00AM - 12.00NOON NEXT STEPS/CLOSING REMARKS
- DR. OYOO

12.00 NOON - 1.00P.M - L U N C H

1.00P.M - 1.30 P.M CHECK OUT

1.30P.M - DEPARTURE TO NAIROBI

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ANNEX 3

ANNEX 3

MINISTRY OF HEALTH

KENYA EXPANDED PROGRAMME ON IMMUNIZATION (KEPI)

DRAFT

PLAN OF OPERATION 1991-1995

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APPENDIX

I KEPI BUDGET
II TRAINING BUDGET
III VACCINE PROCUREMENT BUDGET
IV EQUIPMENT & SUPPLY BUDGET
V GAS BUDGET
VI REFRIGERATOR REPLACEMENT PLAN
VII SOLAR INSTALLATION PLAN
VIII VEHICLE REPLACEMENT PLAN
IX SOCIAL MOBILISATION BUDGET
X SUPERVISION & MONITORING BUDGET
XI FACILITY EXTENSION PLAN
XII RECURRING MAINTENANCE PLAN

1. PREFACE

Following the successful implementation of KEPI during the period 1980 - 1986 and the Consolidation Phase (Phase II - 1986 - 1990) the need for this Plan of Operation 1991 - 1995 which addresses issues of sustainability of the Programme was realized.

This "KEPI PLAN OF OPERATIONS - 1991 - 1995" is a working document which outlines possible strategies among various possible alternatives that will realize the achievement of set Targets on Immunization Coverage during this plan period.

The information in the document is based on the analysis of the plans as outlined by KEPI Management Unit, on behalf of the Ministry of Health, and those from the districts in the whole country on issues that relate to Logistics (Transport, Supplies and Equipment required to maintain the Cold Chain), Training, Social Mobilization, Supervision, Monitoring and Evaluation, and Proper Data Management at all levels.

This document, which is meant to be used by KEPI Management Unit, District Health Management Teams, Provincial Health Management Teams and Funding Agencies, should be viewed as giving a broad basis for operations. It should be understood that different districts or provinces may move at different rates in achieving the set targets.

BY KEPI MANAGER
KEPI MANAGEMENT UNIT

DIVISION OF FAMILY HEALTH.

2. SUMMARY:

2.1 The following pages contain the KEPI Management Units suggested Plan of Operation for the coming 5 years, starting on 1.1.91 up to 31.12.95.

2.2. The time up to 1.1.91 will be used primarily to carry on the normal day to day activities in the programme while preparing for a continuation in Phase III.

The proposed National Transport Study and the Cold Chain Study together with an appraisal of this draft plan of operation will need further discussion between DANIDA and the Director of Medical Services on behalf of Ministry of Health before they can be undertaken.

If funds can be identified for the proposed extension of the cold room/freezer room at National Health Laboratories in Nairobi for 1990 the work will start immediately and will thus be removed from the 1991 budget proposal.

2.3. The total budget for the proposed plan 1991-95 come to K.Shs.532.83 million in 1990 prices.

A suggested contribution between the Government of Kenya and the donor agencies with regard to the funding is attached as appendix I. This suggestion is based on the division so far but is only to be considered as an example and is naturally subject to further negotiations.

2.4 Two areas need special attention and they are: Equipment and Social Mobilization.
Both require substantial budget allocation and should be thoroughly scrutinized.

However, there is need to replace worn-out vehicles and equipment and with the introduction of the social mobilization in the programme it is obvious that the budget proposals compared with the Phase II have increased.

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3. BACKGROUND:

INTRODUCTION:

The Kenya Expanded Programme on Immunization (KEPI) launched in June 1980 has successfully completed its first phase - Implementation Phase (Phase I - 1980 - 1986) and is now coming to the end of its second - Consolidation Phase (Phase II - 1986 - 1990), with a total of 1250 out of about 1800 Government of Kenya, Private and Non-Governmental Organizations health facilities offering Immunization as part of their Maternal and Child Health services.

KEPI is planned and implemented in accordance with World Health Organization's Expanded Programme on Immunization (EPI) guidelines, and uses vaccines that comply with World Health Organization's specifications and standards. As Immunization is one of the elements of Primary Health Care, KEPI fully endorses the Global Goal of Health for All by the year 2000, by ensuring that immunization is available to children and ante-natal mothers for protection against the six EPI target diseases namely:-

* Tuberclosis
* Poliomyelitis
* Diphtheria
* Whooping cough (Pertusis)
* Tetanus
* Measles

The main aim of immunization is to reduce Morbidity, Mortality and Disability from the six target diseases. KEPI's strategy is to immunize children and pregnant mothers daily at fixed health facilities and to a limited extent supplement this by mobile or outreach clinics in the more inaccessible areas. It is stressed that immunization practices should include among other things, the use of sterilizable syringes and needles but one sterile syringe and one sterile needle for each injection.

3.2 HIGHLIGHTS OF PHASE I AND PHASE II:

Highlighting the two phases will help in understanding the progress of the Programme.

3.2.1 Phase I - (1980 - 1986):

This period saw the Planning, Pretesting and Implementation of the Programme, as follows:-

June 1980 - June 1981:

This is termed Preparatory Phase which resulted in setting up of KEPI Management Unit (KEPI M.U.) itself with subsequent drawing up or planning for requirements for:-

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Training, Logistics, Transport, Cold Chain equipment, Vaccines Procurement and Reporting.

July 1981 - July 1982:

This is a period of Pretesting in which the Programme was launched, implemented and evaluated in Kirinyaga District (Pilot district).

July 1982 - June 1986:

On the basis of the results from the Pilot district, this period of implementation saw the Programme being implemented in all the remaining 40 districts (by then Kisii district had not been divided into 2 - Kisii and Nyamira) of Kenya starting from Coast Province, then Nyanza, Rift Valley, Central, Eastern, Western and North Eastern Provinces.

ACCOMPLISHMENTS OF PHASE I:

* Training of staff (supervisors and implementers).
* Provision of Cold Chain equipment for all districts.
* Vaccinations equipments / supplies to all the districts.
* Provision of vehicles for all districts and the two municipalities. (Mombasa and Nairobi)
* 41 Immunization Coverage Surveys conducted.

3.2.2 PHASE II:

This is a phase of Consolidation which aimed at certain achievements notably:-

3.2.2.1 Better quality Immunization services (i.e. effectiveness of Services:)

* Existing ones to be more attractive.
* Sure vaccine supplies (right quantities at the right place when required.
* Potent vaccines in use all the time (i.e. functioning cold chain system).

* Good sterilization methods (steam sterilization for 20 minutes). One sterile needle and syringe per each injection.

* District KEPI Planning to be done by objectives i.e. district / S.D.P. targets to be worked out based on data available.

3.2.2.2 More expansion:

* Population-wise: In slums, nomads, 10 priority districts (Kakamega, Busia, Bungoma, Siaya, Kisumu, South Nyanza, Kericho, Nandi, Tran Nzoia and Tana River).

Why this priority?

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Because it was noted that:-

* Immunization coverages are very low - less than 50%.

* Population Density and Birth Rate high.

* I.M.R.- very high > 100/100 live births.

* Communication to health facilities very poor.

* Health facilities were far apart and sometimes few.

* Staff manning health facilities were trained in KEPI principles yet there was minimal impact.

Geographically - North and North Eastern Kenya,- Slum areas, - Islands (Lake Victoria, off Lamu).

In general, to maintain sustainability, effective supervision and good quality services, it was proposed to open 50 immunizing health facilities annually.

3.2.2.3 Public Mobilization (Social Mobilization): In order to make the public come forward and demand immunization services - consequently we reduce the drop-out rates and increase further coverage through - mass media, printed materials (posters), face-to-face communication e.g. in clinics, schools, women groups, etc. and before or during immunization days (weeks and or days of accelerated immunization activities).

3.2.2.4 Promotion of Intersectoral Collaboration:

Why? Because Ministry of Health alone does not possess all Resources, Manpower and Expertise. It is therefore necesary to collaborate with:-

- NGOs e.g. U.N.I.C.E.F., Religious organizations, etc.
- Private and Voluntary Organizations (P.V.O.'s) e.g. Rotary International, AMREF, Red Cross, etc.
- Other Government of Kenya Ministries e.g. Education, Information, Agriculture, Social Services, Provincial Administration, Co-operatives, Veterinary,etc.

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3.2.2.5 Better Disease Disease Surveillance:

This is really monitoring to see the trends of the occurence of the six - EPI target - vaccine preventable diseases of childhood i.e. Polio, Tuberclosis, Measles, Whooping Cough, Tetanus, and Diphtheria. Precisely, KEPI aims at:-

* Elimination of Polio by mid 1990s.

* Reduction of Neo-Natal Tetanus from 11/1000 live births (1984) to 5/1000 live births by 1993.

* Reduction in the number of Measles cases significantly and shifting of age-specific incidence from 1-2 years to 4-6 years (during outbreak).

3.2.2.6 Improvement on Programme Monitoring and Evaluation:

This is with specific emphasis on the Five (5) Pillars of KEPI namely:-

* Supervision - Regular, effective, all levels.
* Training - Especially on the job.
* Cold Chain - Twice daily temperature recording - Use of special indicators.
* Surveillance- Routine Reporting
  - Sentinel Reporting
  - Special surveys
  - Outbreak Investigations.
* Public Mobilization (Social Mobilization) - to be intensified and sustained country-wide but with special emphasis to priority and disadvantaged districts.

3.2.2.7 More Publicity on KEPI Principles

KEPI principles to be introduced in basic training of Doctors, Nurses, Public Health Officers, Nutritionists, etc.

3.2.2.8 Raising of Immunization Coverage:

To be raised from 51% (1987) to a minimum of 80% and sustain it.

3.2.2.9 Replacement of vehicles and equipment.

Replacement of old and uneconomical vehicles and equipment with new once and at the same time ensure that spare parts are available

4 JUSTIFICATION:

Prior to KEPI introduction, Immunization Coverage Surveys conducted showed the proportion of children fully immunized (1BCG, 1Measles, 3DPT, 3OPV), to be 43%. However, after implementation of KEPI and a survey done in 1987, in a number of randomly selected districts, the proportion of children found to be fully immunized on an average was 51% with a drop-out rate of 17%. It was also noted that there was marked geographical imbalance and even with the various antigens, as coverage was low in others and very high in others.

However, one encouraging finding was that at least 95% of children had been exposed to at least one type of vaccine, suggesting that the problem is not that of lack of vaccines or accessibility to facility but that probably of factors within the communities. For this reason, efforts have been directed into ways of reducing greatly the big drop out rate, and consequently ensure that every child completes the immunization.

As a means of bridging the marked geographical imbalance on immunization coverage special focus has been directed to priority and disadvantaged districts using social mobilization as the major strategy. Consequently heavy input in terms of funds and educational materials has been put into social mobilization, details of which are indicated elsewhere in this document.

To facilitate programme sustainability, efforts will also be directed to means of ensuring adequate transport, vaccines, cold chain equipment, supplies, training, health education and operational research. All these have been reflected elsewhere in this document.

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5. DEVELOPMENT OBJECTIVE

For KEPI the development objective for the proposed phase III can be defined as:

Improved Health Status for the Kenyan Population and the intermediate objective as raised level of Immunization to children and mothers in all districts in Kenya.

6. PROJECT OBJECTIVE

Based on the above objectives the Project objective for KEPI for the proposed phase III is:

Reduced Morbidity, Mortality and Disability caused by six EPI diseases by raising Immunization Coverage from 51% to 80% on average from 1991 - 1995 countrywide.

The KEPI activities centré on 4 main areas:

Training.

Logistics: including supply of vaccines, syringes, needles, stationaries, gas, equipment and procurement of vehicles.

Social Mobilization.

Supervision and Monitoring.

Each of the above activities will be dealt with in the following chapters. namely:

7. Training

8. Logistics
- 8.1 Vaccines
- 8.2 Equipment and supplies
- 8.3 Gas
- 8.4 Cold Chain
- 8.5 Transport

9. Social Mobilization

10. Supervision and Monitoring.

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7. TRAINING

7.1 INTRODUCTION:

During the period November, 1981 to May, 1989, over twenty training courses, mainly on Programme Management at district level have been conducted at National, Provincial and District levels. A total of over 1,000 health workers which include Doctors, Public Health Nurses, Public Health Officers, have been trained.

Over a hundred and sixty Operational level courses have been held mainly to increase the health workers' knowledge on management skills and cold chain maintainance. A total of 5,820 health workers from rural health facilities have been trained in the same period.

From 1988, it was planned to shift KEPI training from post basic to basic training colleges. Already guidelines for KEPI principles to be included into the curriculum for MTCs have been finalised and are in use. Teaching on the job has been carried out more vigorously by the public health nurses and others during their supervisory visits.

Nine midlevel management courses will be held during 1991 to 1995 for 360 doctors, Public health Nurses, Public Health Officers, Clinical Officers, Hospital Secretaries, Hospital Matrons and Public Health Education officers in Management skills. These cadres will then go out to supervise the rural health workers. 120 DHMT members, MTC tutors will be trained in 3 courses during 1991 alone. There will be need to change and strengthen the basic training thereby reducing the need for MLTC in general. However, the change should be phased out to allow the DHMT members managing the programme at the district level to participate and be trained. Thus in 1992 and 1993, there will be two (2) courses, in which 80 DHMTs will be trained throughout the country.

Cold Chain maintainance courses will follow each course and this will cover a total of 40 health workers each.

In 1994 and 1995 the need for MLTC will be reduced further. We envisage to hold one course only. The course participants will be mainly trainers from various MTCs.

Twenty five operational level training courses (OLTC) will be held each year. Each of the 42 districts will have at least 3 courses during the year 1991 to 1995. A total of 125 courses will be held and 4,500 health workers will be trained in KEPI Operational Management and cold chain maintainance (CCMC). By conducting 3 courses per district during the plan period, we will ensure regular achievement of district established targets and continuity of the process of increasing effectiveness of KEPI Management in health centres, and dispensaries.

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The following table shows the distribution of OLTC / CCMC in the Province in a year as an example.

Participants from training venue	No. of OLTC	No. of CCMC
Nairobi Province	2	2
Nyanza Province	3	3
Western Province	3	3
Eastern Province	3	3
Coast Province	3	3
R.Valley Province	6	6
Central Province	3	3
N.Eastern Province	2	2
TOTAL	25	25

We envisage to have one (1) course on solar steam sterilizer and solar fridge every year, for the next 5 years (1991-1995). Each year we will train 25 health workers for 1 week at the Provincial Rural Health Training Centres.

Eighteen (18) workshops (see next page) on improving programme monitoring and supervision will be organised throughout the country, for 360 multidisplinary health members for district hospitals within the province.

Each province will arrange its workshops and select their themes according to their needs. There will be 30 participants in each workshop and PMO and his team will be facilitators. The management unit staff will be included where necessary, and only with an invitation from PMO. It is however necessary for the Management Unit staff to attend these workshops during 1991.

Province	No. of participants	No. of workshops	No. of districts
Coast	60	2	6
Eastern	60	2	6
Central	60	2	5
Nairobi Prov.& Dist.	60	2	1
Rift Valley	180	6	13
Western	30	1	3
Nyanza	60	2	5
N. Eastern	30	1	3
T o t a l	540	18	42

It is planned that each year from 1991 - 1995 one workshop will be held in increasing knowledge on vaccine management, for central, regional and district storekeepers. The workshop will be held in Nairobi for 15 people for one week.

In the planned period 150 missed opportunity survey (MOS) will be done. In one year alone 30 surveys will be conducted.

We envisage the service to be done simultaneously with the 9 midlevel and 25 operational level courses that were described earlier.

Follow up activities will be undertaken by the RHTC tutor. It is planned that eight follow up activities per year will be undertaken. Each province having one such follow-up. This activity will strengthen the rural health training tutors as well as the work performance of the rural health workers.

In Nairobi, the Management Unit staff will be responsible for the follow-up. Continuous education for KEPI Management Unit staff is the key for programme enhancement. For proper management it is planned that 3 members of staff embark on either long or short courses in or out of the country.

Sixty thousand copies of the new manual will be printed within the 5 years period. In 1991 20,000 manuals will be printed, and ten thousands in the following years. Thirty six MTCs, GOK and NGO plus 6 rural health training centres will be equiped with 38 16mm film projectors during 1991 and 1992. Similarly, the same institutions will be equipped with 36 overhead projectors and slide projectors.

The six Rural Health Training Centres will be equipped with a T.V and video tape cassette recorder each in 1991. The equipment will be used by other training institutions in the province.

To support the midlevel training courses, we require 50 calculators.

7.2 OUT PUT.

7.2.1 Midlevel operation:

Trained 360 DHMT members and MTC lecturers in KEPI Management skills between 1991 - 1995.

7.2.2 Cold Chain

Trained 180 DHMT members and MTC lecturers in cold chain management between 1991-1995.

7.2.3 Operational level.

Trained 4500 Rural Health Workers from all districts at the six RHT Centres in cold chain management between 1991 - 1995.

7.2.4 Cold Chain

Trained 2250 RHworkers from all districts at the six RHT Centres in cold chain management between 1991-1995.

7.2.5 Solar refrigerator / solar steam sterilizer Training

Trained 125 health workers in solar fridge and solar steam sterilizers maintainance at the PRHTC by 1995.

7.2.6 Annual Performance Evaluation.

Conducted 18 evaluation workshops with 540 participants in the period 1991 - 1995.

7.2.7 Vaccine Handling Management.

Trained 75 vaccine storekeepers from regional and district stores in vaccine handling and management by 1995.

7.2.8 Missed Oportunity Surveys:

4824 health workers trained in conducting missed opportunity surveys during MLTC and OPLTC in RHTC by 1995.

7.2.9 Follow-up (Assessing Trainees performance) 40 follow-up visits conducted by RHTC trainers to 4500 health workers in Rural Health Facilities in the country by 1995.

7.2.10. Continuous Education for Management Unit Staff

15 staff of Management Unit attend courses by 1995 both in and out of the country.

7.3 ACTIVITIES.

	1991	1992	1993	1994	1995
7.3.1 Midlevel	3	2	2	1	1
7.3.2 Cold Chain	3	2	2	1	1
7.3.3 Operational Level	25	25	25	25	25
7.3.4 Cold Chain	25	25	25	25	25
7.3.5 Solar training	1	1	1	1	1
7.3.6 Annual Performance	18	18	18	18	18
7.3.7 Vaccine handling	1	1	1	1	1
7.3.8 Missed Oportunity Survey	30	30	30	30	30
7.3.9 Follow-up	8	8	8	8	8
7.3.10 Continuos Education	3	3	3	3	3

ad. 7.3.1.Mid level - These will be held for DHMT members to equip them with management skills as follows.

ad. 7.3.3.Operational Level

ad. 7.3.5.Solar Refrigerator / sterilizer training

ad. 7.3.6.Annual Performance Evaluation:

ad. 7.3.7.Vaccine handling managment

ad. 7.3.8.Missed oportunity Surveys (to be done during mid level 5 Operational level 25).

ad. 7.3.9.Followup (Assessing trainees performance). RHTC trainers will do followup 1 times a year per province.

ad.7.3.10.Continuos Education for Management Unit Staff.

7.4 BUDGET

The budget for the training activities for the 5 year period is attached as appendix II

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8.1. VACCINES:

8.1.2. OBJECTIVE

Vaccinations of children and mothers with potent and saf vaccines is the overall objective of the immunization programmes. Thus vaccines need to be procurred from WHO recognised manufacturers and UNICEF has all along assisted this procurement. In order to maintain this potency, the vaccines need to be brought in, kept, and distributed in a cold chain system up to the time of immunization of children and mothers. Notification by telegram (telex) is always given through the Donor agencies and UNICEF. Priority release arrangements exist at the airport through the Government Clearing agent. The vaccines are supplied quarterly in equal amounts and the supply schedule is submitted to the Donors.

8.1.3. Total Vaccine Requirements.

The estimated requirement over the 5 year period plus estimated cost is shown in the appendix III. The total requirements are estimated by taking into account:-

1. Previous years' normal issues per month/year.

2. Expected population increase.

3. Buffer stock balance of not less than 1,000,000 doses for each vaccine.

4. It is anticipated that with the increased Health Education among the population, vaccine wastage rates will be minimal and the total requrements could remain static for some time

8.1.4. DISTRIBUTION STRATEGY:

I Direct Vaccine Distribution:

This activity which was started in February, 1985 covers a major activity within the KEPI programme. During these trips a checklist is available and helps the officer to check on:

1. How vaccines are being stored.

2. Whether the cold chain equipments are functioning well.

3. Stock of vaccines with their expiry dates.

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4. Other reports required by the KEPI Management Unit for possible action.

Presently, the country is divided into 3 main distribution routes.

(a) Central Route:

This covers the following District Vaccine Stores including some NGO hospitals: Kiambu, Thika, Murang'a, Embu, Kerugoya, Nyeri, Nyahururu, Nanyuki, Isiolo, Meru, Nkubu and Chogoria.

(b) Western Route:

This covers the following: Naivasha, Nakuru, Molo, Kericho, Kisii, Homa Bay, Kisumu, Kakamega, Siaya, Busia, Bungoma, Kitale, Kapenguria, Eldoret, Iten and Kapsabet.

(c) Coastal Route:

The route covers Wundanyi, Mombasa, Kilifi and Kwale. (With the availability of new lorries at CVS, more districts are expected to be reached for direct distribution).

II DIRECT COLLECTION BY DISTRICT HOSPITAL.

This is done by districts which are near Nairobi e.g. Kajiado, Kitui, Machakos and Narok. It is also a system sometimes used when particular district has finished vaccine before the next supply period.

III DISTRIBUTION BY PUBLIC MEANS I.E. BY ROAD, RAIL OR AIR:

This is the system rarely used nowadays but for some districts this is likely to continue e.g. for Garissa, and other northern districts. Before the vaccines are sent the receiving district is informed by telephone or telegram

8.1.5 COLD STORAGE SPACE.

We have one new cold room which was put up by Danida with the introduction of KEPI and two small pre - KEPI Cold-rooms at National Public Health Laboratories. Up to 1988 there had been no problem with the storage space, but then the two small coldrooms have started breaking down and creating vaccine storage problem. The new cold-room is sometimes now being overstocked and it is likely to reduce its efficiency.

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8.1.6 INPUT

- An additional cold room of the same size as the new exisiting one in 1991.
- A freezer room for polio, measles, BCG, Vaccine.
- Two new lorries for vaccine distribution.
- Additional cold stores in Nyeri, Nakuru and Eldoret.
- 12 staff members including the operational officer incharge of vaccines are needed to distribute the vaccine.

Funds needed is the following:

- For vaccine procurement

- airport Clearing charges

- Running costs.

(See the appendix IV for the estimated costs of the above items under logistics procurement list)

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8.2 EQUIPMENT AND SUPPLIES:

8.2.1 STAFF.

The Supplies Unit of K.E.P.I. is composed of 10 members of staff headed by a supplies officer. They are stationed at the KEPI stores, at the national Public Health laboratories.

8.2.2 PROCUREMENT OF EQUIPMENT

All the equipment is procured overseas by the donor agencies. Items of stationery are procured locally by the Government of Kenya.

8.2.3 DISTRIBUTION OF EQUIPMENT:

Distribution of equipment is carried-out by a fleet of 9 vehicles composed of 7 pick-up trucks and two lorries. Distribution is carried-out to all the 42 districts in the Republic of Kenya.

This fleet of vehicles is shared by the cold chain maintenance unit and the vaccines unit.

8.2.4 DISTRIBUTION OF CONSUMABLES:

All consumables such as needles, Syringes, Stationery etc to be distributed and delivered to all the districts after every 6 months. The amount supplied to each facility is in accordance with the KEPI standard list.

8.2.5.INPUTS

* Equipments as per the procurement list.(see appendix IV)
* Construction of a new store.
* Construction of offices.
* 10 members of staff.
* Funding for equipments, cards, stationery, syringes, needles etc. (see appendix IV).

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8.3 GAS SUPPLY:

8.3.1 OBJECTIVE:

Is to ensure all those facilities depending on gas for refrigerators and steilizers are continuously supplied wi throughout the year.

Gas continues to be bought and supplied by KEPI Managemen through a system by which the District Public Health collects the gas cylinders from the appointed dealers wh equitably distributed in the country. This decentra distribution reduces the collection costs. The District P Health Nurse is expected to collect and redistribute the g all her rural health facilites in the district.

8.3.2 ACTIVITIES:

* Purchasing of gas and distribution.
* Monitoring the gas consumption monthly in all districts.
* Procurring 200 gas cylinders and regulators annu for the period 1991 - 1995.
* Replacing the stolen gas cylinders.
* Distribution of gas cylinders to the new facilit opened during phase III.

8.3.3 INPUTS:

* Funds to purchase gas (see appendix V).
* Funds to purchase new gas cylinders (see procurem list appendix IV).
* Funds for gas distribution.

A gas cylinder lasts for a minimum of 30 days in a refrigerat (RCW 42 EG) and six months when being used for stelizatio Therefore each facility will require 12 gas cylinders annual for the refrigerator and 2 for sterilization. In total 14 g cylinders are required at each vaccinating centre annuall Between 1991 - 1995 a total of 3,265 facilities will depending on gas an Ksh.19,091,792.00 will be required for g during this five years' period. For more details see the ann on the facilities depending on gas / recurrent cost on ga supply. (See appendix V).

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8.4 COLD CHAIN.

8.4.1 COLD CHAIN MAINTENANCE AND INSTALLATION.

A tentative recurring preventive manitenance workplan has been laid forward. This workplan indicates that 520 man days are required to cover the whole country in one year. Taking into account that the technicians will need some time in Nairobi for surrendering imprests and for preparing the safaries, it will be necessary to employ three technicians for this.
(See appendix XII).

The solar equipment planned to arrive every year is 50 solar refrigerators and 50 solar steam sterilizers. The installation will take two technicians 10 months.

The opening of 50 new facilities every year will require further assistance from the technicians, at least one technician for one month per year. The manitenance of equipment will require yet another technician permanently in the workshop. Replacement of old refrigerators in the districts will also require some assistance from the maintenance unit, at least one man for two months every year.

The total number of technicians needed will be seven fully employed.

8.4.2 COLD CHAIN EQUIPMENT.

8.4.2.1 REFRIGERATORS:

The programme has been using different types of refrigerators. By 1990 the following refrigerators are in use:

1) RM 212
2) RCW 42 EG
3) RA 1300 and RA 1302
4) SIBIR S 2323
5) TCW 1151
6) BP VR45 and VR50
7) RCW 42 DC and POLAR (for solar) installed by NGO's.
8) Other different types mainly installed by NGO's.

It has been the plan to phase out the RM 212, RA 1300 and RA 1302 as these have proved not reliable enough for the programme.

The RM 212 is a small camping refrigerator that was introduced in the start of the programme when no special EPI refrigerator was available. The refrigerator is with a front opening door. This means that the cold air inside the refrigerator falls out every time the refrigerator is opened and that the refrigerator will have to cool the new air which has now entered the refrigerator. The insulation of this refrigerator is thin compared to the modern refrigerator like the RCW 42. This means that the gas consumption is also considerably higher. Further

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more, the recording from the districts shows that this refrigerator sometimes vary in temperature up to 8 deg centigrades within 24 hours, which might harm the vaccine.

The RA 1300/1302 refrigerator is a domestic refrigerator which was produced in the start of the programme as no other EPI refrigerator was available. This refrigerator is very sensitive to overloading of the freezing compartment and is therefore no longer recommended by WHO.

By 1990 the programme has more than 150 RM 212's in the store. These refrigerators should not be returned to the districts for immunization purpose for the above given reasons, and because some of them have been used for more than 8 years and therefore their normal life time has been reached.

The same applies for the RA 1300/1302's which might be received from the districts.

The government should dispose of these refrigerators.

During the five years from 1991 - 1995, RM 212's will have to be replaced by RCW 42 EG or VR50 solar refrigerators and RA 1300/1302's by SIBIR S 2323. (See appendixVI).

8.4.2.2 SOLAR STEAM STERILIZERS:

By 1990, 23 solar steam sterilizers will have been purchased. These sterilizers will be installed in Kajiado and Turkana. By including this sterilizer a facility will not need any gas or kerosine for the immunization. The solar steam sterilizer is still on trial but looks promising and is very useful and much appreciated by the nurses using it. The plans includes 50 solar steam sterilizers installed every year for the next five years. (See appendixVII).

8.4.2.3 SPARE PARTS:

The refrigerators and the steam sterilizers both gas and solar need spare parts to be replaced. The refrigerator spares most needed are heating elements, thermocouples, thermostats and a few cooling units. These parts should be procured only when minimum stock level is reached. The steam sterilizer should be maintained through a scheduled replacement plan. This should include replacement of gaskets, safety plugs and relief valves once a year.

A computerized stock control system will be installed by 1990.

8.4.3 PHASE III NEW FACILITIES

It is the wish of the government to expand the number of facilities by fifty every year. To make the expansion sustainable, many components are needed.

- EPI equipment must be available and maintained.
- The EPI staff at central level must be available in the required numbers.
- The staff at provincial level must be available and informed of their duties in connection with KEPI.
- The staff at district level must be available.
- The staff at facilities must be available.
- All staff at all levels must be trained.
- Funds for recurrent cost at all levels and at all facilities must be available.
- Transport at all levels must be adequate
- Vaccine, syringes, needles, stationaries and gas must be available.

Considering all these factors and negotiating with all the parties involved, a schedule for equiping 250 facilities in the five year period has been drawn up. (See appendix XI).

The schedule has considered the priority districts as well as the disadvantaged districts. Further more areas with a rapid population growth like Nairobi and Mombasa have been given consideration also.

8.5 TRANSPORT

8.5.1. THE TRANSPORT REQUIREMENT IN KEPI COMPRISES OF THE FOLLOWING:

(a) Transport of equipment, supplies, gas etc.
(b) Distribution of vaccines.
(c) Transport for supervision.
(d) Transport for training activities.
(e) Transport for surveys.
(f) Transport for Social Mobilization activities.

8.5.2. KEPI VEHICLES WILL BE STATIONED AT:

1. KEPI Management Unit, Nairobi.
2. Districts.

8.5.3 CONDITION FOR CHOICE OF VEHICLES:

From the district reports and experiences, the Peugeot 504 pickup have been found very unsuitable in most districts because of poor roads and high maintenance costs. In view of this, all the Peogeot 504 pickups will be replaced with 4 WD Toyota Landcruisers because of the following reasons:-

* They are commonly used in Kenya.
* Low recurrent (sh/km) petrol, maintenance and repair.
* Capable of functioning under adverse road and weather conditions most of the year.
* High load capacity, size and comfortable.

8.5.4 DISTRIBUTION OF VACCINES:

KEPI uses two lorries in distributing vaccines to all the district vaccines and two regional vaccine depots, (Mombasa, Kisumu). From the District Public Health Nurse uses the KEPI vehicle to deliver the vaccines to all rural health facilities and also carries out the supervisory visits.

8.5.5 DISTRIBUTION OF EQUIPMENT / SUPPLIES:

This has two aspects: distribution of new equipment and resupply of consumable items such as syringes, needles, stationery and gas.

8.5.6 SUPERVISION:

Supervison is a crucia function of the KEPI Management Unit. Transport for this acti··ity will continue to be executed by the Management Unit staff. To facilitate this activity, 4 WD Toyota staff cars will be ne ded during the 5 years period - 1991 -1995.

8.5.7 TRANSPORT FOR TRAINING ACTIVITIES:

KEPI training courses will continue to be conducted and be reduced number annually at the same period. Mid-level, Operational courses and Cold Chain continue to be conducted at the six Rural Health Training Centres. This will require a reliable transport. A mini bus 12 seater will be ideal.

8.5.8 SURVEYS:

Immunization coverage survey will be conducted at the identified districts. This will also require reliable transport. Management Unit staff cars and district vehicles will be used for these exercises.

8.5.9 SOCIAL MOBILIZATION ACTIVITIES:

Social Mobilization activities will be more in phase III than phase II. This again will require reliable transport for the execution of the scheduled activities. One (4WD) vehicle will be assigned to the Social Mobilization team.

8.5.10 INPUTS:

* Funds to purchase the vehicles.
* Funds for the vehicles recurrent cost.
* 5 drivers.

See the annex on vehicles procurement, replacement and recurrent costs, APPENDIX VII.

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9. SOCIAL MOBILIZATION:

9.1 EDUCATIONAL MATERIAL:

9.1.1 OUTPUT:

To expose about 40% of the Kenya population to information / knowledge about immunization every year for the five years. To distribute materials in all the district health facilities, chiefs camps, market places and in schools and during District Agricultural Shows.

9.1.2 ACTIVITIES:

1. Print and distribute 35,000 posters every year between 1991 1995 on the six immunizable diseases.

2. Print and distribute 35,000 copies of posters on Measles in every year between 1991 and 1995.

3. Print and distribute 35,000 copies of posters on Neo-natal Tetanus every year between 1991 and 1995.

4. Translate poster above in 10 languages and distribute in 21 low coverage districts - 35,000 copies in every year between 1991 - 1995.

5. Print and distribute 50,000 copies of KEPI flier every year in 1991, 1993, 1995.

6. Print and distribute 150,000 stickers every year in 1991, 1992 and 1993.

7. Organise a Materials Production workshop in 1991 for Health Education Officers.
   (See appendix IX).

9.2 RADIO PRODUCTION AND BROADCAST:

9.2.1 OUTPUT:

To reach 60% of the population especially in the 10 priority districts with knowledge on immunization as well as motivational message. Programmes and commercials to be aired throughout the 5 years.

9.2.2 ACTIVITIES:

1. Producing and broadcasting radio programmes - 13 programmes per year in 10 language, 15 minutes each, weekly for 3 months, once a year.

2. Produce and broadcast 15 slogans, 3 per year to be broadcast as part of the 15 minute programmes in 10 languages.

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Additionally, to be aired twice daily for 3 months every year for five years in Swahili.

3. Broadcast of selected songs and poems by school pupils twice a year for one month during the five years.

4. Organize the broadcast of press conference once a year in the five years.

9.3 TELEVISION PRODUCTION AND BROADCAST:

2% of population i.e. policy makers will be sensitized to project, achievements and needs every year in five years. A further 5% of population will be reached with knowledge on immunization and will tell others.

9.3.2 ACTIVITIES:

1. Broadcast existing commercials in the five years. To be aired three times a week for one month every year.

2. Organize for broadcast of 1 Mambo Leo and 1 Press Conference a year in the five years.

3. Broadcast of animated video (see Activity 4). To be aired 4 times in 1991.

4. Broadcast of acceleration activities in the districts once a year in five years.

9.4 FILM PRODUCTION:

9.4.1 OUTPUT:

Spread knowledge on immunization to the public during District Agricultural Shows, through the mobile cinema, to school pupils to community leaders training meetings, to NGOs and churches churches personnel and Health Workers trainees.

9.4.2 ACTIVITIES:

Produce and distribute a 30 minute film and provide each of the 8 provinces with a copy each, 2 copies to the mobile van, 1 copy to the Health Education Department and 1 copy to the KEPI Management Unit, all in all 12 copies in 1993.

9.5 CHILD TO CHILD PROJECT:

9.5.1 OUPUT:

To have 90% of mothers in 16 districts educated on immunization and 90% of unimmunized children taken for immunization between 1991 and 1992 as follows: - 10 districts in 1991 and 6 districts in 1992.

9.5.2 ACTIVITIES:

1. Briefing meetings for all headteachers in the 16 districts and other Ministry representatives:- one meeting per every division.

2. Production and distribution of project materials to all particpating schools and to all health facilities.

3. Briefing of teachers by the headteachers and training of the pupils by the teachers.

4. Pupils monitoring community, educate mothers and refer children to clinics.

5. Hold ceremonies to give prizes in zones, divisions and districts to winning schools.

9.6 INVOLVEMENT OF GROUP AT NATIONAL, PROVINCIAL AND DISTRICT LEVEL:

9.6.1. OUTPUT:

To have well informed and motivated Associations which will educate communities on immunization:

(a) Involve 100,000 Boys Scouts in 42 districts 100,000 Girl Guides in 42 districts each year on agreed upon activities.

(b) Involve 300 Paeditricians once a year in the 5 years in 10 districts per year in checking immunization status, providing immunization and education.

(c) Produce studies, coverage, newspaper / magazine articles on immunization for the public awareness from training institutions.
To be organized once a year during the five years.

9.6.2 ACTIVITIES:

(a) Run briefing / training workshops for the trainers of Girl Guides and Boy Scouts.

(b) Print and distribute educational / Visual Aids for training.

(c) Education, acceleration activities by the movement.

(d) Training of the Girl Guides and Boys Scouts.

(e) Briefing meetings for the Paeditrician Association.

(f) travel and give lectures to institutions:- Kenya Institute of Administration, University of Nairobi, Kenya Institute of Mass Communication.

9.7 PROVIDING INCENTIVES TO THE DISTRICT PERSONNEL AND COMMUNITIES:

9.7.1. OUTPUT:

(a) Have high turn-out at the immunizing centres of babies for immunization in a total of 21 priority and disadvantaged districts during the five years.

(b) Health personnel and other Ministries' personnel who are highly enthusiastic about immunizing all children in their catchment areas by 1992.

9.7.2 ACTIVITIES:

1. Solicit and acquire contribution of encouragement tokens items from organizations.

2. Distribution of items to the districts.

9.7.3 ORGANIZE CEREMONY IN EACH DISTRICT TO ANNOUNCE WINNERS AND GIVE OUT PRIZES.

9.8 AWARENESS ACTIVITIES:

9.8.1 OUTPUT:

(a) 2 National acceleration days of activities nationwide.
(b) 3 issues of the KEPI Newsletter every year.
(c) Articles on newspaper and magazines twice a year in the five years.

9.8.2 ACTIVITIES:

1. Planning of activities with an inter-sectoralnational group
2. Preparing guidelines for the districts.
3. Produce and distribute materials.
4. Collect and publish articles for Newsletter and distribute.
5. Liase with journalists for articles in the print media.

9.9 DISTRICT ACTIVITIES:

9.9.1 OUTPUT:

42 Plans of Action for each year during the five years from all the districts detailing outputs, activities and inputs.

9.9.2 ACTIVITIES:

Send funds to the districts to implement Social Mobilization.

9.10 SUPERVISION, MONITORING AND EVALUATION:

(See Supervision / Monitoring for additional details).

9.10.1 OUTPUT:

(a) Reports (feedback) from the districts 4 times a year about implementation of Social Mobilization activities.

(b) Effective implementation of the planned activities in the districts.

(c) Data showing the constraints / resaons for low immunization coverages in the priority districts.

9.10.2 ACTIVITIES:

(a) Supervisory visits - 2 to the 10 priority districts every year and 1 visit to ·32 districts (scheduled for the whole Management Unit).

(b) Develop supervisory checklist.
(c) Evaluate I.E.C. in 1991 and 1994.

(d) Hold focus group discussions in 5 of the priority districts in 1991 and 1992.

9.11 STUDY TOURS:

9.11.1 OUTPUT:

To give the two KEPI Social Mobilization officers experience from other countries that they can adopt in Kenya in 1991 and 1993.

9.11.2 ACTIVITIES:

1. Visit Indonesia /Asia in 1992.
2. Visit to Uganda and west Africa.

10. MONITORING:

National level.:

1. The Senior Officers of the KEPI Management Unit will meet fortnightly to review progress and plans for the immediate future.

2. Quarterly Progress Reports will be issued and distributed to MOH,PMOs, donors and other relevant parties. The reports will also contain a detailed 3 months activity plan for the coming quarter.

3. In connection with the issue of quarterly reports the donors will meet quarterly with the KEPI Management Unit under the chairmanship of the director, Division of Family Health to review the progress of the programme.

4. Continuous feed-back to Provinces and Districts.

Provincial level:

1. Provincial team to carry out a supervisory visit to each district twice a year.

2. Participates in immunization coverage survyes as per the schedule.

District level:

1. Routine reporting of immunization performed in all health units by dose and age group direct to KEPI.

2. Immunization coverage surveys at the identified districts (See schedule, appendix X).

3. National immunization coverage survey.

4. Effectively use a developed TT card.

5. Continuous routine reporting of the six EPI disease morbidity via HIS.

6. Sentinel reporting for measles and polio in selected districts (Muranga, Meru, Kakamega, Siaya, South Nyanza and Nyamira).

7. Cold chain and logistics evaluation.

8. Programme reviews.

11. ASSUMPTIONS:

A number of assumptions have been made in order to reach to the present draft Plan of Operation:

11.1. Donor/GOK contribution.

When preparing the budget for the donors' and GOKs contribution it has been assumed that the present division of contribution will remain so that for instance the vaccine so far supplied by DANIDA will also in future be supplied by DANIDA. During the negotiations for the final PLOP 91-95 the distribution of responsibilities among the donors and among the donors versus the GOK may have to be changed.

Likewise the question of the donors phasing out and the GOK subsequently taking over a bigger percentage of the total costs should also be considered taking into account the economic situation in Kenya. This draft PLOP has assumed that the donors contribution will have to continue at the present level.

11.2.BUDGET:

All estimates and thereby all budgets are in K.Shs. and in March, 1990 prices and the rate of exchange used for converting US$ to K.Shs. is 1 US$ = 22 K.shs.
and from Danish Kroner: 1 D.Kr. = K.Shs. 3.40.

11.3. COLD CHAIN:

During 1990 two new zonal depots are to be constructed in Nakuru and Eldoret. The depots will be equipped with a cold storc similar to the ones in Mombasa/Kisumu.

There are also plans to initiate the expansion of the cold store at the KEPI Stores in Nairobi and add a freezer room, all planned for 1990.

These activities will hopefully be reflected in the proposed Cold Chain Study which has been suggested for mid 1990 and it is assumed that the findings of the study will necessitate changes in this Plan of Operation.

11.4. Transport:

A crucial point is transport. Both at national level but also at Provincial and District level. This plan o operation suggests a substantial replacement of vehicles which also represents a major part in the budget.

The proposed National Transport Study is assumed to have been carried out by September, 1990. This study may again have some impact on the planned replacement rate and thereby also change the proposed budget.

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11.5. SOCIAL MOBILIZATION:

The proposed social mobilization activities in this plan of operation are many. The KEPI Management Unit realises that it will probably not be possible to execute all the planned activities partly because of time constraints and partly due to budget constraints. However, it has been decided to keep all activities included in the draft assuming that the project preparations going on in 1990 will clarify where the priorities are.

TOTAL KEPI BUDGET 1991 - 1995, IN MILLION KENYA SHS

	DANIDA	UNICEF	USAID	GOK	ROTARY	TOTAL
TRAINING						
CAPITAL COST	5.48					5.48
RUNNING COST			22.15			22.15
LOGISTICS						
CAPITAL COST		138.35				138.35
RUNNING COST						
VACCINE	86.30		33.80		31.00	151.10
GAS	19.00					19.00
VEHICLES				31.50		31.50
SAFARIES			6.20			6.20
SOCIAL MOBILISATION						
RUNNING COST		44.65				44.65
SUPERVISION & MONITOR						
RUNNING COST			97.40			97.40
MISC. KEPI MU	17.00					17.00
TOTAL COST	127.78	183.00	159.55	31.50	31.00	532.83

TRAINING BUDGET IN KENYA SHS

	COST PER COURSE	NUMBER OF COURSES 1991		1992		1993		1994		1995		TOTAL
MIDLEVEL TRAINING COURSE	200,000	3	600,000	2	400,000	2	400,000	1	200,000	1	200,000	1,800,000
			0		0		0		0		0	0
COLD CHAIN COURSE	50,000	3	150,000	2	100,000	2	100,000	1	50,000	1	50,000	450,000
			0		0		0		0		0	0
OPERATIONAL LEVEL	50,000	25	1,250,000	25	1,250,000	25	1,250,000	25	1,250,000	25	1,250,000	6,250,000
			0		0		0		0		0	0
COLD CHAIN (O LEVEL)	30,000	25	750,000	25	750,000	25	750,000	25	750,000	25	750,000	3,750,000
			0		0		0		0		0	0
SOLAR EQUIPMENT COURSE	40,000	1	40,000	1	40,000	1	40,000	1	40,000	1	40,000	200,000
			0		0		0		0		0	0
ANNUAL PERFORMANCE EVALUATION	30,000	18	540,000	18	540,000	18	540,000	18	540,000	18	540,000	2,700,000
			0		0		0		0		0	0
VACCINE HANDLING, MANAGEMENT	40,000	1	40,000	1	40,000	1	40,000	1	40,000	1	40,000	200,000
			0		0		0		0		0	0
MISSED OPPORTUNITY SURVEY	20,000	30	600,000	30	600,000	30	600,000	30	600,000	30	600,000	3,000,000
			0		0		0		0		0	0
FOLLOW UP, ASSESSING PERFORMANCE	50,000	8	400,000	8	400,000	8	400,000	8	400,000	8	400,000	2,000,000
			0		0		0		0		0	0
CONTINIOUS EDUCATION, KEPI STAFF	360,000	1	360,000	1	360,000	1	360,000	1	360,000	1	360,000	1,800,000
SUBTOTAL			4,730,000		4,480,000		4,480,000		4,230,000		4,230,000	22,150,000
EQUIPMENT												
MANUALS (PRICE PER 1,000)	70,000	20	1,400,000	10	700,000	10	700,000	10	700,000	10	700,000	4,200,000
			0		0		0		0		0	0
FILM PROJECTORS 16MM	18,500	18	333,000	18	333,000	0	0	0	0	0	0	666,000
			0		0		0		0		0	0
OVERHEAD PROJECTORS	5,000	18	90,000	18	90,000	0	0	0	0	0	0	180,000
			0		0		0		0		0	0
SLIDE PROJECTORS	3,000	18	54,000	18	54,000	0	0	0	0	0	0	108,000
			0		0		0		0		0	0
VIDEO MACHINE AND MONITOR	50,000	6	300,000	0	0	0	0	0	0	0	0	300,000
			0		0		0		0		0	0
CALCULATORS	500	50	25,000	0	0	0	0	0	0	0	0	25,000
SUBTOTAL			2,202,000		1,177,000		700,000		700,000		700,000	5,479,000
GRAND TOTAL			6,932,000		5,657,000		5,180,000		4,930,000		4,930,000	27,629,000

APPENDIX III

VACCINE PROCUREMENT FROM 1991 - 1995

		1991	1992	1993	1994	1995	TOTAL DOSES
ORAL POLIO VACCINE	MILL. DOSES	7.50	7.50	7.50	7.50	7.50	37.50
D.P.T. VACCINE	MILL. DOSES	6.00	6.00	6.00	6.00	6.00	30.00
MEASLES VACCINE	MILL. DOSES	2.50	2.60	2.60	2.60	2.60	12.90
TETANUS TOXOID	MILL. DOSES	6.00	6.20	6.20	6.20	6.20	30.80
B.C.G. VACCINE	MILL. DOSES	5.20	5.40	5.40	5.40	5.40	26.80

PROCUREMENT PRICES							TOTAL K SHS
ORAL POLIO VACCINE	MILL. K SHS	6.20	6.20	6.20	6.20	6.20	31.00
D.P.T. VACCINE	MILL. K SHS	5.00	5.00	5.00	5.00	5.00	25.00
MEASLES VACCINE	MILL. K SHS	6.60	6.80	6.80	6.80	6.80	33.80
TETANUS TOXOID	MILL. K SHS	3.50	3.70	3.70	3.70	3.70	18.30
B.C.G. VACCINE	MILL. K SHS	8.50	8.70	8.70	8.70	8.70	43.30
SUBTOTAL		29.8	30.4	30.4	30.4	30.4	151.4
CLEARING SHARGES							
ORAL POLIO VACCINE	K SHS	6,000	6,000	6,000	6,000	6,000	30,000
D.P.T. VACCINE	K SHS	6,000	6,000	6,000	6,000	6,000	30,000
MEASLES VACCINE	K SHS	6,000	6,000	6,000	6,000	6,000	30,000
TETANUS TOXOID	K SHS	6,000	6,000	6,000	6,000	6,000	30,000
B.C.G. VACCINE	K SHS	6,000	6,000	6,000	6,000	6,000	30,000
SUBTOTAL		30,000	30,000	30,000	30,000	30,000	150,000
GRAND TOTAL		29,830,000	30,430,000	30,430,000	30,430,000	30,430,000	151,550,000
GRAND TOTAL US $		1,355,909	1,383,182	1,383,182	1,383,182	1,383,182	6,888,636

COST OF EQUIPMENT TO BE ORDERED FROM 1991 - 1995

QUANTITY	ITEM	COST	TOTAL
248	SOLAR HEATED STERILISERS	4000	992000
200	SOLAR PV REFRIGERATORS HELIOS/BP	5000	1000000
350	RCW 42 EG	1000	350000
35	TCW 1151 ICE LINED FRIDGES	1300	45500
50	SIBIR 2323/2WVI G-E FRIDGES	900	45000
450	VACCINE TRAYS (SET OF 5)	5	2250
250	HOTPLATES	30	7500
250	GAS BURNERS - KOSAN AS PER RP/KEN/47	50	12500
750	GAS CYLINDERS - RP/KEN/47	50	37500
500	GAS REGULATORS	43	21500
1800	TIMER CLOCKS	10	18000
2000	ICEPACKS	1	2000
1000	VACCINE CARRIERS	20	20000
380	STEAM STERILISERS DOUBLE RACK	90	34200
10000	GASKET FOR STEAM STERILIZER	2.5	25000
10000	SAFETY PLUGS FOR STEAM STERILIZER	2	20000
10000	PRESSURE VALVES FOR STEAM STERILIZER	3	30000
250	JAR, DRESSING WITH COVER, 0.945L	6	1500
500	FORCEPTS 290 MM SS (TYPE 1)	6	3000
500	FORCEPTS 150 MM SS (TYPE 2)	1	500
850	CUP, SOLUTION 180 MM SS	1	850
12500	SYRINGE KIT B	50	625000
850	BOWL, SPONGE 600 ML	2	1700
2500	THERMOMETERS	2	5000
7000000	CHILD HEALTH CARDS	0.06	420000
7000000	PLASTIC BAGS FOR CARDS	0.01	70000
4500	STOCK TALLY SHEETS	0.1	450
4500	LEDGER TALLY SHEETS	0.1	450
1000	TEMPERATURE RECORDING SHEETS FOR FREEZERS	0.1	100
10000	TEMPERATURE RECORDING SHEETS FOR REFRIG.	0.1	1000
250	SUPERVISORY CHECK LIST HANDBOOK	1	250
25000	PERMANENT REGISTERS FOR MCH CLINICS	2	50000
15	COLD ROOM MONITORING CHARTS (PACKETS)	50	750
1	NATIONAL IMMUNIZATION SCHEDULES	2000	2000
1000	DUPLICATING PAPER	100	100000
500	PHOTOCOPYING PAPER	50	25000
1000	PRINTER PAPER	50	50000
50	COMPUTER DISKETS	50	2500
250	CASSETTE RIBBONS FOR TYPEWRITER	5	1250
350	CASSETTE ERASER RIBBONS (PACKETS)	5	1750
50	CARBON PAPER (PACKETS)	20	1000
250	PAPER RULED FEINT (REAMS)	10	2500
500	TYPING PAPER (REAMS)	10	5000
1000	KEPI STICKERS LARGE	3	3000
5000	KEPI STICKERS MEDIUM	3	15000
500	TRAY STICKERS	3	1500
100000	KEPI NEWSLETTER	0.4	40000
1000	KEPI COMPLIMENTARY PADS	0.4	400
1000	KEPI GREETING CARDS	0.4	400
5	SPARE PARTS FOR VEHICLES	20000	100000
5	SPARE PARTS FOR SOLAR EQUIPMENT	10000	50000
5	SPAREPARTS FOR COLD CHAIN EQUIPMENT	200000	1000000

33	LAND CRUISER PICK UPS	16000	528000
25	SUZUKI JEEPS	6000	150000
2	LAND CRUISER PASSENGER	18000	36000
100	MOTORBIKES	1000	100000
1	MINIBUS	10000	10000
2	LORRIES 7 TONS	100000	200000
5	LAPTOP COMPUTERS AND PRINTERS	4000	20000
TOTAL		US $	6268800

FACILITIES DEPENDING OF GAS AND THE RUNNING COST 1991 -1995

PROVINCE	1991	1992	1993	1994	1995
CENTRAL	94	96	98	100	102
COAST	86	84	82	80	78
EASTERN	122	118	114	110	106
NORTH EASTERN	21	19	0	0	0
NYANZA	115	123	131	139	147
RIFT VALLEY	221	204	187	170	153
WESTERN	95	100	105	110	115
NAIROBI	0	0	0	0	0
MOMBASA	0	0	0	0	0
TOTAL NO. OF FAC.	754	744	717	709	701
NO. OF REFILLINGS	10,556	10,416	10,038	9,926	9,814
TOTAL COST K SHS	2,111,200	2,744,560	3,567,928	4,638,306	6,029,798
TOTAL COST FOR THE PERIOD 1991 -1995 IN KENYA SHS					19091792.7

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TYPES OF REFRIGERATORS CURRENTLY IN USE IN KENYA

	RCW 42 EG	RM 212	S 2323	TCW 1151	RA 1300	VR 45/50	OTHER
NAIROBI	57	19	0	1	1	0	4
KIAMBU	6	38	5	1	2	0	2
KIRINYAGA	19	0	1	1	3	0	0
MURANGA	2	41	5	1	0	0	0
NYANDARUA	2	20	3	1	2	0	0
NYERI	3	21	5	1	1	0	0
KILIFI	33	0	3	1	2	0	0
KWALE	29	2	0	2	0	0	4
LAMU	8	0	10	9	2	4	2
MOMBASA	23	2	4	1	1	1	2
TAITA TAVETA	20	0	1	1	0	0	0
TANA RIVER	22	5	0	0	2	0	0
EMBU	5	14	0	1	0	0	4
ISIOLO	16	0	4	2	0	0	0
KITUI	7	20	5	1	0	1	0
MACHAKOS	52	0	0	1	3	0	2
MARSABIT	8	1	5	0	0	4	5
MERU	43	0	2	1	2	0	3
GARISSA	19	0	1	0	1	0	0
MANDERA	5	0	1	0	0	3	1
WAJIR	11	0	1	0	1	0	0
KISII	25	0	0	1	1	0	5
KISUMU	34	0	2	2	2	0	1
NYAMIRA	25	0	0	1	1	0	1
SIAYA	26	0	1	1	2	0	1
SOUTH NYANZA	49	0	3	1	1	0	2
KAJIADO	29	1	2	1	0	0	4
KERICHO	42	1	4	1	0	0	1
LAIKIPIA	14	0	0	1	1	0	2
NAKURU	33	6	4	2	0	0	0
NAROK	24	4	2	1	0	0	0
TRANS NZOIA	8	11	1	1	0	0	0
UASIN GISHU	2	21	1	1	0	0	0
BARINGO	36	0	2	2	0	0	2
ELG.MARAKWET	8	6	2	1	0	0	0
NANDI	28	1	3	1	0	0	0
SAMBURU	4	1	1	1	0	11	0
TURKANA	2	1	3	2	0	10	9
WEST POKOT	13	0	2	0	0	0	0
BUNGOMA	36	1	2	1	0	0	0
BUSIA	29	0	2	1	0	0	0
KAKAMEGA	63	2	5	4	0	0	1
TOTAL	920	239	98	53	31	34	58

RM 212 REPLACED BY RCW 42 EG OR VR50 / RA 1300 SIBIR S

	RCW 42 EG	VR 45/50	RA 1300
NAIROBI	19	0	1
KIAMBU	38	0	2
KIRINYAGA	0	0	3
MURANGA	41	0	0
NYANDARUA	20	0	2
NYERI	25	0	1
KILIFI	0	0	2
KWALE	2	0	0
LAMU	0	0	2
MOMBASA	2	0	1
TAITA TAVETA	0	0	0
TANA RIVER	0	5	2
EMBU	15	0	0
ISIOLO	0	0	0
KITUI	4	16	0
MACHAKOS	0	0	3
MARSABIT	0	1	0
MERU	31	0	2
GARISSA	0	0	1
MANDERA	0	0	0
WAJIR	0	0	1
KISII	1	0	1
KISUMU	1	0	2
NYAMIRA	0	0	1
SIAYA	0	0	2
SOUTH NYANZA	0	0	1
KAJIADO	0	1	0
KERICHO	1	0	0
LAIKIPIA	0	0	1
NAKURU	6	0	0
NAROK	4	0	0
TRANS NZOIA	0	11	0
UASIN GISHU	21	0	0
BARINGO	0	0	0
ELG.MARAKWET	0	6	0
NANDI	4	0	0
SAMBURU	0	1	0
TURKANA	0	1	0
WEST POKOT	0	0	0
BUNGOMA	1	0	0
BUSIA	0	0	0
KAKAMEGA	3	0	0
TOTAL	239	42	31

INSTALLATION OF SOLAR EQUIPMENT OVER THE NEXT 5 YEARS 1990-1994

PROVINCE	DISTRICT	SOLAR REFRIG.		SOLAR STEAM ST		REMARKS
COAST	LAMU	7	*	12	91/92	
	TANA RIVER	20	!	20	1993	
EASTERN	ISIOLO	12	*	12	1992	
	KITUI	16	1992	0		
	MARSABIT	9	*	18	1991	
N.EASTERN	GARISSA	13	!	13	1992	
	MANDERA	2	*	5	1991	
	WAJIR	8	*	8	1992	
RIFT VALLEY	BARINGO	34	1991	34	93/94	
	ELG.MARAKWET	12	!	12	1993	
	KAJIADO	25	1993	0		
	LAIKIPIA	12	1993	0		
	SAMBURU	1	*	14	1991	
	TRANS NZOIA	15	1991	0		
	TURKANA	1	*	20	!/91	
	WEST POKOT	19	!	19	92/93	
TOTAL		206		187		
ADDITIONAL FACILITIES		80		23		
GRAND TOTAL		286		210		
* TO BE INSTALLED EARLY 1990		40		0		
! TO BE INSTALLED LATE 1990		60		12		

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PROVINCE	NO.	DISTRICT	VECHILE REG. NO.	MAKE	YEAR OF DELIVERY	REPL. YEAR				PRICE PER VEHICLE	RUNNING COSTS
CENTRAL											
	21	KIAMBU	GK H 638	PEUGEOT 504 P/UP	1984	1990					500,000
	22	KIRINYAGA	GK H 676	PEUGEOT 504 P/UP	1984	1990					500,000
	23	MURANGA	GK H 682	PEUGEOT 504 P/UP	1984	1990					500,000
	24	NYANDARUA	GK Q 613	TOYOTA L.CRUISER P/UP	1989	1995			1	16,000	500,000
	25	NYERI	GK H 677	PEUGEOT 504 P/UP	1984	1992	1			16,000	500,000
COAST											
	31	KILIFI	GK G 673	PEUGEOT 504 P/UP	1984	1990					500,000
	32	KWALE	GK G 672	PEUGEOT 504 P/UP	1984	1991	1			16,000	500,000
	33	LAMU	GK P 429	PEUGEOT 504 P/UP	1989	1990					500,000
	35	TAITA TAVETA	GK Q 615	TOYOTA L.CRUISER P/UP	1990	1995			1	16,000	500,000
	36	TANA RIVER	GK N 871	TOYOTA L.CRUISER P/UP	1988	1993		1		16,000	500,000
EASTERN											
	41	EMBU	GK G 670	PEUGEOT 504 P/UP	1984	1992	1			16,000	500,000
	42	ISIOLO	GK J 606	LANDROVER 110	1985	1990					500,000
	43	KITUI	GK M 473	TOYOTA L.CRUISER P/UP	1988	1993		1		16,000	500,000
	44	MACHAKOS	GK G 668	PEUGEOT 504 P/UP	1984	1992	1			16,000	500,000
	45	MARSABIT	GK J 607	LANDROVER 110	1985	1990					500,000
	46	MERU	GK G 674	PEUGEOT 504 P/UP	1984	1990					500,000
	47					1992	1			16,000	500,000
NORTH EASTERN											
	51	GARISSA	GK J 608	LANDROVER 110	1985	1990					500,000
	52	MANDERA	GK M 470	TOYOTA L.CRUISER P/UP	1988	1993		1		16,000	500,000
	53	WAJIR	GK J 609	LANDROVER 110	1985	1990					500,000
NYANZA											
	61	KISII	GK J 675	PEUGEOT 504 P/UP	1984	1990					500,000
	62	KISUMU	GK G 667	PEUGEOT 504 P/UP	1984	1990					500,000
	63	SIAYA	GK G 666	PEUGEOT 504 P/UP	1984	1990					500,000
	64	SOUTH NYANZA	GK G 671	PEUGEOT 504 P/UP	1984	1990					500,000
	65	NYAMIRA	GK		0	1990					500,000
RIFT VALLEY											
	71	KAJIADO	GK Q 612	TOYOTA L.CRUISER P/UP	1989	1995			1	16,000	500,000
	72	KERICHO	GK H 689	PEUGEOT 504 P/UP	1984	1990					500,000
	73	LAIKIPIA	GK Q 614	TOYOTA L.CRUISER P/UP	1989	1995			1	16,000	500,000
	74	NAKURU	GK H 681	PEUGEOT 504 P/UP	1984	1991	1			16,000	500,000
	75	NAROK	GK Q 611	TOYOTA L.CRUISER P/UP	1989	1995			1	16,000	500,000
	76	TRANS NZOIA	GK H 685	PEUGEOT 504 P/UP	1984	1990					500,000
	77	UASIN GISHU	GK H 526	PEUGEOT 504 P/UP	1984	1990					500,000
	81	BARINGO	GK M 469	TOYOTA L.CRUISER P/UP	1988	1993		1		16,000	500,000
	82	ELGEYO MARAKWET	GK M 472	TOYOTA L.CRUISER P/UP	1988	1993		1		16,000	500,000
	83	NANDI	GK H 690	PEUGEOT 504 P/UP	1984	1990					500,000
	84	SAMBURU	GK M 471	TOYOTA L.CRUISER P/UP	1988	1994			1	16,000	500,000
	85	TURKANA	GK K 999	TOYOTA L.CRUISER P/UP	1988	1994			1	16,000	500,00
	86	WEST POKOT	GK J 716	LANDROVER 110	1985	1990					500,00
WESTERN											
	91	BUNGOMA	GK H 691	PEUGEOT 504 P/UP	1984	1991	1			16,000	500,00

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	92 BUSIA	GK H 692	PEUGEOT 504 P/UP	1984	1991	1				16,000	500,000
	93 KAKAMEGA	GK H 687	PEUGEOT 504 P/UP	1984	1991	1				16,000	500,000
	KISUMU MUN.	GK			1994			1		16,000	500,000
	NAKURU MUN.	GK			1994			1		16,000	500,000
	11 NAIROBI	GK		1988	1994			1		16,000	500,000
	34 MOMBASA	GK H 693		1984	1992		1			16,000	500,000
MANAGEMENT UNIT	STAFF CARS	GK	TOYOTA PASSENGER/4WD	1990							500,000
	STAFF CARS	GK	TOYOTA PASSENGER/4WD	1990							500,000
	STAFF CARS	GK	TOYOTA PASSENGER/4WD		1991	1				16,000	500,000
	STAFF CARS	GK	TOYOTA PASSENGER/4WD		1991	1				16,000	500,000
	STAFF CARS	GK Q 481	FIAT UNO	1988							500,000
	STAFF CARS	GK Q 482	FIAT UNO	1988							500,000
	STAFF CARS	GK	MINIBUS 12 SEAT		1991	1				10,000	500,000
											500,000
MAINTENANCE UNIT		GK H 944	TOYOTA L.CRUISER P/UP	1985	1991	1				16,000	500,000
		KWZ 212	TOYOTA L.CRUISER P/UP	1985	1991	1				16,000	500,000
		KUW 376	TOYOTA L.CRUISER P/UP	1983	1991	1				16,000	500,000
		GK H 699	PEUGEOT/TOYOTA L.C.	1984	1992		1			16,000	500,000
		GK H 684	PEUGEOT/TOYOTA L.C.	1984	1993			1		16,000	500,000
		GK H 675	PEUGEOT/TOYOTA L.C.	1984	1994				1	16,000	500,000
		GK H 679	PEUGEOT/TOYOTA L.C.	1984	1995				1	16,000	500,000
CENTRAL VACCINE STORE		GK	PEUGEOT 504 P/UP		1991	1				12,500	500,000
		GK H 207	ISUZU LORRY	1984	1991	1				100,000	500,000
		GK P 505	IVECO LORRY/ISUZU LORRY	1988	1993			1		120,000	500,000
				TOTAL NO.		13	6	7	6	6		
			CAPITAL COST		TOTAL US DOLLAR					786,500	
			RUNNING COST		TOTAL KENYA SHS						31,500,000

SOCIAL MOBILISATION IN KENYA SES

	COST PER UNIT	UNIT	1991	UNIT	1992	UNIT	1993	UNIT	1994	UNIT	1995	TOTAL
EDUCATIONAL MATERIALS												
POSTERS (PER 1000)	7,000	35	245,000	35	245,000	35	245,000	35	245,000	35	245,000	1,225,000
			0		0		0		0		0	0
KEPI FLIERS (PER 1000)	8,000	45	360,000	45	360,000	45	360,000	0	0	0	0	1,080,000
			0		0		0		0		0	0
STICKERS (1000)	3,000	100	300,000	100	300,000	100	300,000	100	300,000	100	300,000	1,500,000
			0		0		0		0		0	0
MATERIAL PROD. WORKSHOP	150,000	1	150,000	0	0	0	0	0	0	0	0	150,000
			0		0		0		0		0	0
FLIPCHART	10,000	0	0	15	150,000	15	150,000	0	0	0	0	300,000
SUBTOTAL			1,056,000		1,055,000		1,055,000		545,000		545,000	4,255,000
RADIO PRODUCTION & BROADCAST												
PROD. OF 13 PROG. & 10 TRANSLATIONS	15,000	13	195,000	13	195,000	0	0		0	0	0	390,000
			0		0		0		0		0	0
AIRING PROGRAMMES (130 TIMES/YEAR)	5,000	130	650,000	130	650,000	130	650,000	0	0	0	0	1,950,000
			0		0		0		0		0	0
PROD. OF JINGLES (3 TIMES/YEAR)	100,000	0	0	3	300,000	0	0		0		0	300,000
			0		0		0		0		0	0
AIRING JINGLES (180 TIMES/YEAR)	5,000	180	900,000	180	900,000	180	900,000	180	900,000	180	900,000	4,500,000
SUBTOTAL			1,745,000		2,045,000		1,550,000		900,000		900,000	7,140,000
TELEVISION PRODUCTION & BROADCAST												
PRODUCTION OF COMMERCIALS	200,000	0	0	0	0	0	0	0	0	0	0	0
			0		0		0		0		0	0
AIRING COMMERCIAL (12 TIMES/YEAR)	10,000	12	120,000	12	120,000	12	120,000	12	120,000	12	120,000	600,000
SUBTOTAL			120,000		120,000		120,000		120,000		120,000	600,000
FILM PRODUCTION & DISTRIBUTION												
PRODUCTION OF 30 MIN FILM	1,500,000	0	0	0	0	1	1,500,000		0		0	1,500,000
			0		0		0		0		0	0
COPYING (12 COPIES)	50,000	0	0	0	0	12	600,000		0		0	600,000
SUBTOTAL			0		0		2,100,000		0		0	2,100,000
CHILD TO CHILD PROJECT												
IN 16 DISTRICTS	400,000	10	4,000,000		0		0		0		0	4,000,000
GROUP MOBILISATION												
TRAVELS	50,000	1	50,000	1	50,000	1	50,000	1	50,000	1	50,000	250,000
			0		0		0		0		0	0
PER DIEMS	120,000	1	120,000	1	120,000	1	120,000	1	120,000	1	120,000	600,000

			0		0		0		0		0		
			0		0		0		0		0		
WORKSHOPS/BRIEFINGS	150,000	1	150,000	1	150,000		0		0		0		3
SUBTOTAL			320,000		320,000		170,000		170,000		170,000		1,15
*DISTRICT INCENTIVES													
COST OF TOKENS	6,500	1	6,500		0		0		0		0		
			0		0		0		0		0		
TRAVELS	4,000	25	100,000	0	0	0	0	0	0	0	0		1
SUBTOTAL			106,500		0		0		0		0		1
*AWARENESS ACTIVITIES (ONCE A YEAR)	200,000	1	200,000	1	200,000	1	200,000	1	200,000	1	200,000		1,0
			0		0		0		0		0		
*DISTRICT ACTIVITIES	100,000	42	6,300,000	42	4,200,000	42	4,200,000	42	4,200,000	42	4,200,000		23,10
*SUPERVISION, MONITORING & EVLUATION													
SUPERVISORY VISITS (INCL. ELSEWHERE)		0	0	0	0	0	0	0	0	0	0		
			0		0		0		0		0		
EVALUATION SEMINARS (INCL. ELSEWHERE)		0	0		0		0	0	0		0		
			0		0		0		0		0		
IEC EVALUATION	150,000	0	0	1	150,000		0	1	150,000		0		30
			0		0		0		0		0		
FCDS	150,000	1	150,000	1	150,000		0		0		0		30
SUBTOTAL			150,000		300,000		0		150,000		0		60
*VISIT TO UGANDA FOR TWO			250,000		0		0		0		0		25
*VISIT TO FAR EAST FOR TWO			0		0		350,000		0		0		35
GRAND TOTAL			14,246,500		8,240,000		9,745,000		6,285,000		6,135,000		44,65

APPENDIX X

SUPERVISION & MONITORING 1991 - 1995 IN MILLION KENYA SHS

	COST PER UNIT	1991	1992	1993	1994	1995	TOTAL
PROVINCIAL TEAMS SUPERVISION	130,000	1.04	1.04	1.04	1.04	1.04	5.20
DHMT SUPERVISION	360,000	15.12	15.12	15.12	15.12	15.12	75.60
IMMUNIZATION COVERAGE SURVEY	50,000	0.10	0.10	0.10	0.10	0.10	0.50
NATIONAL COVERAGE SURVEY	250,000		0.25			0.25	0.50
PRODUCTION OF TT CARDS (3 MILL.)		3.00	1.50	1.50	1.50	1.50	9.00
NATIONAL NEONATAL SURVEY		1.80				1.80	3.60
COLD CHAIN AND LOGISTICS -							
EVALUATION OF SELECTED DISTRICTS		1.50				1.50	3.00
							0.00
TOTAL		22.56	18.01	17.76	17.76	21.31	97.40

ACTIVITY SCHEDULE	1991	1992	1993	1994	1995
PROVINCIAL TEAMS SUPERVISION (8 PROVINCES)	++++++++++	++++++++++	++++++++++	++++++++++	++++++++++
DHMT SUPERVISION (42 DISTRICTS)	++++++++++	++++++++++	++++++++++	++++++++++	++++++++++
IMMUNIZATION COVERAGE SURVEY IN 10 DISTRICTS	SAMBURU KAKAMEGA	MARSABIT SIAYA	ELG.MARAK TR. NZOIA	NANDI BUSIA	GARISSA BUNGOMA
NATIONAL IMMUNIZATION COVERAGE SURVEY		++++++++++			++++++++++
PRODUCTION OF TT CARDS (3 MILL.)	++++++++++				++++++++++
NATIONAL NEONATAL SURVEY	++++++++++				++++++++++
COLD CHAIN AND LOGISTICS -					
EVALUATION OF SELECTED DISTRICTS	++++++++++				++++++++++
PROGRAMME REVIEW		++++++++++			++++++++++

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08/03/90

ADDITIONAL KEPI FACILITIES DURING PHASE III

PROVINCE	NO.	DISTRICT	FAC.	KEPI	REMARKS	NON KEPI	PHASE III	TOT.KEPI FAC. AFT.PHASE III	BEFORE PHASE III	AFT PHAS
CENTRAL										
	21	KIAMBU	74	50		24	4	54		
	22	KIRINYAGA	40	23		17	3	26		
	23	MURANGA	66	45		21	3	48		
	24	NYANDARUA	29	25		4	3	28		
	25	NYERI	67	26		41	4	30	169	
COAST										
	31	KILIFI	51	37		14	5	42		
	32	KWALE	37	28		9	5	33		
	33	LAMU	17	14		3	2	16		
	35	TAITA TAVETA	38	18		20	4	22		
	36	TANA RIVER	28	25		3	6	31	122	
EASTERN										
	41	EMBU	38	21		17	4	25		
	42	ISIOLO	20	18		2	5	23		
	43	KITUI	52	29		23	4	33		
	44	MACHAKOS	85	54		31	8	62		
	45	MARSABIT	17	19		-2	4	23		
	46	MERU	122	78	ADD.35 EQUIPED	44	5	83	219	
NORTH EASTERN										
	51	GARISSA	20	17		3	4	21		
	52	MANDERA	6	6		0	4	10		
	53	WAJIR	13	9		4	4	13	32	
NYANZA										
	61	KISII	64	32		32	6	38		
	62	KISUMU	58	36		22	7	43		
	63	SIAYA	39	32		7	10	42		
	64	SOUTH NYANZA	81	51		30	15	66		
	65	NYAMIRA		28		?	5	33	179	
RIFT VALLEY										
	71	KAJIADO	37	36		1	5	42		
	72	KERICHO	132	45		87	10	55		
	73	LAIKIPIA	26	16		10	5	21		
	74	NAKURU	64	37		27	10	47		
	75	NAROK	47	31		16	5	36		
	76	TRANS NZOIA	28	20		8	10	30		
	77	UASIN GISHU	41	24		17	4	28		
	81	BARINGO	69	36		33	9	45		
	82	ELGEYO MARAKWET	39	15		24	4	19		
	83	NANDI	52	27		25	5	32		
	84	SAMBURU	20	15		5	2	17		
	85	TURKANA	46	23		23	3	26		
	86	WEST POKOT	32	22		0	3	25	347	
WESTERN										
	91	BUNGOMA	30	37		-7	10	47		
	92	BUSIA	24	29		-5	10	39		
	93	KAKAMEGA	63	59		4	10	69	125	

08/03/90

TOTAL IN RURAL		1812	1193	619	230	1423	1193	1423
	NAIROBI		88	ERR	10	98	88	92
	MOMBASA		22	ERR	10	32	22	26
GRAND TOTAL			1303	ERR	250	1553	1303	1541

*FAC: EXTRACTION FROM PIU FILE GIVING THE TOTAL NUMBERS OF HEALTH FACILITIES IN RURAL DISTRICTS 1988.
*KEPI: NUMBERS OF KEPI FACILITIES EQUIPED BEFORE PHASE III (1990).
*NON KEPI: CALCULATED DIFFERENCE BETWEEN "FAC" AND "KEPI".
*PHASE III: NUMBER OF FACILITIES TO BE EQUIPED 1991 - 1995 WITH EQUIPMENT SUPPLIED BY KEPI.

RECURRING MAINTENANCE PLAN FOR KENYA 1990

DISTRICT NO.	11	21	22	23	24	25	31	32	33	34	35	36	41	42	43	44	45	46	51	52	53	61	62	63	64	65	71	72	73	74	75	76	77	81	82	83	84	85	86	91	92	93	SUM	
JANUARY																																				13		12	10				35	JANUARY
FEBRUARY		17																																14	7								38	FEBRUARY
MARCH			8	15																													10										33	MARCH
APRIL					8	9																					12													15			44	APRIL
MAY														9				14										15				10											48	MAY
JUNE															12	19														12													42	JUNE
JULY														10			14																									24	48	JULY
AUGUST		31																																			8						39	AUGUST
SEPTEMBER																						13			19	11														13			56	SEPTEMBER
OCTOBER											8	12											14	13																			47	OCTOBER
NOVEMBER							14	11																								10											35	NOVEMBER
DECEMBER									9	11									10	8	9								8														55	DECEMBER
																																											520	

DISTRICT NO.	11	21	22	23	24	25	31	32	33	34	35	36	41	42	43	44	45	46	51	52	53	61	62	63	64	65	71	72	73	74	75	76	77	81	82	83	84	85	86	91	92	93
NUMBER OF FAC	92	50	23	45	25	26	37	28	14	26	18	25	21	18	29	54	19	43	17	6	9	32	36	32	51	28	36	45	16	37	31	20	24	36	15	27	15	23	22	37	29	59
MAN DAYS (WORK)	31	17	8	15	8	9	12	9	5	9	6	8	7	6	10	18	6	14	6	2	3	11	12	11	17	9	12	15	5	12	10	7	8	12	5	9	5	8	7	12	10	20

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THE DIFFERENCE BETWEEN CALCULATED DAYS AND ACTUAL DAYS IS TRAVELLING AND THE DIFFICULT CONDITIONS IN SOME DISTRICTS

11 NAIROBI 21 KIAMBU 22 KIRINYAGA 23 MURANGA 24 NYANDARUA 25 NYERI 31 KILIFI 32 KWALE 33 LAMU 34 MOMBASA 35 TAITA TAVETA 36 TANA RIVER 41 EMBU 42 ISIOLO 43 KITUI 44 MACHAKOS 45 MARSABIT

51 GARISSA 52 MANDERA 53 WAJIR 61 KISII 62 KISUMU 63 SIYA 64 SOUTH NYANZA 65 NYAMIRA 71 KAJIADO 72 KERICHO 73 LAIKIPIA 74 NAKURU 75 NAROK 76 TRANS NZOIA 77 UASIN GISHU

81 SAZIKEO 82 ELEEYO MARKWET 83 KANDI 84 SAMBURU 85 TURKANA 86 WEST POKOT 91 BUNGOMA 92 BUSIA 93 KAKAMEGA

THE NUMBERS SHOWN AT THE MONTH FOR EACH DISTRICT ARE THE DAYS SPENT IN THE DISTRICT INCLUDING TRAVELS
THE "NUMBER OF FAC" IS THE FACILITIES IN THE DISTRICT PERFORMING IMMUNIZATIONS ACCORDING TO THE FILE
THE "MAN DAYS (WORK)" ARE THE DAYS REQUIRED TO SERVE ALL THE FACILITIES IN THE DISTRICT EXCLUDING TRAVELLING TO THE DISTRICT

FOR EXAMPLE: DISTRICT NO. 21 KIAMBU WILL BE VISITED IN FEBRUARY AND 17 DAYS WILL BE USED.
DISTRICT NO. 45 MARSABIT WILL BE VISITED IN JUNE AND 14 DAYS ARE REQUIRED. OF THESE 6 DAYS WILL BE WORKING DAYS AND THE REST TRAVELLING.

520 MANDAYS ONE DRIVER AND ONE TECHNICIAN MAKES: 150 x 2 = 520 =	156,000
DIESEL FOR 520 DAYS AT AVERAGE 100 KM PR DAY x 10/5 =	104,000
UNFORSEEN =	50,000
TOTAL	310,000

THE INSTALLATIONS TO BE PERFORMED PER YEAR WILL AMOUNT TO AN

ADDITIONAL	310,000
GRAND TOTAL	620,000

APPENDIX XII

ANNEX 4

ANNEX 4

Draft Minutes

KEPI/Donor Strategic Planning Meeting, Nakuru, 12-14 March 1990

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THE KEPI WORKSHOP 12TH - 14TH

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KEPI OVERVIEW - PLENARY DISCUSSION:

1. Social Mobilization should not be seen as the key strategy; should look into the area of Missed Opportunities.

2. Outcome of the workshop - to be clarified : Responses /issues raised:

- To get suggestions from donors so as to refine document. Discussion should be open.
- Other donors apart from DANIDA to have an input.
- Inputs from people with immunization expertise.
- Kenya has not done well in immunization compared with neighbouring countries. And yet given Kenya's capabilities, she should have done better. This should be a time for soul searching to decide on how to achieve Universal Child Immunization. This will take hard work. How shall we increase coverage.
- Co-ordination /Collaboration:
  KEPI should facilitate the participation of other groups in immunization. A Manager for co-ordination and collaboration has been appointed by the Ministry with a staff of 15. So, hopefully the situation should increase.
- Setting Targets:
  KEPI has to be more specific in target setting e.g. per district, by card, at the right time.
- KEPI facilities in the districts:
  There was concern about how decisions on equiping new KEPI facilities are arrived at by both the Management Unit and the districts. It was agreed that this is an area for further attention in determining a criteria at the National level and providing the districts with guidelines on determining equiping new centres.

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OVERVIEW OF THE DRAFT DOCUMENT

Presentation:

Certain issues were pointed out which sh
group as follows:-

1. The budget has been worked out at the 1990 rate without consideration for inflation etc.

2. The budget has assumed the current sharing of budget between the Government of Kenya and the various donors. How shall we share responsibilities in the 5 years?
   A cautionary note: Tendency of donors to be too optimistic in expecting recipient Government's taking over of responsibilities.

3. Social Mobilization activities cannot all be accomplished with current staff.

4. Issue of coming vehicles needs to be discussed e.g. when will they be utilized?

5. Objectives need to be clarified e.g. district breakdown. However data is unreliable.

6. Need to discuss plans for 1990. What will be done? There is need to do a detailed plan for 1990 with an update budget.

7. Fortnightly meetings for the Management to be held.

8. Management Unit will make a 3 months' detailed workplan.

9. suggestion for donors to meet regularly with the KEFI Management Unit quarterly.

10. Suggested studies by the Review Mission on Transport and Cold Chain to be accepted.

DISCUSSION /COMMENTS:

- A circular was sent three weeks ago to all districts concerning data collection.

- UNICEF will give all possible support to see Data Management effectively going on.

- DANIDA advised to take up the issue of the 2 studies with Director of Medical Services. If the workshop endorses the studies, then DANIDA will take it up again with the Director of Medical Services.

TRAINING - PLENARY DISCUSSION:

1. More co-ordination is needed in training to avoid overlap. How far have you been able to achieve this? Some have been achieved. The Continuing Education have to approve KEPI's training programme.

2. Training the following - Refer to page 13 of KEPI Plan of Operation - 1991 - 1995.

3. The chapter on Training would benefit it the materials needed are sepcified.

4. Have you considered On the Job Training by rotation rather than classroom teaching? e.g. A week's attachment in a good district or a good health facility?

5. How do you know you have quality trainers? All Rural Health Training Centres Tutors are trained trainers, they develop materials, have lots of practice and are also involved in designing programmes, visits to the districts' health

6. A clear statement of training strategy is lacking. Why was KEPI not introduced with pre-service training as part of every health worker's basic training?

   Why are we continuing to have in-service training for large numbers?

7. How does KEPI facilitate NGOs to run KEPI courses themselves? KEPI should facilitate this.

8. More information on equipment needed?
   Do we have the materials for this or do we need to produce training materials?

Response on pre-service:

KEPI is still clearing the backlog of those who were not trained before incorporation.

In NGOs:

They are included. They do also run courses and call upon KEPI to assist in making the programme and teaching. But they have not been very many.

Continuing Education:

KEPI assists them to come up with relevant programmes.

Relevant teaching materials needed but usually funds are not available. This should be iln the plan if it is a priority.

Pre-Service vs. Curriculum Training:

Is this a satisfactory curriculum? When did this begin? Yes it is in 1988. It will take about five years to clear the backlog.

Materials:

HEPI has made some but would like more relevant areas on supervisory.

Manuals:

Is not 60,000 copies too many? No. It is the only manual for every trainee as it is a reference book. There is also a backlog of people who need the new Manual.

Cost of the Manual:

It will probably be mor expensive than what has been estimated. If the cost is high, then the reduction of certain pages e.g. in kerosene fridges should be re-considered.

This issue has been discussed at length and the position stands.

Combining Materials:

Is there any way of combining training manuals since donors are being asked to fund various manuals?
This collaboration should be looked into.

DATA MANAGEMENT:

Presentation:

1. **Forms**

2. **Data Flow:** Institutions to Districts to Central
   - C.E.I.S.
   - Training staff
   - Logistic support eg. supply of form regularly.

3. Planned Activities:
   - Feedback to districts - send printouts every six months.
   - Supervisory visits.
     Reporting from districts to Headquarters through H.I.S.
   - Sentinel Reporting for Measles and Polio.
   - Studies on Cold Chain and Logistics.

   Constraints:
   - Inadequate trained personnel.
   - Channel of reporting not clear.

DISCUSSION:

Addition - KEPI needs the information for timely action. Currently the problem is at the district level where not all facilities report to the District Public Health Nurse. The main focus is to urge the district teams to get the information from the peripheries and also provide the feedback.

Omission of Data Management Component from the Document:

This has been a neglected rea. How will suggestions:

(a) provide stamped envelopes to all health facilities?

(b) Feedback to the districts is very important. At National level, feedback once every six months is not sufficient.

(c) Feedback should be given in the KEPI Newsletter. Tell what KEPI is doing.

(d) More work needs to be done on target population and coverages. Most Health facilities do not know these.

Data Management should not be separated from Social Mobilization.

- This is a very weak area. We welcome suggestions. We need to start with defining the catchment populations.

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- There is data currently not being used e.g. populations for sub-locations.

- Should not think only in terms of percentage but in terms of where the un-immunized are.

- Management Unit should have a planning workshop specifically for Data Management. The Data we have currently is not accurate. 1979 data is not reliable. This area needs personnel. Current personnel are not qualified to interpret the data. Time and money needs to be set aside for this area.

- This area should be given another session to be discussed fully - perhaps outside of the workshop.

- Certain improvements are being initiated in the districts.

- 1989 population census will soon be out.

- Committee should be set up to plan Data Management component.

- Even without a denominator, there is still a lot that can be learned from the numerator e.g. Missed Opportunities, Drop-out rates etc.

- Suggestions wanted by Social Mobilization of using data with community e.g. chalking up achievement at a Baraza etc.

- How do we have health facilities learn their populations and targets?

  - Learn with populations.
  - Vital registrations.
  - Get the community involved.
  - 1989 will help reduce the era.
  - Doing an immunization census and find out where people go to the health facilities.
  - Use Chiefs and other opinion leaders since they know the area.
  - How about the KANU Youth?

- Restate more clearly goals and objectives.

- Coverage - Consider district coverages by year.

- Ultimate goals is to reduce disease and not raise coverage So improve surveillance.

- Do we need a quick baseline data to give us up-to-date information?

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VACCINES:
Procurement, -Storage,-Distribution.

Presentation:

1. **Procurement / storage**
2. Distribution - also serves as a supervisory visit as well as stock taking.

Comments / Checklist during supervision:

1. Temperature Records
2. Vaccine stock storage
3. Cold Chain monitors.
4. Packaging in the refrigerator
5. Alarm system
6. Ice-packs
7. Defrosting
8. Expired vaccines
9. Discarded vaccines
10. Thermometer
11. Gas for outside clinics
12. Measles cases
13. KEPI vehicle
14. Stocks at time of delivery
15. Time for the next delivery
16. Supervision for the outside clinics
17. Amount delivered enough / not enough
18. Temperature in the delivery box
19. Any other special comment.

Discussion:

1. How often do you distribute vaccines?
   There is a set schedule of distribution. However, if vaccines are finished before time, districts collect from Nairobi.

   UNICEF's Role:

   Polio is procured from Rotary money. Bulk procurement in Copenhagen - years of expertise over the years.
   Measles money from USAID. Therefore UNICEF's roles are:

   1. Procuring agent
   2. Funding agent.

2. Is BCG purchased directly from Europe by DANIDA?
   Yes, it has happened since 1988 when KEPI had a bad experience with BCG, another option is Japanese BCG and UNICEF is sometimes willing to procure. • These other options should be pursued by KEPI.

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3. What assumptions were made in preparing projections for the next five years?

- There will be a small increase.

- It is expected (especially with Social Mobilization) that there will be less wastage which currently exists.

4. 6 million doses of DPT vaccine needed. How has this been arrived at?

- On the basis of the consumption in previous years.

- Amount of vaccine given at outpatient is a lot.

- Possibility could be that women are getting 2 doses of T.T. with every pregnancy - this is too much and could be an explanation as to why there is too much consumption.

- A small survey was done in Kirinyaga on T.T. consumption and found out that about 2/3 of T.T. is used at the outpatient.

- Mothers' card is the responsibility of Family Planning. It is at an advanced stage. We need to pilot it in the districts. Also discussed by panel by doctors. By May, the Division will be ready to pilot.

5. How will KEPI ensure that there will always be a buffer stock? Currently, BCG was short. Donors are ready for a quick action. However, Donor funding is capable of ensuring buffer stock. Could donors who supply receive a quarterly report?

- BCG had been distributed throughout the country and central store had no stock.
  Operation sudan also took a lot of vaccine.
  Currently have about 5,000 doses of BCG but of Pasteur type which KEPI is unwilling to use given its history.
  Three months of buffer stock requires extension of the cold room.

  A system of amount of vaccine stock exists - a copy can be circulated to donors.

6. Regardless of all activities that may happen we should not be in a position to have no stock of vaccines.
   - No problem with vaccine in any district. Only the replacement of vaccine that was receive in place of Operation Sudan vaccine was of the wrong type.

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7. Managerial problem within the Management Unit which should be cleared. Vaccine which was ordered for February and it was not discovered until March that it had not arrived as expected.

8. Suggest that we establish a maximum and minimum levels for each antigen and schedules and commit ourselves to maintaining those levels.

9. Distribution Routes:

What is special about Nairobi and Mombasa?
You are not responding to requisitions from the districts but rathera supplying what you believe the districts need.

- Each district gets what they want.
- Districts do not send to Nairobi their requirements.
- There is also consideration of space for vaccine storage in the districts.

- While there are sufficient funds from Donors, facilities are always running short mainly because:-
There is no accountability. Suggest that districts should be made to make their own orders and each district to show some accountability.
- At the district level all vaccine requirements are supplied. At the facility level, the District Public Health Nurse do not have transport.
- One wrong is that there is no copy of CANICA procurement in KEPI file to correct this.
- A proposal has been given to CANICA to expand the cold room in Nairobi. This will allow room for buffer stock. Districts should have documentation to support their requisitions.
- Kisumu / Mombasa Stores: Vaccines are distributed to these stores on quarterly basis. They in turn distribute to the districts within their areas on monthly basis.Facility and districts have requisition formswhich they order vaccines.
- Why are there no vaccines in the facilities in the districts? There are other problems in the districts.Issue is related to the whole of co-ordination. Not very clear how KEPI will solve this.

- Cold Room Facilities Important issue if there is insufficient storage space at the central level. The tendency is that the vaccine tends to be disposed off at the next level while Health Education may raise demand and reduce waste. As Missed Opportunities are reduced, then this might mean use of more vaccine. Also when more immunization happens in the nomadic areas, this might mean more wastage and therefore more vaccine.
- Budget item on spares for fridges looks too high.

GAS SUPPLY/OTHER SUPPLIES

PRESENTATION - GAS SUPPLIES

- Problem of gas is the escalating price of gas by 1995, 6.2 million may be required.
- Gas dependency will be reduced with more increase in solar.
- District buffer stock needs to be raised due to shortage problem. Currently buffer stock is only 1 cylinder.
- Massive theft of cylinders - over 200 cylinders lost so far.
- Cylinders from facilities which will go solar will be supplied as buffer stock etc
- Request DANIDA & UNICEF to continue support on this for the next five years - 19 million needed.

PRESENTATION - OTHER SUPPLIES

- Functions like any other govt stores.
- Most supplies from UNICEF / DANIDA.
- Communications with donors especially UNICEF has improved - e.g needles and syringes - based on consumption, no. of facilities etc.
- Distribution - A schedule - 3 months with a break. Supplies given to last for 6 months

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DISCUSSION

- Is cylinder size optimal? Could we have bigger cylinders or fixed cylinders which can be refilled or have special KEPI cylinders which would be recognized if stolen.
- do all facilities which have electricity have electric refrigerators. Is KEPI up to date?
- Who do we supply gas to? NGOs or only GOVT?.
- Bulk gas can be installed but a very expensive undertaking. Control at the district would also be difficult. Suggestions will be explored.
- NGOs are only supplied with cylinders but refill is up to them.
- Consider the possibility of a gas tank for emergencies in Nairobi
  - Perhaps this should be a ministry planning issue.
  - There should be regional tanks as well.
  - The government could arrange with the gas companies that there be always gas for KEPI. Convene a high level meeting with the gas company people and discuss the issue.
- Quality of equipment - e.g gas burners are very poor. Syringes also poor and not long lasting - i.e the disposable syringes.
  - We have not shown proof to UNICEF yet. UNICEF has complained to Copenhagen but they need a sample and more

information e.g on how many times they have been sterilized etc.
- In some health centers - 80% in S.Nyanza, Disposable needles are being re-sterilized.

- Could we visit the districts as a joint team with KEPI so that the districts can be assisted better.
- Supplies in the process are being replenished.
- DANIDA recommended a standard KEPI list - This is not available. There is no way to dispel district claims/accountability.
  - Problem is with the district because KEPI has a standard list based on population.
  - A standard list was developed in 1987 and supplied to all facilities.
- A problem at the facility level. Often the things are lying in the stores- "Stores Syndrome". Sometimes less supplies are given but this is rare.
- Sometimes the facilities may not know what they are supposed to do e.g what do they do if the syringes spoil? Lets provide all the information.
- Needles/syringes - The shortage leads to unethical methods of sterilization. Some from lack of knowledge, apathy etc.
- Problem with distribution - sometimes facilitates will be short, and will not have informed districts. A mechanism should be devised where facilities are never short of supplies.
- What is policy on providing NGOS? They are supplied but if they have complaints, they should go back to the districts. Many come to Nairobi for supplies. They should be supplied by the districts.
- NGOs are not always being truthful.
- Produce a leaflet on "KEPI policy for NGOs".
- Management Unit in their regular meetings discuss district problems. Request for other people going into districts for supervision should be accompanied by KEPI Management Unit.

- Sometimes people are in the districts for other activities and not purely for immunization KEPI should be flexible on this.

- UNICEF does not carry out supervision to projects where they're operating. It will give necessary feedback to the concerned.

- Syringes/needles: Should we look broadly and have needles/syringes for multifunction in the health facilities which are re-usable?

- Child Health Cards What is expected of the donors as regards Child Health Cards? Donors are prepared to continue funding

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this. Will GOK provide and will KEPI receive a guarantee. What is the stand and what are we going to do about this?

Responses:

- Existing problem with the Govt printer has been sorted out now. Have already received order. There is move to strengthen HIS to procure medical stationery. This will include child health cards. There should be no problems in future.
- UNICEF has 800,000 cards on the way. Suggest that these be used as a buffer stock for emergency.

- Broadening syringe/needle use - Ministry gives money to the districts for the purchase of such items. Right now KEPI would be oversubscribing to this.
- NGOs procurement - Emphasis that they have to get supplies from the districts as part of the DFRD. A circular to be sent explaining the lines of communication that NGOs should follow.
  The DFRD is still an evolving concept and DHMTs need support e.g Through circulars.
  Solution is operationalising the policy. Sometimes NGOs are left out of meetings.
- Should get monthly inventories of district supplies at the national level.
- Role of DPHN - What support does she have ? Overburdened with responsibilities. Should look at her support i.e secretarial services, control of inventories, recurrent expenditure.
- If districts come to KEPI, NBI for supplies, they should be supplied.
- Will come out with a policy guideline for NGOs. Review the existing ones and build on these.

TRANSPORT:

29 Peugeot pick-ups: 8 have been retrieved, no ideal car for district.
Currently: 5 districts without transport. Many vehicles in disrepair and disuse.

National level:
Not enough vehicles for supervision - only 2 UNOs ideal for city.
2 vehicles in disrepair.
8 pickups and 9 Troopers need repair.
Training needs a 12 seater .
Social Mobilization needs a vehicle.
KEPI Management Unit needs 3 to 4 vehicles.

Use at District:
1. Money given for repair and yet cars in disrepair.
2. - District Public Health Nurse not given access to the car
   - Unable to supply vaccines often.

DISCUSSION:
Running costs:
- Not able to say quite how much each district will need as it varies.
- Petrol consumption - also varies .
  The Peugeot consumes a lot. Funds expenditure depends on honesty. Sometimes false reports are given by districts.
  Should we change the strategy of managing the vehicles? e.g. repair it from the National level..

Team-work:
Districts where the DHMT functions as a team have less problems with transport.

Accidents rate is too high. Mechanism where drivers are re-tested for competency.

Studies:
Transport surveys have been done nationally twice. No follow-ups. Suggest A STUDY OF TRANSPORT MANAGEMENT URGENTLY. DANIDA would welcome this study.
DANIDA has to give its response to the Director of Medical Services comments on the DANIDA Review report. Only then can matters progress.
A problem exists of phasing out old vehicles. List of proposed vehicles should be seen as replacements and not additionals.

H.I.S. REVIEW:
This quickly looked at this during its inception but realized it was a mammoth study- (Involves 1,300 vehicles).
A Manual for Murang'a vehicle tracking system has been produced.
- 31 vehicles.

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Suggestion:
Having 1 driver for one car, having at least 10 cars regularly on the road and not just one which is vertically funded.

UNICEF'S INTEREST:
Recent arrangement with Japanese to provide vehicles to KEPI. Will come after six months to see the state of vehicles. If okay, they will assist.

Smaller vehicles:
Providing KEPI with 20 motor cycles.

Self Drive / Owner drive by the officer responsible. Possibility should be explored. This has shown good results elsewhere . UNICEF endorses the Transport study.

Running costs proposed appear very high. KEPI Management Unit to reconsider.

TRANSPORT STUDY:

The Management Unit stand on Transport Study:
Position of the Management Unit is that be this forum cannot be used to approve the study. Although the Unit's sentiments are that the study is necessary and that we need an urgent solution, the necessary procedure has to be followed in DANIDA to take up the issue with the Director of Medical Services.

- What are the hard feelings / objections in the Ministry with the study?

PREVIOUS STUDIES:

- Four studies have been undertaken. Findings have bordered onto policy issues that reach further than the Ministry of Health. Recommendations have touched on major re-organizational measures and heavy capital investments. Ministry feelings may be: Why undertake yet another major study when follow-up has not been done on previous studies?

- Follow-up on previous studies as well as being open-minded about a new survey.

The Public Health Nurse and Transport:

Explore possibility of District Public Health Nurse having a sub AIE to run and maintain the KEPI vehicle.
A policy issue that cannot be dealt with at this forum.

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COLD CHAIN MAINTENANCE / INSTALLATION:

Presentation:

Started 10 years ago with the programme.
Remains the same. Would like to decentralize. Attempted to train technicians for the districts. May not happen in the 5 years.
Currently have 3 technicians - 3 for maintenance in the districts.
Additional 3 for installation and 1 for regular repairs that come to Nairobi.

DISCUSSION:

* Some districts have maintenance units which may provide the services with additional skills. These should be taken into account. Can be utilized.
* Spare parts are available in Nairobi for districts who want to do the repairs themselves.
* Establish regional workshops or contract commercial firms to install and maintain.

* Solar Refrigeration Maintenance:
  Less than others. No problems with solar equipments.

* Utilization of staff:
  Not effective. Suggest a private firm to be contracted for installation beginning with the incoming consignment of fridges. KEPI staff will then concentrate on monitoring.
* In the next five years, it is expected that each district will have a maintenance technician since they are now being trained int he Medical schools.

* Address issue of Preventive Maintenance:
  e.g. engineer ensuring suitability of curricular of the schools.
* Certain constraints have been identified recommendations suggested by the DANIDA Review which are important and which DANIDA will take up with.

Central Store Vaccine Storage: What is the position? DANIDA will fund during 1990; including offices for the concerned officers.

* Request from Director of Medical Services that KEPI Technicians take care of AIDS refrigerators. This would need a central place.
  It will not be additional strain for KEPI.

SOCIAL MOBILIZATION

PRESENTATION

- Previously more attention was given to other areas within the program but the Management Unit (MU) has now recognized the usefulness of Social Mobilization(SM).
- SM acceleration activities for KEPI and PHC were started in 1984. A group was formed to focus on these activities. The membership of the group was UNICEF, NGOs, KEPI. The group compiled a book to help mobilize awareness on activities within KEPI and PHC.
- The KEPI policy is not to have mass campaigns but to have localized campaigns - Priority districts. Raise coverages by districts.
- Most of the activities are support oriented. Support from the national level and synthesize with the district activities.
- OCT-NOV: Met with DHMT,HEO,PHN,PMOH and tutors to emphasize SM activities. Each district came up with plans for SM and KEPI has helped facilitate the funds for implementing the plans.
- Reviewed the syllabus with tutors - revised this so as to emphasize SM when being taught in various institutions.
- Trying to link SM with targets and data management as whole.
  - What are the targets? Populations?
  - How can we reach the targets?
- Planned activities
  Activities may be too many given limitation of staff and funds. Hence we will priorities these activities after the 1990 experience
- Radio production
  - Short gingles/commercials
  - Broadcast on KEPI in the various languages in the respective areas.
- Film production
  - A high demand for KEPI audio/visuals.
  - Need funding for this.
- Child to child project
  - 10 priority districts
  - 10 other districts and UNICEF is already in 1 district - Hence a total of 21 districts where we plan to introduce this project.
  - UNICEF is helping a lot fundwise and materials development.
- 9.6
  - May not require a lot of funding but time and energy will be the main inputs.
  - Girl guides and Boy Scouts have shown interest.
- District activities
  We expect plans of actions from districts every year.

Nevertheless, funds need to be increased as they are currently not sufficient.

* <u>Piecemeal mobilization</u>
  - There's need to help districts plan on the whole strata of activities i.e FP, KEPI, CDD, Nutrition
  - There is need to synthesize or have collaborative approach in particular within DFH. This is slowly taking place. DFH intends to meet wholesomely before end of year to look at activities as a division and not as a program.
* Information to the people is important - various channels of communications like churches, Post office, community and NCCK.
* Specific strategies on printing of leaflets as from past experience materials are printed and left lying in offices. UNICEF is ready to go along a good plan.
* SM personnel now exist which was not the case previously. Hence there's a renewed methodology and commitment to improve communication/distribution.
* The suggestions from UNICEF are most welcome and we will look for appropriate groups to use for various media. The UNICEF offer is most welcome.
* Piloting in one district may be worthwhile as this will be easier to monitor.
* There is room for more information to get to the masses.
* Plan these activities through large network groups e.g MYW, FP NCCK.

- Training - E.g chiefs, opinion people, women groups. They will inturn train the people.
- School programs - Have a wide circulation hence a great deal of potential - need to develop this area and also other folk media activities.
- Dating under 5: Using children to monitor immunization and refer to clinics.
- Learning from TAnzania we should explore the possibility of using KANU youth wingers.

DISCUSSION

- What is the difference between the CHild to Child project and the District School program?
  There is more national input on the child to child project whereas the school programs are focused on the districts.
- There is need to use schools more extensively e.g KNUT Also the Teacher Training Colleges and Community Health Workers.
- Need a simple leaflet which would be circulated widely.
- One of the aims in PHASE II is to strengthen inter-sectoral collaboration, hence, we are trying to involve certain districts and organizations on our activities esp. Child to child. Need to learn of other countries experiences.
- SM is important but an expensive - UNICEF is ready to help. Need a mechanism on evaluating this area. One of which is feedback in-terms of information on communication to make sure we are getting value for our money.
- Again, we don't necessarily need denominators to make sense of the current information available.
- Use of religious sects/leaders
  - There is a great deal of potential and a good suggestion, there is need for exploration and it is actually in the pipeline.
  - It has happened in Siaya and is quite effective.
  - The approach should be very systematic as there are different sects in different areas. Thus various strategies need to be employed.
  - Use CHAK, CS and Muslim council as these encompass a large no of religious sects and in some cases like CHAK and CS deliver health services.
  - Most Kenyans are religious and this strategy would be fairly successful. We may have overlooked this area and let us take advantage. We can make an impact!
  - During the cholera outbreak churches were successfully used. Great caution should be exercised as some sects do not believe in medicine as a whole.
- How do we ensure funds are spent well?
  Districts have sent reports but not all of them. This will be discussed in the supervision and evaluation section.

SUPERVISION & MONITORING

PRESENTATION

A managerial tool for ensuring results.

- One omission has been that of the provincial team to assist in supervision.
- The national level is "too thin" to supervise districts effectively.
- PHMT needs orientation in MEPI so as to take over the roles expected
- Districts can supervise themselves. Poor districts learn from good ones. This creates motivation--peer supervision.
- Where will MEPI place resources in PHASE III

Mechanisms strategies for effectiveness

- Support to districts from national level
- Look into the transport problem
- Two key people in the districts are the DHEO and DPHN. Their roles need to be spelled out
- DHEO must be involved in the money sent out to the districts.
- Recognize, motivate the PHMT and prepare them adequately to take over supervision.
- Supervision at the divisional level PHOs are multi-level at the level.

Monitoring tools

- Checklist
- Cold chain form
- Gas returns forms
- Summary form
- Disease reporting form
- DPHN checklist
- Vaccine district checklist
- Coverage Surveys
- Sentinel reporting centers
- MCH register

Indicators

- The need to know the catchment areas - Have them well defined.
- Will start teaching the performance graph at all levels.
- Need to divide the monitoring tools into routine and periodic. Need to establish flow of information. Provide feedback with priority to the districts. HIS in the districts is being strengthened. A budget line has been created to facilitate data collection the district.
- Should be flexible with the use of checklists. Have to provide guidelines to the province - what to look for during their supervision.

DISCUSSION

- Budget for DHMT visits looks big. Why?
  It was worked out for 5 persons, per diem and fuel NB: Fuel seems to be budgeted twice.
- Money we usually have could do a lot more if properly utilized.

- Fear of the cold chain engineer is that he has no counterpart to assist and also take over from him. This situation should improve with the graduates from mombasa.

Cold chain replacement

- Engineer would prefer not a technician as a replacement since his work is not technical but rather managerial.
- This should be discussed at the DFH level but person must have some knowledge on cold chain.
- DANIDA engineer should be a counterpart to a Kenyan position established with the government.
- The issue has been discussed with medical engineer.

Proposed surveys

- 21 surveys have already been carried out. Some districts have had no surveys. Surveys in priority districts will access the EM activities. National coverage in 1992. Similar to the one of 1987.

Should national survey be done before 1991.

- For stock taking of current status for UCI in relation to UCI goals. If this is acceptable and useful, donors can start mobilizing funds.
- Yes we do need some baseline data for starting PHASE III.
- If survey is done now, there is no impact from EM. Suggest a survey be done in early 1991 or late 1990.
- Survey is suggested for giving information to assist social mobilization.
- There have been Em Activities by other groups other than MOH KL.
- In that coverage surveys

  Changes have been carried out by WHO since 1987 and this should enable us to get better results.
- Is it worth re-analyzing 1987 data using COBAS? A new COBAS 2.0 will soon be available.
- NEPI is interested in using COBAS 2.0 in re-analyzing existing data. Also interested in survey end of 90 or early 1991. Dr Bang will consult with REACH,UNICEF,USAID and give feedback
- Neonatal Survey A baseline survey countrywide.

  - REACH does not believe Kenya needs a neo-natal survey. Malifi was believed to have a high incidence which was not the case. Even before the survey was started, it was clear from hospital records, that it was not a problem.

  - National survey not necessary -- better use money to immunize.
- Convene a small workshop to discuss strategies and report.
- Do a district from district hospitals survey.
- Introduce the 3 dose schedule
- Director foresees need for a survey in the future
- District to district hospital survey can be undertaken and it will serve as a pointer to districts which will require a survey later.

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ANNEX 5

ANNEX 5

USAID RESPONSE TO KEPI DRAFT PLAN OF OPERATION,
1991 - 95

I. Process of Planning Exercise and Workshop

- congratulations: very professional and rigorous
- open, frank problem - solving approach.

II. USAID support for KEPI policies

- focus on strengthening district capacity
- prioritization of districts
- sustainable service delivery
- joint stress on social mobilization and missed opportunities for immunization
- 1990-1992 : AID funds are available.

III. USAID concerns/comments

- Kenyanization of KEPI needed in terms of greater MOH financial contribution.

  - MOH needs to be more involved in internal political advocacy to lobby GOK for "counterpart" (PL480) funds.

- KEPI needs to issue guidelines for a partnership with NGO's to raise immunization coverage.

  - specify respective roles and responsibilities

  - Include NGO's in periodic co-ordination meetings with DFH.

- Importance of regular joint KEPI/donor meetings under chairmanship of Dr. Oyoo, as proposed in the Plan.

- Given limited staff, plan is over-ambitious.

  - need to prioritize and delegate even more to districts and province.

- a section on data management, a recognized weakness of KEPI, is presently omitted from the plan.

- cold chain management and transport studies, as previously recommended in the 1989 DANIDA Review (in which USAID participated), are encouraged.

- Social mobilization should be expanded to include direct mailings targeted at churches, schools and other community networks.

IV. Follow-up steps after the Workshop to Finalize Plan of Operations:

- prioritize activities
- include section on data management
- do timeline
- shift "counterpart" funds from USAID to GOK column
- need for further discussions between USAID and KEPI on possible USAID involvement until 1992.

V. Technical areas, themes and activities of interest for USAID to complement strengths of other donors*

- seeking strategies to increase measles coverage and TT protection.
- assisting development of medical school curriculum on EPI.
- neonatal tetanus elimination workshops to discuss strategies and policy options
- supporting studies and district workshops on missed opportunities for immunization.
- improving system of vaccine supply and logistics, including establishment of minimum, maximum, and re-order levels.
- improving data management, including CEIS, SSS, computer training, and system of routine reporting and interpretation
- strengthening social mobilization by supporting a KEPI staff position, stressing child-to child school health programs and participating in I.E.C. evaluation in 1991.
- strengthening monitoring including inputting 1987 coverage survey data into COSAS, supporting a national coverage survey in 1991, and participating in a KEPI Review in 1992.
- conducting cost - benefit study of vaccination against measles and possibly other diseases to strengthen DFH in lobbying for scarce GOK funds.

* additional areas were subsequently identified in discussions with the KEPI manager

ANNEX 6

ANNEX 6

Proposed Scope of Work for Medical Curriculum Specialist

The Scope of Work is to work with the Department of Pediatrics at the University of Nairobi in accordance with the memoranda of understanding between DOP and KEPI, and specifically collaborate in:

- Providing technical comments and finalizing edits on immunization teaching manual and immunization lectures.

- Determining number of manuals required for printing, preparing distribution lists, and identifying channels and costs of distribution.

- Identifying opportunities for wider dissemination of individual chapters (or entire manual) and lectures for secondary audiences, including health training instructions and journals.

- identifying materials from the manual or other sources useful to enhance lectures.

- preparing evaluation tools and methods, including feedback mechanisms, to measure the usefulness of the general immunization lectures and of the intensive Child Survival (CS) Scout lectures and field exercises.

- launching the CS Scouts' field exercises and post-training discussions of relevant findings with DOP and KEPI involvement.

- identifying sample rural and urban field training activities for future CS Scouts and preparing a funding proposal for the donor community.

- organizing a policy committee meeting with representatives from DOP and KEPI to review process and progress of medical curriculum development and assess future needs.

- identifying along with the REACH Communications Specialist for KEPI the networking opportunities for social mobilization among pediatricians and other health care providers and formulating a plan.

- de-brief Missions.

Proposed timing of SOW:

3 weeks in August 1990.

Funding:

From USAID/Nairobi buy-in

ANNEX 7

ANNEX 7

Proposed Scope of Work for Specialist in Computerized EPI Information System (CEIS):

In collaboration with KEPI, consultant will:

- determine format of CEIS output and feedback (including periodicity, type and content, measures of reporting completeness and timeliness, automatic generation of reminders to non-reporting districts).
- motivate and provide in-service refresher training (DOS, Dbase, Lotus, word processing) to KEPI staff in computer use, data entry and back-up, report and graph generation, routine analysis and interpretation.
- review and update user's manual and determine need for other technical documentation or training materials.
- make further modifications needed to meet KEPI data requirements and customize CEIS according to needs identified in Steinglass draft report from March 1990 TDY visit
- identify operational barriers to, and solutions for, effective CEIS utilization
- train KEPI staff on use of coverage survey analysis software (COSAS)
- identify local consultant or firm available to KEPI for ongoing system maintenance, trouble shooting and minor customization
- provide source codes to authorized users
- assess needs at HIS for use of CEIS
- de-brief Mission

Proposed timing:
July 9-28, 1990

Funding:
from USAID/Nairobi buy-in

ANNEX 8

ANNEX 8

Proposed Scope of Work for Communications Specialist

The REACH Communications Advisor stationed in Haiti, Mr. Luca Spinelli, will travel to Kenya to undertake the following activities:

- Provide technical support to KEPI and to the REACH Social Communications Specialist in Nairobi.
- Exchange mutual experiences in field of social communication, social marketing and mobilization to add to progress already being achieved in Kenya.
- Assist in fine tuning short-term and long-term KEPI workplan on social marketing.
- Assist in preparation of a document on lessons learned thus far in Kenya and advise KEPI and USAID on future areas of opportunity in field of social marketing and communication.
- De-brief Mission.

Proposed timing:

late July - early August 1990 for 2 weeks

Funding:

from USAID/Nairobi buy-in

ANNEX 9

ANNEX 9

Proposed Scope of Work for REACH Communications Specialist

- Provide technical assistance in child to child and social mobilization activities to MOH, USAID and REACH in Bangladesh and Haiti.
- To participate in the REACH II/External Advisory Group (EAG) Meeting in Washington.
- Brief REACH/Washington on Kenya activities.
- Prepare reports of findings to USAID Missions in Haiti and Bangladesh.
- Prepare report based on TDY visits applying lessons learned in Haiti and Bangladesh to social mobilization and communcations program in Kenya.
- De-brief USAID missions.

Proposed timing:

May 22 - June 17, 1990

Funding:

From USAID/Nairobi buy-in

ANNEX 10

ANNEX 10

Proposed USAID involvement in KEPI October 1990 - September 1992

1st Priority

- Support of Grace for Social Mobilisation (TA)
- National Coverage Survey (TA) + TT serology
- Medical school curriculum (printing)
- KEPI Review (TA)
- CB analysis of measles, pertussis, NNT Control, Polio (TA)
- Part-time secretary and office operation and rent
- CEIS (TA)
- Review of existing demographic survey data to identify priority NNT districts.
- Review of existing DHS data to identify priority districts for NNT control.

2nd Priority

- Workshop for KEPI M.U. + Sr. policy makers, epidemiologists on NNT, measles, polio and follow up regional/district workshops (TA) (local costs)
- KAP of health workers and cultural perceptions of community (TA)
- Ezject (operational costs and TA)
- Observation tours (support)
- I.E.C. evaluation (TA)
- Social mobilization of pediatricians
- Social Mobilization for TT
- Sentinel surveillance system
- Computerize stock control and vaccine management training.

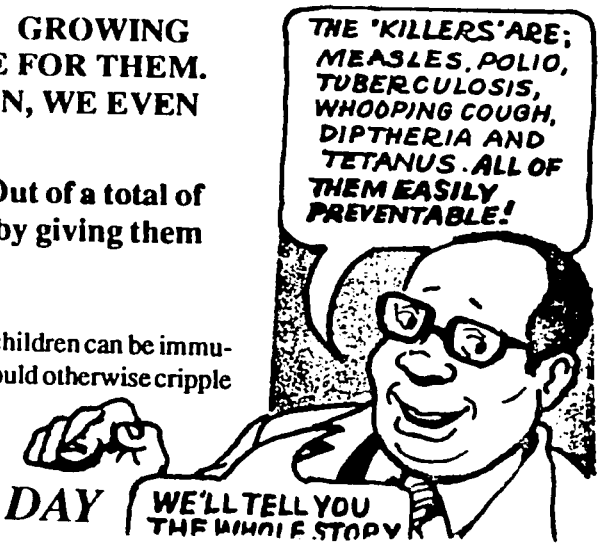
ANNEX 11

IT TAKES A CHILD'S DEATH SOMETIMES...

...TO MAKE US VALUE ALL THOSE LITTLE ONES AROUND US, GROWING HEALTHILY IN THE PROTECTIVE ENVIRONMENTS WE MAKE FOR THEM. KENYANS ARE WELL KNOWN FOR THEIR LOVE OF CHILDREN, WE EVEN PRIDE OURSELVES ON IT.

Yet, everyday, 250 Kenyan children are needlessly punished by death! Out of a total of 140,000 'under fives' who die each year-100,000 could have been saved by giving them simple protection available at any clinic showing the KEPI sign!

his is the sign of the Kenya Expanded Programme on Immunization, run / the Ministry of Health, in all districts of Kenya. Through the KEPI ·ogramme, the government provides immunization services, free of charge, at over 1,250 centres throughout the republic. Young children can be immunized, and protected, against six fearful diseases that could otherwise cripple or even kill them.



SO WHY DO 250 KENYAN CHILDREN UNDER FIVE DIE EVERY DAY

ACHIENG'S STORY...

(BASED ON TRUE EXPERIENCE.)

I WAS VERY YOUNG WHEN I GOT MARRIED – BARELY OUT OF SCHOOL... I DIDN'T KNOW MUCH ABOUT BABIES... AND I DIDN'T GO TO THE CLINIC WHEN I FIRST BECAME PREGNANT... IT ALL SEEMED NORMAL.

I WAS WELL LOOKED AFTER AT MY NEW HOME, BUT WHEN MY BABY WAS BORN... SHE WORRIED US... SHE DIDN'T SEEM TO GROW STRONG AT ALL NO MATTER HOW... I TRIED!

BEFORE SHE WAS ONE YEAR OLD, MY BABY BECAME VERY FEVERISH AND SICK... AND SHE DIED. I THOUGHT I HAD LOST, WELL... EVERYTHING! I WAS SO UNHAPPY...

LATER, AS I WORKED IN MY GARDEN...

THE OTHER MOTHERS ARE RIGHT! I'LL TAKE MY NEXT BABY TO THE CLINIC!

AS SOON AS I KNEW I WAS PREGNANT AGAIN, I ATTENDED THE CLINIC – WHERE I LEARNED MANY THINGS ABOUT CHILD CARE... INCLUDING NUTRITION AND THE IMPORTANCE OF IMMUNIZATION.

MEASLES
UKAMBI
RUNNY NOSE
RASH, FEVER
COUGH

WHEN MY SON WAS BORN, I TOOK HIM TO THE CLINIC REGULARLY EVERY MONTH TO GET HIM WEIGHED, AND TO GET HIS IMMUNIZATIONS. HE IS PROTECTED NOW BY 'FULL IMMUNIZATION'!

...AND ONE YEAR OLD TODAY!

IS THAT IT?! I THOUGHT YOU SAID THIS WAS GOING TO BE A TRUE STORY?

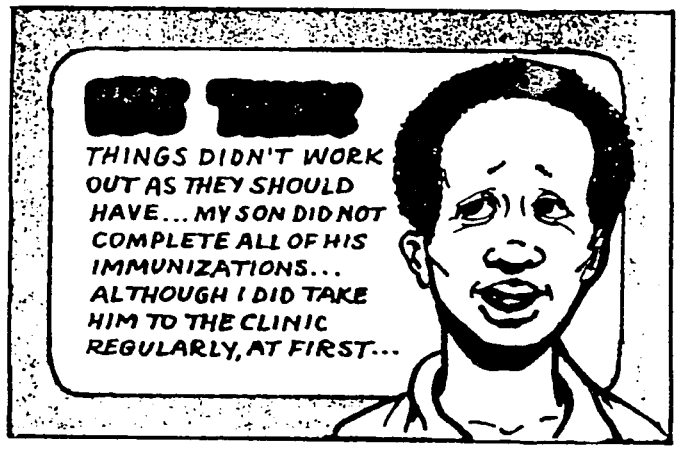
IT WASN'T LIKE THAT!

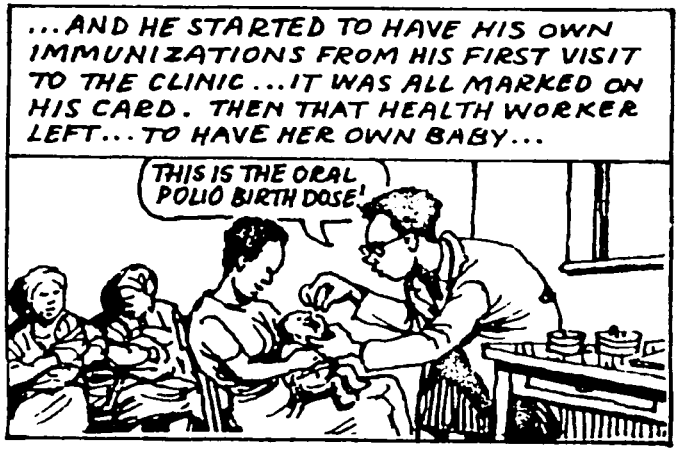
ER... WELL, WE'RE... TRYING TO MAKE IT AS TRUE AS POSSIBLE... IMMUNIZATION IS IMPORTANT!

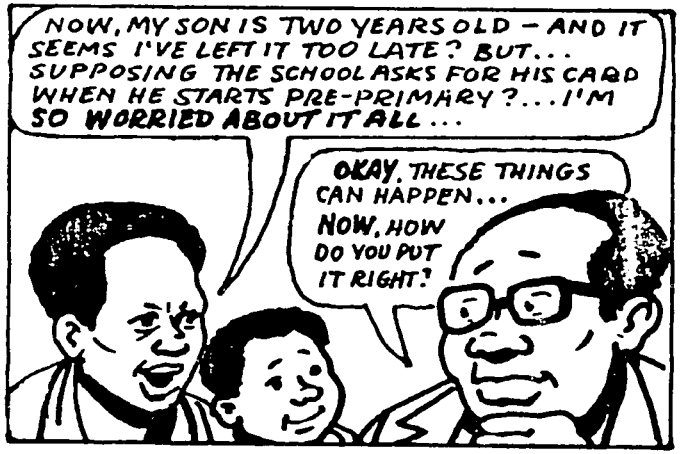
WHO IS THIS OLD WOMAN? SHE'S NOT IN THE SCRIPT?!

KEDI SCRIPT DIRECTOR

IT'S OKAY... SHE'S OUR NEIGHBOUR... SHE KNOWS WHAT REALLY HAPPENED! ...LOOK, I'LL TELL YOU THE REAL STORY...







IT IS NOT TOO LATE! EVEN IF YOU'VE TAKEN A RISK - LIKE ACHIENG...

But the facts are these:

a) Right now, every child can get full immunization protection, at any KEPI clinic. But it is best and safest to immunize the child in the first year of its life.

b) The responsibility to get a child fully immunized belongs to the parents of the child - no matter

LET US ALL BE CLEAR ABOUT WHAT 'KEPI' IS — BECAUSE IT IS IMPORTANT TO ALL OF US!

THE KENYA EXPANDED PROGRAMME ON IMMUNIZATION, (KEPI), of the Ministry of Health, sets out to make 'immunization' a household word, thereby increasing popular demand for immunization services, which the government provides, free of charge, in 1250 clinics in Kenya.

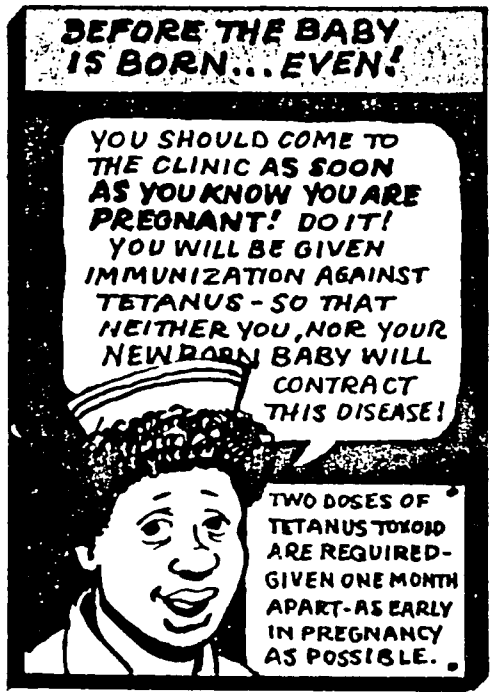
KENYA EXPANDED PROGRAMME ON IMMUNIZATION
KEPI
MINISTRY OF HEALTH

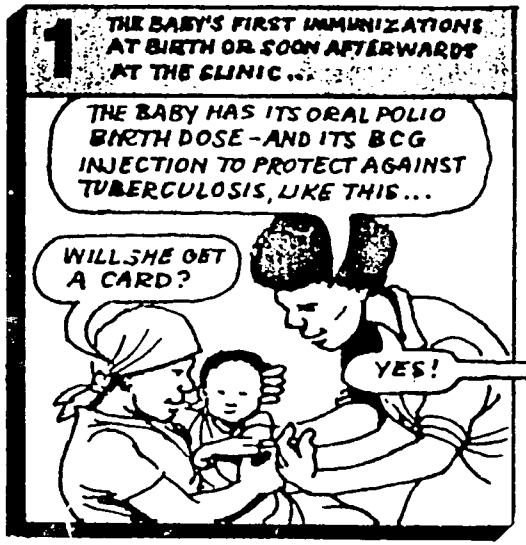
IN ALL THE CLINICS:

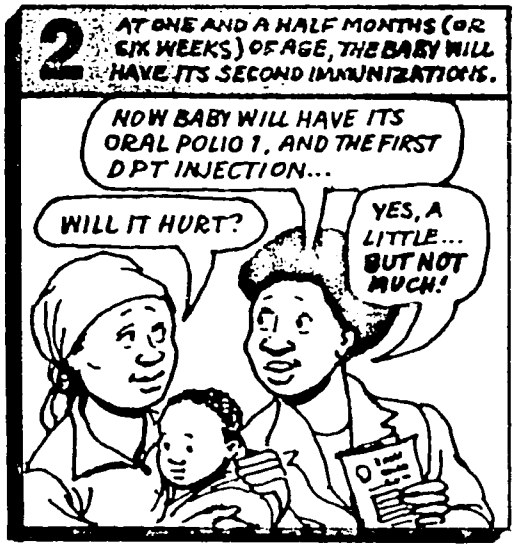
- THE HEALTH WORKERS ARE WELL-TRAINED.
- THERE ARE REGULAR SUPPLIES OF ALL VACCINES.
- VACCINES ARE STORED IN REFRIGERATED UNITS.

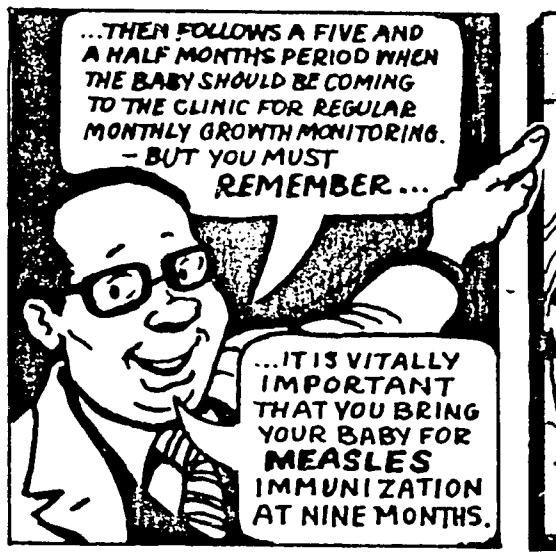
THE IMMUNIZATION SERVICES ARE THERE-NATIONWIDE!

When you bring your baby for IMMUNIZATIONS - this is the schedule you will find in every clinic!









IT IS EVERY CHILD'S RIGHT TO BE FULLY IMMUNIZED AGAINST THESE SIX FEARFUL DISEASES. WITHOUT IMMUNIZATION, OUT OF EVERY ONE HUNDRED CHILDREN, AN AVERAGE OF THREE WILL DIE OF MEASLES. ANOTHER TWO WILL DIE OF WHOOPING COUGH. ONE MORE WILL DIE OF TETANUS. AND OUT OF EVERY TWO HUNDRED, ONE MORE WILL BE DISABLED BY POLIO!

Polio is a virus infection that begins like a cold with fever, vomiting and sore muscles. Sometimes a part of the body is paralysed, generally one or both legs, causing disability. It can easily be prevented by polio vaccine - just a few drops on the child's tongue!

Tuberculosis attacks the child's lungs, causing a terrible cough that weakens the child, and lowers resistance to other diseases. It can be prevented by a vaccine known as BCG, which is given at birth.

Tetanus attacks through wounds and cuts. It causes muscle stiffness, making breathing difficult, or even 'lockjaw' - it's other name. It commonly causes death, and so it is important for pregnant mothers to have Tetanus Toxoid vaccinations, and the baby to have DPT.

Measles is a leading cause of illness and death in young children in Kenya. It also may lead to deafness, blindness and contribute to malnutrition. Measles vaccine should be given to all children when they reach nine months of age - but children who are older than nine months and have not been immunized still need to be immunized. Although it is unusual for children to get measles twice, even children who have suffered from the measles disease should be immunized.

Whooping cough, also known as Pertusis, starts like a cold with fever. It causes a terrible cough and vomiting which can last for weeks, weakening the child dangerously. It can kill very young children, unless it is prevented by the DPT vaccine in the early months.

Diptheria is spread by coughing. It causes difficulty in breathing and swallowing, often making the throat sore and swollen. It can be very severe when it occurs, yet this dangerous disease can be easily prevented by the DPT vaccine.

IMMUNITY

NATURAL IMMUNITY

Immunity, in the medical sense, is natural resistance to any infection. Natural immunity is due to special body cells and to antibodies circulating in the blood.

- Breastfeeding gives a kind of natural immunization against several diseases. Some of the mother's resistance to disease will pass to the child in her breastmilk, for a short while.

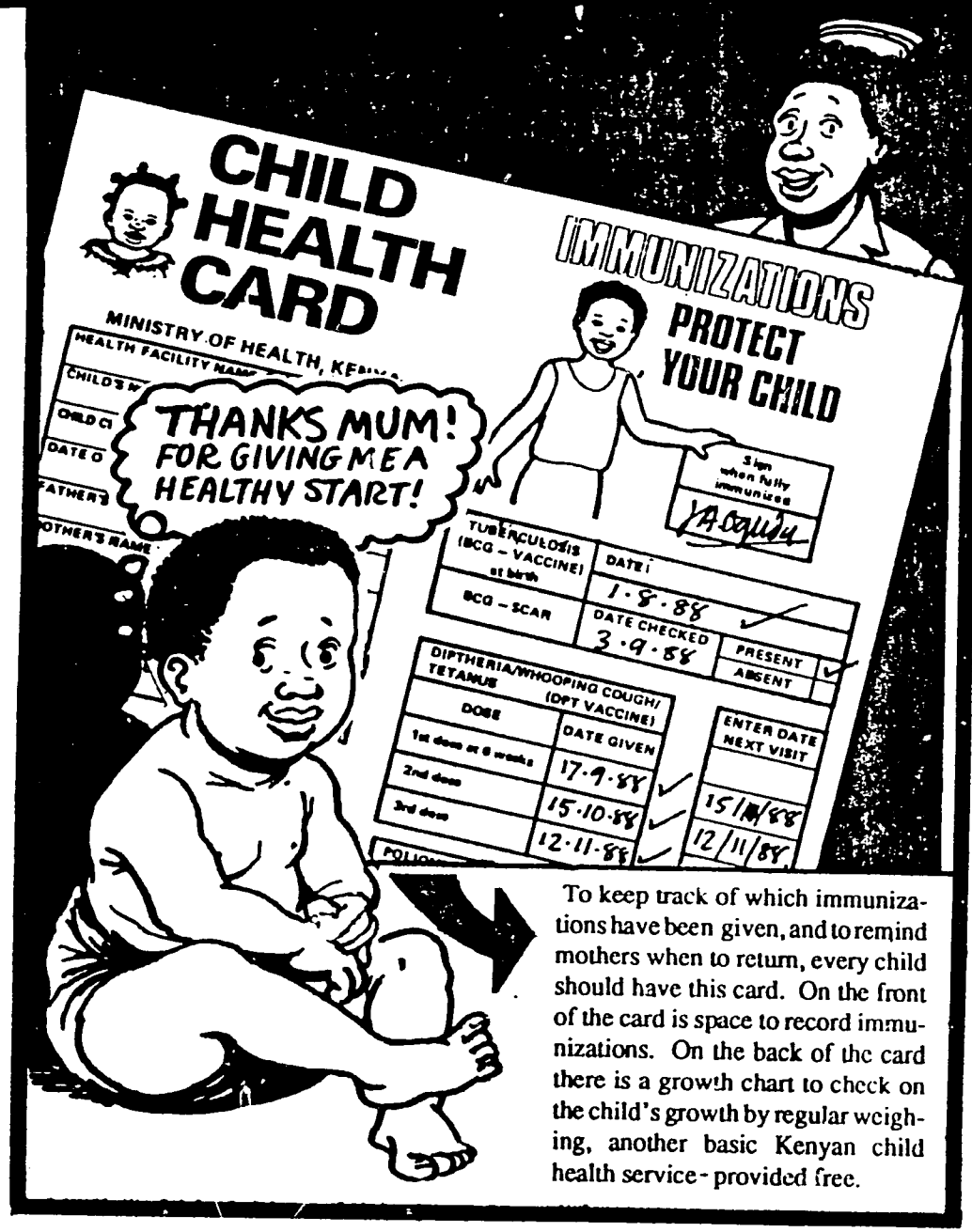
ARTIFICIAL IMMUNITY

Immunization procedures are an artificial way to raise the human body's resistance to certain infections by giving it vaccines.

- Increasing the body's resistance by immunization is one of the most effective methods of control for some communicable diseases. It has been responsible for the worldwide control of smallpox.

COMMUNITY IMMUNITY

To be effective in the control of a disease in a community, immunization has to be given to a high proportion of the people. In controlling these six child-attacking diseases in Kenya, WE must make sure that ALL children are fully immunized.



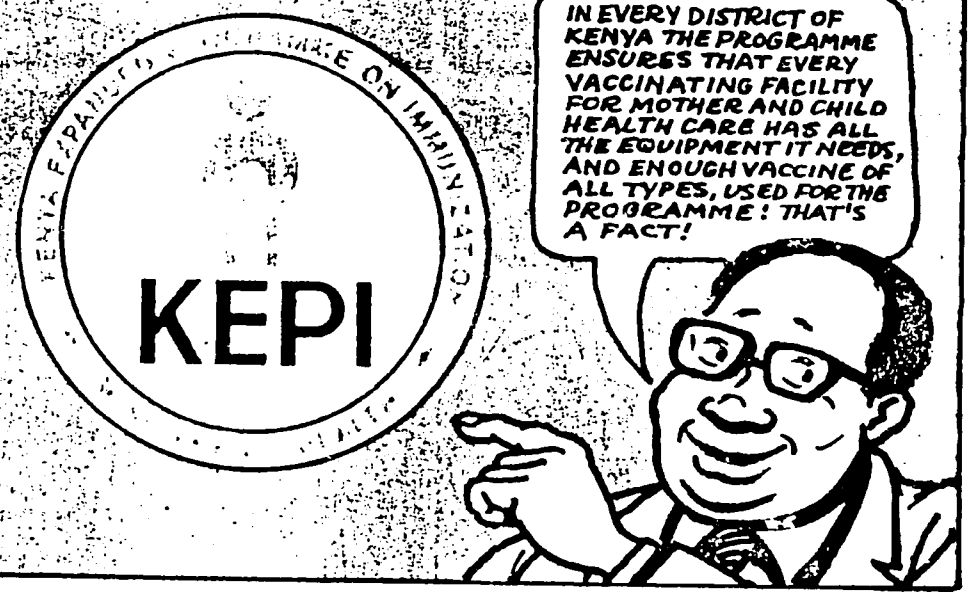
To keep track of which immunizations have been given, and to remind mothers when to return, every child should have this card. On the front of the card is space to record immunizations. On the back of the card there is a growth chart to check on the child's growth by regular weighing, another basic Kenyan child health service - provided free.

...FACTUAL SUMMARY

NATIONAL IMMUNIZATION SCHEDULE
MINISTRY OF HEALTH, KENYA.

PRIMARY VACCINATIONS

VACCINATION	AGE	REMARKS
BCG ORAL POLIO: BIRTH DOSE	BCG AT BIRTH ORAL POLIO BEFORE 6 WEEKS	OR AT FIRST CONTACT WITH CHILD.
DPT 1 ORAL POLIO 1	6 WEEKS	OR AT FIRST CONTACT WITH CHILD AFTER THAT.
DPT 2 ORAL POLIO 2	10 WEEKS	4 WEEKS AFTER FIRST DOSE OF DPT/ ORAL POLIO 1 OR NEXT CONTACT AFTER.
DPT 3 ORAL POLIO 3	14 WEEKS	4 WEEKS AFTER SECOND DOSE OF DPT/ ORAL POLIO 2 OR NEXT CONTACT AFTER.
MEASLES	9 MONTHS	OR NEXT CONTACT AFTER.



QUESTION TIME

KENYA EXPANDED PROGRAMME ON IMMUNIZATION
KEPI
MINISTRY OF HEALTH

WHILE IMMUNIZATION COVERAGE IS QUITE HIGH – A LOT MORE NEEDS TO BE DONE!..

ONLY SIX OUT OF TEN ARE 'FULLY IMMUNIZED'. IT COULD BE TEN OUT OF TEN ... IN KENYA!

YES, BUT...

...IS IT SAFE? I'VE HEARD... THAT SOME KIDS GET SICK! EH?

YES, SOME CHILDREN MAY SUFFER FROM A MILD DISCOMFORT FOR A SHORT WHILE. BUT THE SIDE EFFECTS ARE NOT HARMFUL!

A LITTLE DISCOMFORT – MUCH BETTER THAN GETTING THE DISEASE!

SOME CLINICS WANT TO IMMUNISE BABIES WHEN THEY ARE ALREADY SICK...

...WITH DIARRHEOA EVEN!

THAT'S QUITE RIGHT! ANY CHILD DUE FOR IMMUNIZATION MUST HAVE IT – EVEN IF THEY ARE A LITTLE UNWELL!

YES! EVEN SICK CHILDREN NEED IMMUNISING – IT IS QUITE SAFE TO IMMUNIZE A SICK CHILD!

IT IS SAFE TO IMMUNIZE A SICK CHILD! – W.H.O.

CAN WE BE SURE THAT THE VACCINE IS ALWAYS GOOD?

CERTAINLY! ALL VACCINES USED IN THE KEPI PROGRAMME ARE OF THE HIGHEST QUALITY!

...AND WELL KEPT IN 'FRIDGES SUPPLIED BY THE GOVERNMENT TO ALL KEPI CLINICS!

OKAY – THE VACCINES MAY BE OF THE HIGHEST QUALITY... BUT WHAT ABOUT THE NEEDLES AND THINGS?... ARE THEY REALLY CLEAN...?

...ESPECIALLY WITH THE DANGER OF AIDS?

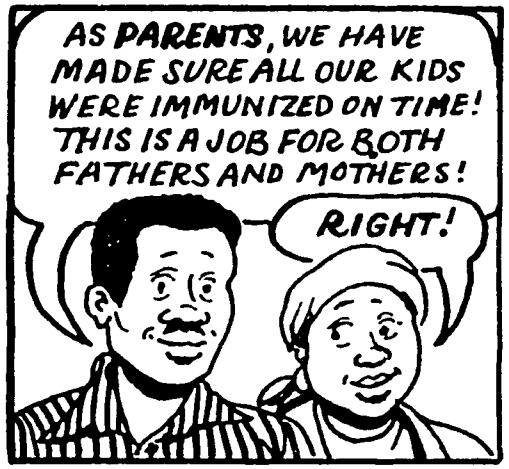
GOOD QUESTIONS!... ALL CENTRES PROVIDING IMMUNIZATIONS ARE EQUIPPED WITH PRESSURE STERILIZATION EQUIPMENT TO ENSURE THAT ALL NEEDLES AND SYRINGES ARE COMPLETELY STERILISED BEFORE USE... OVER 1000 STERILIZERS WERE DELIVERED LAST YEAR!

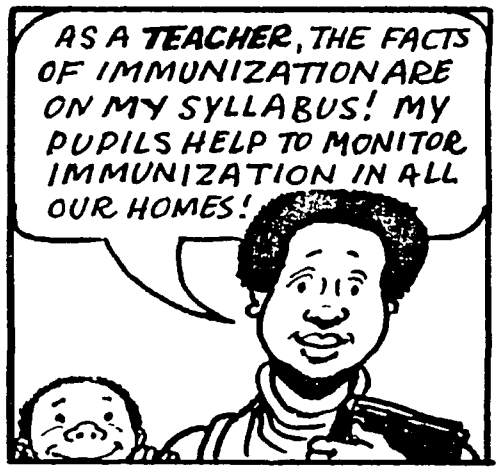
...AND A FRESHLY STERILIZED NEEDLE AND SYRINGE IS USED FOR EACH AND EVERY CHILD! TRULY!

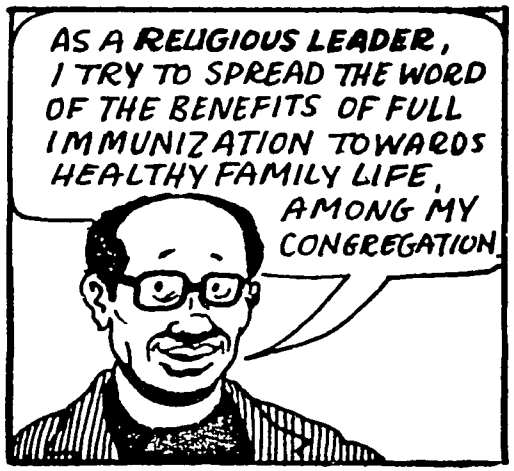
OF COURSE! THE HEALTH OF THE NATION'S CHILDREN IS EVERYBODYS' BUSINESS!

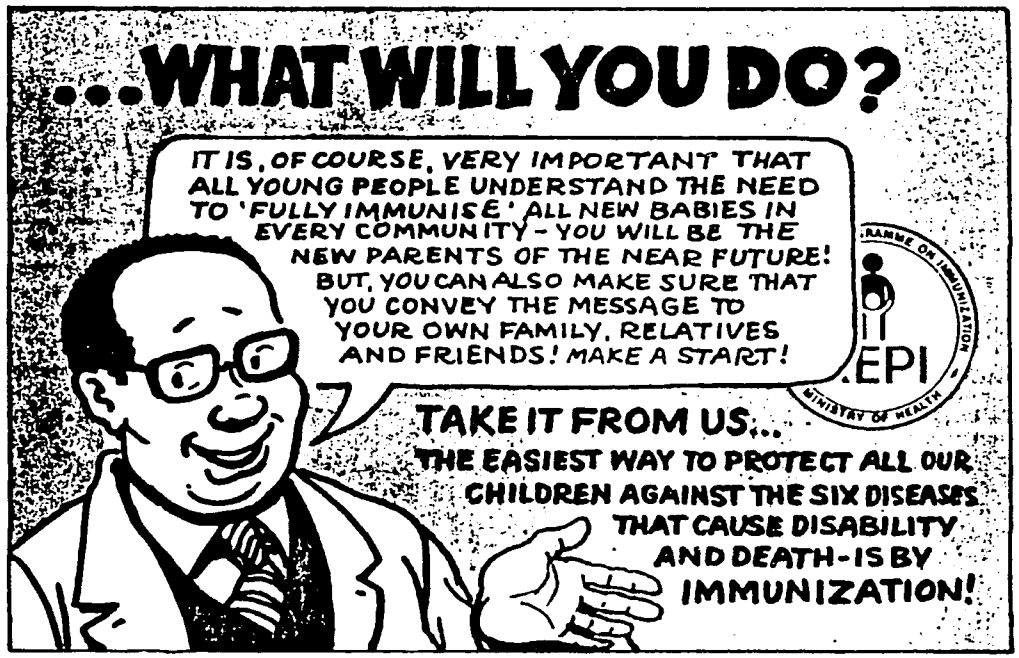
EVEN IF A CHILD HAS HAD MEASLES – IT STILL NEEDS IMMUNIZING!

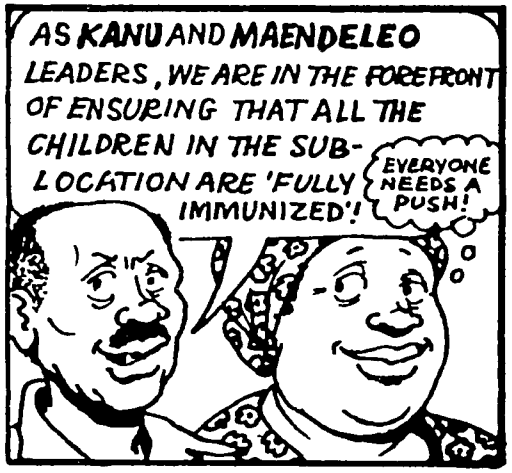
EVERYONE CAN HELP TO ACHIEVE COMMUNITY IMMUNITY...

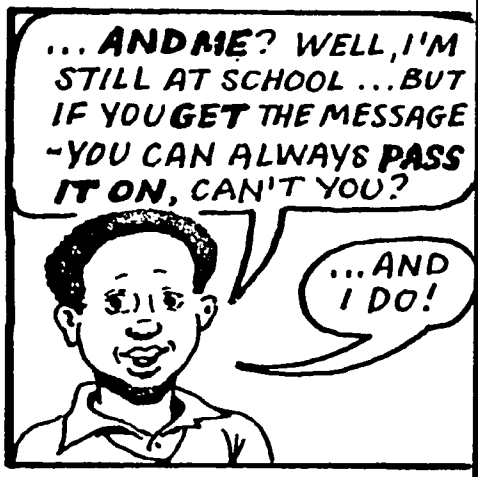












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ANNEX 12

ANNEX 12

Timeline for social mobilization activities, April-December, 1990

KEPI PLAN OF OPERATION 1.4.90 - 31.12.90

SECTION: SOCIAL MOBILIZATION

ACTIVITY:	APRIL'90	MAY'90	JUNE'90	JULY'90	AUGUST'90	SEPTEMBER'90	OCTOBER'90	NOVEMBER'90	DECEMBER'90	
PRODUCE AND DISTRIBUTE ED. MATERIAL	PRETESTING OF VCO NATAL MEASLES POSTERS STICKERS TRANSLATION 10 LANGUAGES	PRINTING 50.000 x2=100,000 100,000 STICKERS PRETESTING 10 POSTERS	DISTRIBUTION POSTERS	PRINTING 10 POSTERS x5000	DISTIBUTION					S1.
PRODUCTION OF RADIO PROGRAMME AND BROADCAST.		SCRIPTING 13 PROGRAMMES IN ENGLISH + KISW + 3 SPOTS	PRODUCTION 13 PROGRAMMES TRANSLATION INTO 10 LANGUAGES		PRETESTING + REV 13 PROGRAMMES	AIRING				S2.
CHILD TO CHILD PROJECT	PLANNING FOR S/NYANZA KISUMU BUNGOMA PRODUCE MATERIAL FOR PROJECT	LAUNCHING IN S/NYANZA KISUMU BUNGOMA			MONITORING	PLANNING FOR NANDI KAKAMEGA BUSIA	LAUNCHING IN NANDI KAKAMEGA BUSIA			S3.
PROMOTIONAL ACTIVITIES CHILDRENS WEEK KEPI 10 YEAR ANNIVERSARY	PLANNING ACTIVITIES			10 YEAR	AQUIRE 42 TROPHIES FOR DISTRICTS PLANNING CHILDRENS WEEK	JUDGING	AWARD TO 42 NFa CH. WEEK			S4.
VIDIO PRODUCTION			PRETESTING REVISION 5 MIN. VIDEO		DISTRIBUTION TO	8 PROVINCES				S5.
MEETINGS WITH GROUPS										S6.
DEVELOPMENT OF MAILING LIST			DEVELOPMENT OF LIST			DISTRIBUTION OF MATERIALS				S7.
DISTRICT ACTIVITIES										S8.
PRINTING + DISTRIBUTION OF 200.000 SCHEDULE	DISTRIBUTION 200.000 COPIES									S9.
200.000 LEAFLET ON FAMILY HEALTH										S10.

ANNEX 13

ANNEX 13

Materials Prepared for child-to-child social mobilization through schools*

SCHOOLS IMMUNIZATION PROMOTION PROJECT

To all primary school teachers and Health Workers in MCH Clinics

A project to accelerate immunization in Siaya district will be launched in all primary schools in March 1990. The aim of the project will be:

1. To teach school pupils about immunization.

2. To ask school pupils to look for all the children in their neighbourhood from birth to two years who are not fully immunized and get them brought to the health facility for immunization.

Pupils in Std 6 and 7 will be involved.

One teacher appointed by the head teacher should be in charge.

INSTRUCTIONS FOR THE TEACHERS

1. An information leaflet/brochure should be given to each school child to show around his/her neighbourhood.

2. For each participating class, a leaflet giving the facts on immunization should be put on the wall.

3. Selected teachers should teach the pupils in classes 6 and 7 the information contained on the classroom leaflet. Teachers should not just read the leaflet, but use it as an outline to prepare a lesson. Visuals will be provided i.e. schedule and child-health cards. A health worker from the MCH clinic may assist where needed.

4. After the lesson, each pupil in class 6 and 7 should be given one sheet containing 4 appointment slips.

5. Pupils should be asked to look for:

   a) Children from birth to two years old who have never been immunized before. This will be done by asking mothers.

   b) Children from birth to two years old who have been given some immunizations but not all that are required. (Again this will be done by asking the mothers and checking the cards).

   When found, the pupils should teach the children's mothers what they learnt about immunization. Then the pupils will give the mothers an appointment slip and ask them to take the children to the MCH clinic for immunization, asking them to take the appointment slips with them and give them to the health workers at the MCH clinics.

*in addition, posters have also been prepared

Continued Overleaf ...

6. Pupils should be asked to check whether the mothers they gave slips to took their children for immunization. The pupils will then collect the appointment slips with the stamp "IMMUNIZED" and will return them to the school teacher in charge.

7. After two weeks, the teacher in charge should make a record of all the appointment slips returned on the form provided and send them to the District Health Education Officer as provided.

INSTRUCTIONS FOR THE MCH CLINIC AT THE HEALTH FACILITY

1. Each immunization centre will be issued with a sheet containing 1000 stamps reading "IMMUNIZED".

2. When mothers come to the clinic with appointment slips, please check their cards (and issue cards to mothers that do not already have them) to determine what vaccines are due. School pupils may sometimes make errors and refer mothers to the clinic unnecessarily. If this happens, please be patient and gentle with the mothers and give them the correct advice and date.

3. If the child referred receives a vaccine, affix one of the stamps on the appointment slip and give it back to the mother.

IMPORTANT

- Make sure that the MCH Clinic is ready for a large influx of children.
- Make sure that the stock of vaccines and supplies is big enough to cater for a large number of children.
- Provide additional staff to the MCH in case of need.

COMPETITION

In order to motivate the children, the project will be done as a competition. Children should be told that schools are competing against each other to see which one will send most children to the MCH Clinic. This will be determined by the number of stamped appointment slips collected by the teacher in charge.

The winning schools (1st and 2nd) in each division will receive an award as well as being mentioned in the radio and rural newspaper.

The Kenya Expanded Programme on Immunisation

MINISTRY OF HEALTH

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PRIMARY SCHOOLS CHILD TO CHILD IMMUNIZATION PROJECT

LESSON PLAN FOR TEACHERS

1. Primary School Pupils will ask mothers to take young children for immunization
   a) To the Health Center
   b) Every day
   c) Free of charge

2. What is immunization?
   Immunization is a way of protecting children against many diseases which can kill, cripple and blind small children by giving them special medicines called vaccines.

3. Which diseases are prevented by immunization?
   There are six childhood diseases that can be prevented by immunization. They are:
   1. Tuberculosis
   2. Polio
   3. Diphtheria
   4. Whooping Cough
   5. Tetanus
   6. Measles

4. When should children be immunized?
   a) Children should be immunized before they are one year old. Immunization stops the child getting the disease. Once the child gets the disease, it is too late for immunization.

   b) To be fully protected, a child has to visit the Health Center five times in the first year of life for immunization.

5. Sometimes a vaccine may cause soreness and sickness to the baby. This will go away and it is better than the child getting the disease.

6. Even if a child is sick, e.g. with a cough or diarrhea, he should still be taken to the health center for immunization.

7. In order to keep a check on which immunizations have been given, and to remind mothers when to return, every child should have a Child Health Card.
   a) Every child is given a Child Health Card soon after birth when he receives his first immunization.
   b) Every immunization given to the child is recorded on the card at the health center.
   c) The mother should take the card with her every time she takes her child to the Health Center.

8. Measles vaccine is the last immunization given at 9 months. Many mothers forget to take their children for measles vaccine. It is very

important that mothers remember to take their children to be immunized against measles.

9. What the pupils will do
   a) Look for those children 0-2 years old without a Child Health Card and refer them to the Health Center.
   b) Look for those children 0-2 years with incomplete cards and refer them to the Health Center (see example).
   c) Look for mothers who have lost their childrens' cards and refer them to the health center where they will be given a new card free of charge.

READ THE INSTRUCTIONS SHEET SO AS TO TELL EACH PUPIL HIS RESPONSIBILITY

10. Timetable of Activities

19th-27th March	-Briefing of Head-Teachers.
27th March-8th April	-Briefing of Teachers and participating pupils.
9th April-7th May	-Pupils' Activities, i.e. Holiday Project
16th May	-Closing date to send slips to the H.E.Q.
26th May	-PRIZE DAY

MOH 505

CHILD HEALTH CARD

1. Oloo

IMMUNIZATIONS PROTECT YOUR CHILD

TUBERCULOSIS (BCG - VACCINE) at birth	DATE GIVEN	10/6/89
BCG - SCAR	DATE CHECKED 1/7/89	PRESENT ✓ / ABSENT

DIPTHERIA/WHOOPING COUGH/ TETANUS (DPT VACCINE)		ENTER DATE NEXT VISIT
DOSE	DATE GIVEN	
1st dose at 6 weeks	21/7/89	21/7/89
2nd dose	19/8/89	19/8/89
3rd dose		17/9/89

POLIOMYELITIS (ORAL POLIO VACCINE)		
DOSE	DATE GIVEN	
Birth dose (before 6 weeks)	10/6/89	
1st dose after 6 weeks	21/7/89	21/6/89
2nd dose	19/8/89	19/7/89
3rd dose		17/8/89

MEASLES VACCINE	DATE GIVEN	
give at 9 months		10/3/90

INCOMPLETE CARD

Oloo did not return for his 3rd doses of DPT and Polio. He is also late for Measles immunisation

2. Achieng'

IMMUNIZATIONS PROTECT YOUR CHILD

TUBERCULOSIS (BCG - VACCINE) at birth	DATE GIVEN	5/1/89
BCG - SCAR	DATE CHECKED 5/4/89	PRESENT ✓ / ABSENT

DIPTHERIA/WHOOPING COUGH/ TETANUS (DPT VACCINE)		ENTER DATE NEXT VISIT
DOSE	DATE GIVEN	
1st dose at 6 weeks	16/2/89	16/2/89
2nd dose	16/3/89	16/3/89
3rd dose	13/4/89	13/4/89

POLIOMYELITIS (ORAL POLIO VACCINE)		
DOSE	DATE GIVEN	
Birth dose (before 6 weeks)	5/1/89	
1st dose after 6 weeks	16/2/89	16/2/89
2nd dose	16/3/89	16/3/89
3rd dose	13/4/89	13/4/89

MEASLES VACCINE	DATE GIVEN	
give at 9 months	1/10/89	1/10/89

COMPLETE CARD

Achieng has completed all the immunisations and is fully protected against six diseases.

IMMUNIZATION 1990 COMPETITION

Immunization Appointment Slip

To Primary School Pupil

Name of your Primary School .....
Your Name .....
Name of Baby .....
Ask the baby's mother to take her baby to the nearest Health Centre.
Name of Health Centre.....

To Health Worker

1. Check all immunizations are up to date and immunize as neccesary.
2. Issue CHILD HEALTH CARD if needed.
3. Stick a coloured "IMMUNIZED" sticker here and give this slip back to the baby's mother.

Immunized

Immunization Appointment Slip

To Primary School Pupil

Name of your Primary School .....
Your Name .....
Name of Baby .....
Ask the baby's mother to take her baby to the nearest Health Centre.
Name of Health Centre.....

To Health Worker

1. Check all immunizations are up to date and immunize as neccesary.
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Immunized

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Immunized

Immunization Appointment Slip

To Primary School Pupil

Name of your Primary School .....
Your Name .....
Name of Baby .....
Ask the baby's mother to take her baby to the nearest Health Centre.
Name of Health Centre.....

To Health Worker

1. Check all immunizations are up to date and immunize as neccesary.
2. Issue CHILD HEALTH CARD if needed.
3. Stick a coloured "IMMUNIZED" sticker here and give this slip back to the baby's mother.

Immunized

Kenya National Immunization Schedule
EFFECTIVE FROM 1.11.1989

	Birth	6 weeks	10 weeks	14 weeks	9 months
B.C.G.	✔				
ORAL POLIO	✔	✔	✔	✔	
D.P.T.		✔	✔	✔	
MEASLES					✔

Every child has the right to be IMMUNIZED

Kenya National Immunization Schedule
EFFECTIVE FROM 1.11.1989

	Birth	6 weeks	10 weeks	14 weeks	9 months
B.C.G.	✔				
ORAL POLIO	✔	✔	✔	✔	
D.P.T.		✔	✔	✔	
MEASLES					✔

Every child has the right to be IMMUNIZED

Kenya National Immunization Schedule
EFFECTIVE FROM 1.11.1989

	Birth	6 weeks	10 weeks	14 weeks	9 months
B.C.G.	✔				
ORAL POLIO	✔	✔	✔	✔	
D.P.T.		✔	✔	✔	
MEASLES					✔

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B.C.G.	✔				
ORAL POLIO	✔	✔	✔	✔	
D.P.T.		✔	✔	✔	
MEASLES					✔

Every child has the right to be IMMUNIZED

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ANNEX 16

IMMUNIZATION 1990 COMPETITION

SCHOOL RESULTS TALLY SHEET

Name of School.....
Number of participating pupils.....
Month of.....

CLASS	Number of slips returned			TOTAL
	Week 1	Week 2	Week 3	
STD 6				
STD 7				

TOTAL _____

Send to:

The District Health Education Officer
P. O. Box .....
.....

To be competed on the 4th week by the Headteacher or appropriate teacher in charge of the project.

ANNEX 14

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ANNEX 14
Press Release for Siaya District
Child-co-Child Social Mobilization

SIAYA DISTRICT

IMMUNIZATION PROTECTS CHILDREN AGAINST MANY DISEASES WHICH CAN KILL, CRIPPLE, AND BLIND SMALL CHILDREN. WITHOUT ANY IMMUNIZATION, AN ESTIMATED 2170 CHILDREN WOULD DIE EACH YEAR IN SIAYA DISTRICT FROM VACCINE-PREVENTABLE DISEASES AND ANOTHER 200 WOULD BECOME PARALYZED EACH YEAR WITH POLIO.

UNFORTUNATELY MANY CHILDREN IN SIAYA ARE STILL NOT PROTECTED AGAINST DISEASES SUCH AS MEASLES, POLIO, TETANUS, AND TUBERCULOSIS (TB). YOUR EFFORTS TO IDENTIFY CHILDREN WHO NEED IMMUNIZATION WILL BE REWARDED. FOR EVERY 1000 CHILDREN FULLY IMMUNIZED IN THEIR FIRST YEAR OF LIFE IN SIAYA DISTRICT, 50 DEATHS AND 5 CASES OF POLIO WILL BE PREVENTED.

ANNEX 15

Wkly Epidem. Rec. - Relevé épidém. hebd.: 1982, 57, 177-180

No. 23

WORLD HEALTH ORGANIZATION
GENEVA

ORGANISATION MONDIALE DE LA SANTÉ
GENÈVE

WEEKLY EPIDEMIOLOGICAL RECORD
RELEVÉ ÉPIDÉMIOLOGIQUE HEBDOMADAIRE

Epidemiological Surveillance of Communicable Diseases
Telegraphic Address: EPIDNATIONS GENEVA *Telex 27821*

Service de la Surveillance épidémiologique des Maladies transmissibles
Adresse télégraphique: EPIDNATIONS GENÈVE *Télex 27821*

Automatic Telex Reply Service
Telex 28150 Geneva with ZCZC and ENGL for a reply in English

Service automatique de réponse
Télex 28150 Genève suivi de ZCZC et FRAN pour une réponse en français

11 JUNE 1982 — 57th YEAR - 57e ANNÉE — 11 JUIN 1982

EXPANDED PROGRAMME ON IMMUNIZATION
Impact of Television Campaign

YEMEN ARAB REPUBLIC. — Like many other countries with recently expanded immunization programmes, Yemen was facing problems of low demand for immunizations and high drop-out rates for return visits. To increase public participation, a television campaign on immunization was broadcast throughout the country as part of the weekly health education programme during November and December 1980.

As a result, the total number of DPT and polio immunizations given during November and December 1980 showed a dramatic increase (Fig. 1). For the country as a whole, the number of DPT/polio immunizations more than doubled in November and nearly doubled in December compared to the monthly average prior to the television campaign. Furthermore, the impact lingered on for several months after the television message was discontinued.

The number of immunizations performed remained high during 1981, declining only for the Ramadan and Eid holidays in July and October.

The number of return visits increased noticeably as well (Table 1). The television campaign on immunization attracted even those vaccinees whose previous visits had taken place more than five months earlier.

Since all EPI units experienced an unprecedented demand for immunization services during the months when the television campaign was in progress and since this demand lingered on for several

PROGRAMME ÉLARGI DE VACCINATION
Impact de la campagne de télévision

RÉPUBLIQUE ARABE DU YÉMEN. — Comme beaucoup de pays ayant depuis peu un programme élargi de vaccination, le Yémen s'est trouvé confronté au double problème de la faible demande et du taux élevé de manquants aux rappels. Pour stimuler la participation de la population, une campagne d'information télévisée sur la vaccination a été organisée pour l'ensemble du pays en novembre et décembre 1980 dans le cadre du programme hebdomadaire d'éducation sanitaire.

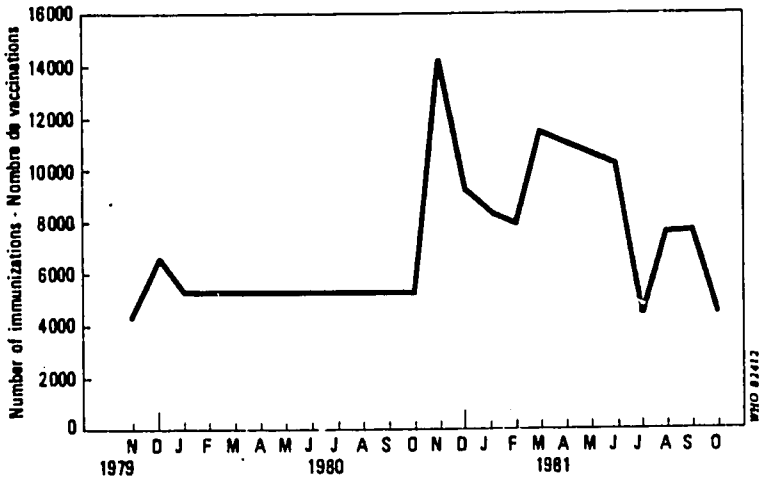
Il s'en est suivi un accroissement spectaculaire des vaccinations DTCoq-polio pour les mois de novembre et décembre 1980 (Fig. 1). Pour l'ensemble du pays, le nombre des vaccinations DTCoq-polio a plus que doublé en novembre et presque doublé en décembre par rapport à la moyenne mensuelle d'avant la campagne télévisée. En outre, l'impact s'est prolongé pendant plusieurs mois après l'émission de télévision.

Le nombre des vaccinations est resté élevé en 1981, ne régressant que pendant le Ramadan et l'Eid en juillet et octobre.

Le nombre des présents aux rappels a également augmenté de façon notable (Tableau 1). La campagne de télévision a même attiré des vaccinés dont la dernière visite remontait à plus de cinq mois.

Le fait que toutes les unités PEV ont connu une augmentation sans précédent des vaccinations au cours des mois où la campagne de télévision se déroulait et que la demande s'est maintenue pendant

Fig. 1
Monthly DPT/Polio Immunizations, Yemen Arab Republic (November 1979-October 1981)
Nombre de vaccinations DTCoq/Polio par mois, République arabe du Yémen (novembre 1979-octobre 1981)



Epidemiological notes contained in this number:
Expanded Programme on Immunization, Human Plague Surveillance, Poliomyelitis Surveillance.
List of Infected Areas, p. 180.

Informations épidémiologiques contenues dans ce numéro:
Programme élargi de vaccination, surveillance de la peste humaine, surveillance de la poliomyélite.
Liste des zones infectées, p. 180.

months in most regions, it appears that television has high credibility and an effective reach and that it can be used, along with other publicity materials, to ensure and increase public participation.

Because of the success of the 1980 television campaign another immunization education programme was televised nationwide in November 1981.

plusieurs mois dans la plupart des régions montre que la télévision jouit d'un crédit considérable et qu'elle touche beaucoup de gens; on peut donc l'utiliser avec d'autres instruments de publicité pour obtenir une plus large participation de la population.

Devant le succès de la campagne télévisée de 1980, un autre programme éducatif sur la vaccination a été télévisé dans tous le pays en novembre 1981.

Table 1. **Monthly DPT/Polio Immunizations in the Yemen Arab Republic, November 1979 — February 1981**
Tableau 1. **Nombre mensuel de vaccinations DTCoq/polio dans la République arabe du Yémen, Novembre 1979-février 1981**

Month Mois	DPT/Polio I DTCoq/polio I	DPT/Polio II DTCoq/polio II	DPT/Polio III DTCoq/polio III	Total DPT/Polio Total DTCoq/polio
November 1979 — Novembre 1979	2 668	1 203	573	4 444
December 1979 — Décembre 1979	4 018	1 747	800	6 565
January—October 1980* — Janvier-octobre 1980*	3 337	1 238	771	5 346
November 1980 — Novembre 1980	10 697	2 330	1 120	14 147
December 1980 — Décembre 1980	6 503	1 659	882	9 044
January 1981 — Janvier 1981	3 990	3 031	1 229	8 250
February 1981 — Février 1981	4 498	2 348	1 112	7 958
March 1981 — Mars 1981	6 163	2 878	2 473	11 514
April 1981 — Avril 1981	7 251	2 013	1 810	11 074
May 1981 — Mai 1981	6 537	2 559	1 546	10 642
June 1981 — Juin 1981	6 178	2 631	1 401	10 210
July 1981 — Juillet 1981	2 448	1 257	700	4 405
August 1981 — Août 1981	4 034	2 075	1 510	7 619
September 1981 — Septembre 1981	4 302	1 893	1 515	7 710
October 1981 — Octobre 1981	2 352	1 309	882	4 543

* Average monthly figures. — Chiffres mensuels moyens.

HUMAN PLAGUE SURVEILLANCE

UNITED STATES OF AMERICA. — For 1981, 13 cases of human plague, four of them fatal, were reported from five states: Arizona (4), California (1), Colorado (1), Oregon (1 fatal), New Mexico (6, 3 fatal). Twelve cases were confirmed at the Centers for Disease Control (CDC) by fluorescent antibody testing and by bacteriological identification and characterization; one case was confirmed serologically.

The patients ranged in age from 2 to 72 years with a mean age of 38.7 years. Seven patients (54%) were male, six were white, six were American Indian (5 Navajo, 1 Hopi), and one was Asian. The clinical manifestations included bubonic plague (5 patients), septicaemic plague (5), septicaemic with confirmed secondary pneumonic plague (2), and presentation unspecified (1).

The various modes of infection were flea bite (5 cases), skinning an infected bobcat (1), rabbit hunting (1), bite of an infected domestic cat (1), and undetermined (5). The five cases acquired by flea bite occurred in relation to epizootic plague among prairie dogs *(Cynomys gunnisoni)* and rock squirrels *(Spermophilus variegatus)*. Two patients with unknown source of infection resided in areas where an epizootic of plague was occurring in prairie dogs.

From 1970 through 1981, enzootic and epizootic plague among rodents and carnivores was documented in 12 western states: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Texas, Utah, Washington, and Wyoming. Human plague cases were reported from eight of theses states. The totals by state for the same period are shown in *Table 1*.

SURVEILLANCE DE LA PESTE HUMAINE

ETATS-UNIS D'AMÉRIQUE. — En 1981, 13 cas de peste humaine, dont quatre mortels, ont été signalés dans cinq états: Arizona (4), Californie (1), Colorado (1), Oregon (1 cas mortel), Nouveau Mexique (6 dont 3 mortels). Douze cas ont été confirmés au *Centers for Disease Control* (CDC) par immunofluorescence, identification et caractérisation bactériologiques; un cas a été confirmé sérologiquement.

Les âges des malades s'échelonnaient entre 2 et 72 ans, avec une moyenne de 38,7 ans. Sept malades (54%) étaient des hommes; six étaient blancs, six étaient des Indiens américains (5 Navajo, 1 Hopi) et un était asiatique. Les manifestations cliniques ont été celles de la forme bubonique (5 cas), de la forme septicémique (5), de la forme septicémique avec localisation pulmonaire secondaire confirmée (2) ou n'ont pas été spécifiées (1).

Cinq sujets avaient été infectés par piqûre de puce, un en dépouillant un lynx infecté, un autre en chassant le lapin, et un autre encore avait été mordu par un chat domestique infecté. Le mode de transmission n'ayant pas été déterminé pour les cinq autres. Les cinq cas contractés par piqûre de puce se sont produits au moment d'une épizootie de peste chez les chiens de prairie *(Cynomys gunnisoni)* et les écureuils de roche *(Spermophilus variegatus)*. Deux malades chez qui l'origine de l'infection n'a pas été déterminée habitaient des régions où une épizootie de peste sévissait chez les chiens de prairie.

De 1970 à 1981, la peste enzootique et épizootique chez les rongeurs et les carnivores a fait l'objet d'études dans 12 états de l'ouest des Etats-Unis: Arizona, Californie, Colorado, Idaho, Montana, Nevada, Nouveau Mexique, Oregon, Texas, Utah, Washington et Wyoming. Des cas de peste humaine ont été signalés dans huit d'entre eux. On trouvera au *Tableau 1* les chiffres par Etat pour la même période.

Table 1. **Reported Cases of Human Plague, by State, United States of America, 1970-1981**
Tableau 1. **Cas notifiés de peste humaine, par Etat, Etats-Unis d'Amérique, 1970-1981**

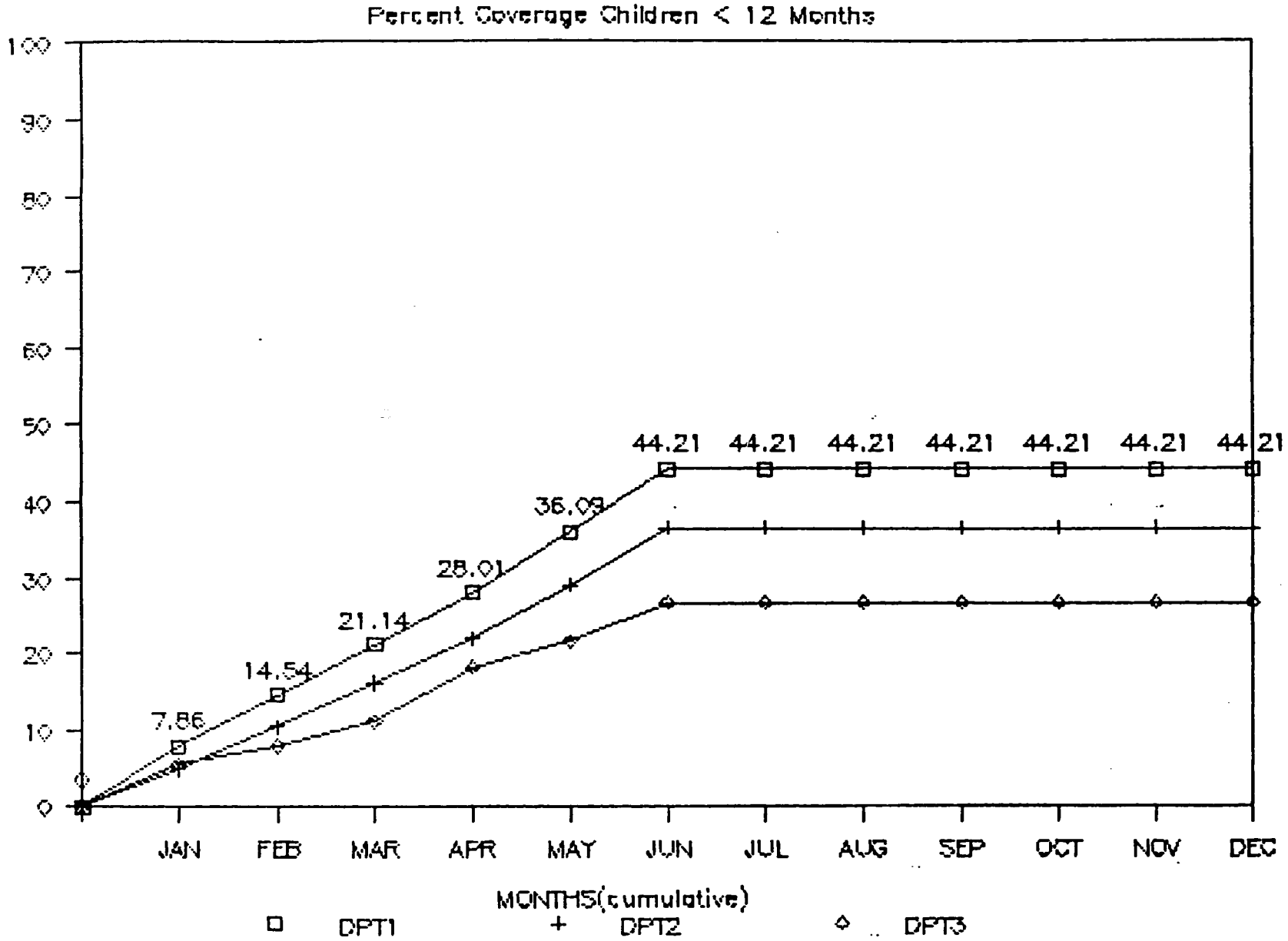
State — Etat	Number of Cases Nombre de cas	Percent Pourcentage
New Mexico — Nouveau-Mexique	77	56.6
Arizona	21	15.4
California — Californie	16	11.8
Colorado	9	6.6
Oregon — Orégon	7	5.2
Nevada	3	2.2
Utah	2	1.5
Wyoming	1	0.7
Total	**136**	**100.0**

EDITORIAL NOTE: Plague is a bacterial disease caused by the organism, *Yersinia pestis*. It is usually contracted from the bite of an infected wild-rodent flea but can also occur as the result of direct contact exposure to infected rodents, rabbits, and carnivores. The infection can be spread from person to person by patients with pulmonary involvement with *Y. pestis*. Although this was most likely a

NOTE DE LA RÉDACTION: La peste est une maladie bactérienne provoquée par le micro-organisme *Yersinia pestis*. Elle est en général transmise par la piqûre d'une puce de rongeur sauvage infecté, mais peut également être contractée par contact direct avec des rongeurs, des lapins et des carnivores infectés. L'infection peut être propagée d'une personne à une autre par des malades présentant une atteinte

ANNEX 16

Sample Reports and Graphs Generated by CEIS in Kenya



Population Denominator Data
Country Summary, 1990
02/03/90

	Population	Growth Rate	Birth Rate	IMR	Newborns	Surviors	Comments
Nairobi	1,496,091	5.1000	0.0340	0.0920	50,867	46,187	
Kiambu	1,093,918	4.0000	0.0560	0.0920	61,259	55,623	
Kirinyaga	446,079	3.6000	0.0560	0.0920	24,980	22,682	
Murang'a	1,036,912	4.0000	0.0560	0.0920	58,067	52,725	
Nyandarua	353,272	3.5000	0.0560	0.0920	19,783	17,963	
Nyeri	745,819	3.6000	0.0560	0.0920	41,766	37,924	
Kilifi	681,335	3.9000	0.0410	0.0920	27,935	25,365	
Kwale	456,047	3.9000	0.0410	0.0920	18,698	16,978	
Lamu	76,507	5.1000	0.0410	0.0920	3,137	2,848	
Mombasa	534,510	3.8000	0.0410	0.0920	21,915	19,899	
Taita Taveta	226,470	3.6000	0.0410	0.0920	9,285	8,431	
Tana River	165,026	5.0000	0.0410	0.0920	6,766	6,144	
Embu	427,012	4.1000	0.0560	0.0920	23,913	21,713	
Isiolo	69,615	3.9000	0.0560	0.0920	3,898	3,539	
Kitui	719,979	3.7000	0.0560	0.0920	40,319	36,610	
Machakos	1,647,989	4.1000	0.0560	0.0920	92,287	83,797	
Marsabit	174,166	5.2000	0.0560	0.0920	9,753	8,856	
Meru	1,310,054	3.9000	0.0560	0.0920	73,363	66,614	
Garissa	248,400	5.7000	0.0400	0.0920	9,936	9,022	
Mandera	144,486	2.5000	0.0400	0.0920	5,779	5,247	
Wajir	244,552	4.8000	0.0400	0.0920	9,782	8,882	
Kisii	1,442,080	3.6000	0.0560	0.0920	80,756	73,326	
Kisumu	769,584	3.2000	0.0560	0.0920	43,097	39,132	
Siaya	770,428	3.4000	0.0560	0.0920	43,144	39,175	
South Nyanza	1,325,140	3.4000	0.0560	0.0920	74,208	67,381	
Kajiado	265,816	5.0000	0.0560	0.0920	14,886	13,516	
Kericho	980,198	3.7000	0.0560	0.0920	54,891	49,841	
Laikipia	254,492	5.5000	0.0560	0.0920	14,252	12,941	
Nakuru	945,518	5.1000	0.0560	0.0920	52,949	48,078	
Narok	370,198	4.9000	0.0560	0.0920	20,731	18,824	
Trans Nzoia	496,220	5.6000	0.0560	0.0920	27,788	25,232	
Uasin Gishu	513,260	4.6000	0.0560	0.0920	28,743	26,099	
Baringo	305,553	3.4000	0.0560	0.0920	17,111	15,537	
Elgeyo Marakwet	213,786	8.6000	0.0560	0.0920	11,972	10,871	
Nandi	485,307	4.1000	0.0560	0.0920	27,177	24,677	
Samburu	104,554	2.5000	0.0560	0.0920	5,855	5,316	
Turkana	149,314	0.0000	0.0560	0.0920	8,362	7,593	
West Pokot	295,247	5.4000	0.0560	0.0920	16,534	15,013	
Bungoma	799,258	3.9000	0.0540	0.0920	43,160	39,189	
Busia	476,804	4.0000	0.0540	0.0920	25,747	23,378	
Kakamega	1,547,061	3.4000	0.0540	0.0920	83,541	75,855	

PERCENTAGE IMMUNIZATION COVERAGE BY LOCATION
Kenya,1989
06/01/90

NO.	District	NEWBORNS	BCG	%	DPT1	%	DPT2	%	DPT3	%	OPV1	%	OPV2	%	OPV3	%	MEASLES	%	COMMENTS
			Percentage for Children Less Than 12 Months of Age																
		5%																	
11	Nairobi	71175	23064	32.4	18412	25.9	18444	25.9	17638	24.8	18273	25.7	17663	24.8	16529	23.2	15649	22.0	coverage approx 100% BCG ~~53%~~
	CUM.	71175	23064	32.4	18412	25.9	18444	25.9	17638	24.8	18273	25.7	17663	24.8	16529	23.2	15649	22.0	
21	Kiambu	52592	7605	14.5	8005	15.2	11654	22.2	3852	7.3	8496	16.2	7602	14.5	3044	5.8	6781	12.9	DROP OUT
	CUM.	52592	7605	14.5	8005	15.2	11654	22.2	3852	7.3	8496	16.2	7602	14.5	3044	5.8	6781	12.9	53%
22	Kirinyaga	21529	3367	15.6	3523	16.4	3664	17.0	2850	13.2	3772	17.5	3605	16.7	3248	15.1	3194	14.8	48%
	CUM.	21529	3367	15.6	3523	16.4	3664	17.0	2850	13.2	3772	17.5	3605	16.7	3248	15.1	3194	14.8	
23	Murang'a	49852	14387	28.9	17339	34.8	17617	35.3	17835	35.8	17096	34.3	17949	36.0	17220	34.5	17373	34.8	49%
	CUM.	49852	14387	28.9	17339	34.8	17617	35.3	17835	35.8	17096	34.3	17949	36.0	17220	34.5	17373	34.8	
24	Nyandarua	17066	4717	27.6	4364	25.6	4304	25.2	3564	20.9	4309	25.2	3215	18.8	3450	20.2	4081	23.9	?
	CUM.	17066	4717	27.6	4364	25.6	4304	25.2	3564	20.9	4309	25.2	3215	18.8	3450	20.2	4081	23.9	
25	Nyeri	35995	16897	46.9	15864	44.1	14920	41.5	13140	36.5	16042	44.6	14358	39.9	11616	32.3	12205	33.9	58%
	CUM.	35995	16897	46.9	15864	44.1	14920	41.5	13140	36.5	16042	44.6	14358	39.9	11616	32.3	12205	33.9	
31	Kilifi	32788	9669	29.5	8910	27.2	7682	23.4	3664	11.2	8307	25.3	6993	21.3	4393	13.4	6271	19.1	DROP OUT
	CUM.	32788	9669	29.5	8910	27.2	7682	23.4	3664	11.2	8307	25.3	6993	21.3	4393	13.4	6271	19.1	100%
32	Kwale	21946	.....		.....		.....		.....		.....		.....		.....		.....		
	CUM.	21946	.....		.....		.....		.....		.....		.....		.....		.....		
33	Lamu	3640	1240	34.1	1198	32.9	991	27.2	724	19.9	1114	30.6	865	23.8	850	23.4	833	22.9	DROP OUT
	CUM.	3640	1240	34.1	1198	32.9	991	27.2	724	19.9	1114	30.6	865	23.8	850	23.4	833	22.9	68%
34	Mombasa	25747	14412	56.0	12177	47.3	11494	44.6	7662	29.8	12341	47.9	11852	46.0	4796	18.6	9361	36.4	DROP OUT
	CUM.	25747	14412	56.0	12177	47.3	11494	44.6	7662	29.8	12341	47.9	11852	46.0	4796	18.6	9361	36.4	85%
35	Taita Taveta	10930	3651	33.4	3783	34.6	3503	32.0	2973	27.2	3617	33.1	3373	30.9	2647	24.2	3126	28.6	
	CUM.	10930	3651	33.4	3783	34.6	3503	32.0	2973	27.2	3617	33.1	3373	30.9	2647	24.2	3126	28.6	55%
36	Tana River	7858	.....		.....		.....		.....		.....		.....		.....		.....		
	CUM.	7858	.....		.....		.....		.....		.....		.....		.....		.....		
41	Embu	20510	1563	7.6	1367	6.7	1351	6.6	1411	6.9	1410	6.9	1468	7.2	1240	6.0	1453	7.1	
	CUM.	20510	1563	7.6	1367	6.7	1351	6.6	1411	6.9	1410	6.9	1468	7.2	1240	6.0	1453	7.1	
42	Isiolo	3350	2178	65.0	1884	56.2	1760	52.5	1414	42.2	1809	54.0	1729	51.6	1284	38.3	1039	31.0	DROP OUT
	CUM.	3350	2178	65.0	1884	56.2	1760	52.5	1414	42.2	1809	54.0	1729	51.6	1284	38.3	1039	31.0	?
43	Kitui	34715	10669	30.7	10468	30.2	9104	26.2	9044	26.1	10196	29.4	8544	24.6	7260	20.9	8494	24.5	
	CUM.	34715	10669	30.7	10468	30.2	9104	26.2	9044	26.1	10196	29.4	8544	24.6	7260	20.9	8494	24.5	94%
44	Machakos	79154	23559	29.8	20885	26.4	23806	30.1	17816	22.5	23241	29.4	21058	26.6	13474	17.0	19983	25.2	DROP OUT
	CUM.	79154	23559	29.8	20885	26.4	23806	30.1	17816	22.5	23241	29.4	21058	26.6	13474	17.0	19983	25.2	60%
45	Marsabit	8278	935	11.3	945	11.4	764	9.2	519	6.3	791	9.6	670	8.1	420	5.1	589	7.1	DROP OUT
	CUM.	8278	935	11.3	945	11.4	764	9.2	519	6.3	791	9.6	670	8.1	420	5.1	589	7.1	76%
46	Meru	63044	28413	45.1	27321	43.3	25169	39.9	22789	36.1	22322	35.4	21803	34.6	19779	31.4	18479	29.3	DROP OUT 64% (91%)
	CUM.	63044	28413	45.1	27321	43.3	25169	39.9	22789	36.1	22322	35.4	21803	34.6	19779	31.4	18479	29.3	
51	Garissa	11750	1782	15.2	2022	17.2	1467	12.5	1008	8.6	1546	13.2	1147	9.8	865	7.4	1061	9.0	DROP OUT
	CUM.	11750	1782	15.2	2022	17.2	1467	12.5	1008	8.6	1546	13.2	1147	9.8	865	7.4	1061	9.0	50%
52	Mandera	7048	990	14.0	913	13.0	788	11.2	453	6.4	819	11.6	718	10.2	468	6.6	472	6.7	DROP OUT
	CUM.	7048	990	14.0	913	13.0	788	11.2	453	6.4	819	11.6	718	10.2	468	6.6	472	6.7	50%
53	Wajir	11668	984	8.4	1071	9.2	827	7.1	619	5.3	916	7.9	623	5.3	496	4.3	664	5.7	DROP OUT
	CUM.	11668	984	8.4	1071	9.2	827	7.1	619	5.3	916	7.9	623	5.3	496	4.3	664	5.7	? 23%
61	Kisii	69598	31025	44.6	26691	38.4	31429	45.2	27594	39.6	31976	45.9	29308	42.1	21832	31.4	23559	33.9	
	CUM.	69598	31025	44.6	26691	38.4	31429	45.2	27594	39.6	31976	45.9	29308	42.1	21832	31.4	23559	33.9	74%
62	Kisumu	37286	8796	23.6	6782	18.2	7195	19.3	5294	14.2	7014	18.8	6058	16.2	4226	11.3	4724	12.7	DROP OUT
	CUM.	37286	8796	23.6	6782	18.2	7195	19.3	5294	14.2	7014	18.8	6058	16.2	4226	11.3	4724	12.7	39%
63	Siaya	37255	12587	33.8	13184	35.4	10998	29.5	11258	30.2	10911	29.3	11015	29.6	7013	18.8	8324	22.3	
	CUM.	37255	12587	33.8	13184	35.4	10998	29.5	11258	30.2	10911	29.3	11015	29.6	7013	18.8	8324	22.3	74%
64	South Nyanza	64078	12740	19.9	10932	17.1	9511	14.8	7782	12.1	10071	15.7	8337	13.0	6815	10.6	5402	8.4	DROP OUT
	CUM.	64078	12740	19.9	10932	17.1	9511	14.8	7782	12.1	10071	15.7	8337	13.0	6815	10.6	5402	8.4	74%

71	Kajiado	12658	1418	11.2	1453	11.5	1435	11.3	1241	9.8	1266	10.0	1258	9.9	955	7.5	857	6.8	
	CUM.	12658	1418	11.2	1453	11.5	1435	11.3	1241	9.8	1266	10.0	1258	9.9	955	7.5	857	6.8	100%
72	Kericho	47261	22754	48.1	20872	44.2	22056	46.7	13085	27.7	19096	40.4	19723	41.7	14579	30.8	14570	30.8	DROP OUT 115%
	CUM.	47261	22754	48.1	20872	44.2	22056	46.7	13085	27.7	19096	40.4	19723	41.7	14579	30.8	14570	30.8	
73	Laikipia	12061	2749	22.8	2874	23.8	2898	24.0	2404	19.9	3003	24.9	2756	22.9	2425	20.1	2679	22.2	
	CUM.	12061	2749	22.8	2874	23.8	2898	24.0	2404	19.9	3003	24.9	2756	22.9	2425	20.1	2679	22.2	39% ?
74	Nakuru	44982	.....		.....		.....		.....		.....		.....		.....		.....		
	CUM.	44982	.....		.....		.....		.....		.....		.....		.....		.....		
75	Narok	17645	8426	47.8	8310	47.1	7626	43.2	4980	28.2	8012	45.4	6083	34.5	4476	25.4	4910	27.8	DROP OUT 89%
	CUM.	17645	8426	47.8	8310	47.1	7626	43.2	4980	28.2	8012	45.4	6083	34.5	4476	25.4	4910	27.8	
76	Trans Nzoia	23495	6487	27.6	5894	25.1	5556	23.6	3867	16.5	4489	19.1	5024	21.4	3016	12.8	4087	17.4	DROP OUT ? 55%
	CUM.	23495	6487	27.6	5894	25.1	5556	23.6	3867	16.5	4489	19.1	5024	21.4	3016	12.8	4087	17.4	
77	Uasin Gishu	24534	7986	32.6	7111	29.0	6895	28.1	4235	17.3	7436	30.3	7118	29.0	3613	14.7	5470	22.3	DROP OUT 55%
	CUM.	24534	7986	32.6	7111	29.0	6895	28.1	4235	17.3	7436	30.3	7118	29.0	3613	14.7	5470	22.3	
81	Baringo	14775	6228	42.2	6284	42.5	6142	41.6	4981	33.7	6173	41.8	5390	36.5	4438	30.0	3906	26.4	DROP OUT 79%
	CUM.	14775	6228	42.2	6284	42.5	6142	41.6	4981	33.7	6173	41.8	5390	36.5	4438	30.0	3906	26.4	
82	Elgeyo Marakwe	9843	.....		.....		.....		.....		.....		.....		.....		.....		
	CUM.	9843	.....		.....		.....		.....		.....		.....		.....		.....		
83	Nandi	23310	5206	22.3	4768	20.5	4723	20.3	4383	18.8	4743	20.3	4178	17.9	3636	15.6	2849	12.2	78%
	CUM.	23310	5206	22.3	4768	20.5	4723	20.3	4383	18.8	4743	20.3	4178	17.9	3636	15.6	2849	12.2	
84	Saburu	5100	2076	40.7	2084	40.9	2027	39.7	1349	26.5	2104	41.3	1811	35.5	1129	22.1	1147	22.5	DROP OUT 95%
	CUM.	5100	2076	40.7	2084	40.9	2027	39.7	1349	26.5	2104	41.3	1811	35.5	1129	22.1	1147	22.5	
85	Turkana	7466	3561	47.7	3357	45.0	2714	36.4	1716	23.0	2798	37.5	2366	31.7	1878	25.2	1944	26.0	DROP OUT 109%
	CUM.	7466	3561	47.7	3357	45.0	2714	36.4	1716	23.0	2798	37.5	2366	31.7	1878	25.2	1944	26.0	
86	West Pokot	14006	6885	49.2	6476	46.2	5570	39.8	4272	30.5	6145	43.9	4734	33.8	3326	23.7	3855	27.5	DROP OUT 69%
	CUM.	14006	6885	49.2	6476	46.2	5570	39.8	4272	30.5	6145	43.9	4734	33.8	3326	23.7	3855	27.5	
91	Dungona	38463	.....		.....		.....		.....		.....		.....		.....		.....		
	CUM.	38463	.....		.....		.....		.....		.....		.....		.....		.....		
92	Busia	22923	4464	19.5	5019	21.9	4304	18.8	3117	13.6	3859	16.8	3292	14.4	2538	11.1	2041	8.9	DROP OUT ?
	CUM.	22923	4464	19.5	5019	21.9	4304	18.8	3117	13.6	3859	16.8	3292	14.4	2538	11.1	2041	8.9	
93	Kakamega	74810	.....		.....		.....		.....		.....		.....		.....		.....		
	CUM.	74810	.....		.....		.....		.....		.....		.....		.....		.....		
	TOTAL	1192184	313470	26.3	292542	24.5	290388	24.4	230531	19.3	285513	23.9	263686	22.1	198974	16.7	221432	18.6	
	CUM.	1192184	313470	26.3	292542	24.5	290388	24.4	230531	19.3	285513	23.9	263686	22.1	198974	16.7	221432	18.6	
NO.	District	NEWBORNS	BCG	%	DPT1	%	DPT2	%	DPT3	%	OPV1	%	OPV2	%	OPV3	%	MEASLES	%	

Form 4A: PERIODICAL IMMUNIZATION TARGETS

District Kiambu ,1988

(Percentage for Children Less than 12 Months of Age)

Month	REMARKS	BCG	%	DPT1	%	DPT2	%	DPT3	%	OPV1	%	OPV2	%	OPV3	%	MEASLES	%	Fully Imm.	Units reporting	COMMENTS MAX 50 (33
1	50569	1462	2.9	1976	3.9	1990	3.9	822	1.6	1982	3.9	1713	3.4	575	1.1	1445	2.9	182	34	
CUM.	50569	1462	2.9	1976	3.9	1990	3.9	822	1.6	1982	3.9	1713	3.4	575	1.1	1445	2.9	182		
2	50569	2091	4.1	1990	3.9	2041	4.0	1143	2.3	1880	3.7	1912	3.8	963	1.9	1513	3.0	147	34	
CUM.	50569	3553	7.0	3966	7.8	4031	8.0	1965	3.9	3862	7.6	3625	7.2	1538	3.0	2958	5.8	329		
3	50569	1624	3.2	2117	4.2	2014	4.0	306	0.6	2262	4.5	1987	3.9	150	0.3	1722	3.4	21	35	
CUM.	50569	5177	10.2	6083	12.0	6045	12.0	2271	4.5	6124	12.1	5612	11.1	1688	3.3	4680	9.3	350		
4	50569	1885	3.7	2030	4.0	1840	3.6	616	1.2	2122	4.2	1799	3.6	425	0.8	1389	2.7	243	35	
CUM.	50569	7062	14.0	8113	16.0	7885	15.6	2887	5.7	8246	16.3	7411	14.7	2113	4.2	6069	12.0	593		
5	50569	3728	7.4	2799	5.5	433	0.9	2045	4.0	6800	13.4	3048	6.0	390	0.8	2226	4.4	187		
CUM.	50569	10790	21.3	10912	21.6	8318	16.4	4932	9.8	15046	29.8	10459	20.7	2503	4.9	8295	16.4	780		
6	50569	2610	5.2	2689	5.3	2654	5.2	269	0.5	3006	5.9	5693	11.3	169	0.3	2237	4.4	285	36	
CUM.	50569	13400	26.5	13601	26.9	10972	21.7	5201	10.3	18052	35.7	16152	31.9	2672	5.3	10532	20.8	1065		
7	50569	1895	3.7	2396	4.7	2582	5.1	523	1.0	2895	5.7	2904	5.7	467	0.9	1795	3.5	426	36	
CUM.	50569	15295	30.2	15997	31.6	13554	26.8	5724	11.3	20947	41.4	19056	37.7	3139	6.2	12327	24.4	1491		
8	50569	2537	5.0	2726	5.4	2687	5.3	740	1.5	2978	5.9	2946	5.8	695	1.4	2092	4.1	225	43	
CUM.	50569	17832	35.3	18723	37.0	16241	32.1	6464	12.8	23925	47.3	22002	43.5	3834	7.6	14419	28.5	1716		
9	50569	1970	3.8	1500	3.0	2004	4.0	1164	2.3	1619	3.2	1428	2.8	1088	2.2	1189	2.4	1430	37	
CUM.	50569	19762	39.1	20223	40.0	18245	36.1	7628	15.1	25544	50.5	23430	46.3	4922	9.7	15608	30.9	3146		
10	50569	1945	3.8	1525	3.0	2077	4.1	1118	2.2	1864	3.7	1784	3.5	1088	2.2	1042	2.1	870	36	
CUM.	50569	21707	43.0	21748	43.0	20322	40.2	8746	17.3	27408	54.2	25214	49.9	6010	11.9	16650	32.9	4016		
11	[illegible]	[illegible]	[illegible]	1158	2.3	1322	3.5	1312	2.6	1678	3.2	1294	2.6	774	1.5	686	1.4	1918	31	
CUM.	[illegible]	[illegible]	[illegible]	22906	45.3	22074	43.7	10058	19.9	29086	57.4	26508	52.4	6784	13.4	17336	34.3	5934		
12	[illegible]	1471	2.9	1741	3.4	1626	3.2	1074	2.1	1240	2.5	1204	2.4	935	1.8	967	1.9	457	29	
CUM.	[illegible]	24178	48.1	24647	47.9	23700	46.9	11153	22.1	30286	59.9	27712	54.8	7719	15.2	18303	36.2	5891		

AV 35.4

ANNEX 17

ANNEX 17

MINISTRY OF HEALTH

DUPLICATE

MONTHLY ACTIVITY REPORT

Out Patient Return of Morbidity for the month of 19 Name of health unit District

HQ USE ONLY

No.	DISEASE (new cases only)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Code No
		Days of the month																																
1	Diarrhoeal diseases																																	1 7
2	Tuberculosis																																	8 14
3	Leprosy																																	16 19
4	Whooping cough																																	20 21
5	Meningitis																																	22 23
6	Tetanus																																	24 26
7	Poliomyelitis																																	27 28
8	Chickenpox																																	29 30
9	Measles																																	31 32
10	Infectious hepatitis (Jaundice)																																	33 35
11	Mumps																																	36 38
12	Malaria																																	39 40
13	Gonorrhoea																																	41 43
14	Urinary tract infections																																	44 47
15	Bilharzia (Schistosomiasis)																																	48 51
16	Intestinal worms																																	52 54
17	Malnutrition																																	55 57
18	Anaemia																																	58 60
19	Eye infections																																	61 62
20	Cataract																																	63 65
21	Ear infections																																	66 68
22	Disease of circulatory system																																	69 70
23	Disease of the respiratory system																																	71 72
24	Pneumonia																																	73 75
25	Abortion																																	76 79
26	Disease of puerperium and child birth																																	16 18
27	Neoplasms																																	19 22
28	Disease of blood and blood forming organs																																	23 24
29	Mental disorders																																	25 26
30	Sensory disorders																																	27 28
31	Disease of the skin (including ulcers)																																	29 31
32	Rheumatism joint pains etc																																	32 35
33	Congenital anomalies																																	36 39
34	Pyexia of unknown origin (PUO)																																	40-42
35	Poisoning																																	43-44
36	Accidents (including fractures burns etc)																																	45 47
37																																		48 50
38																																		51 54
39																																		55 57
40	All other diseases																																	58 60
41	Total new cases																																	61 63
42	Readmissions (Revisits)																																	64 67
43	Referrals																																	68 71
44	No. of first attendances																																	72 75
45	Average dis. per attendance																																	76 79
																																		16 19
																																		20 22

Completed by Date Day Month Year Signature

(PK 41)

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