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**Expanded Program on
Immunization Program Review
Asmara, Eritrea
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Dr. Rose Macauley

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TABLE OF CONTENTS

ACRONYMS

I.	EXECUTIVE SUMMARY	1
II.	PURPOSE OF THE TRIP	1
III.	BACKGROUND	1
IV.	ACTIVITIES	3
V.	METHODOLOGY	4
VI.	FINDINGS	6
VII.	RECOMMENDATIONS	8
VIII.	FOLLOW-UP ACTION	9

APPENDICES

Appendix A	Map of Eritrea
Appendix B	Methodology
Appendix C	Guidelines for Interviewers
Appendix D	Forms X1 and X2

ACRONYMS

BCG	Bacille Calmette Guerin (Vaccine against tuberculosis)
CHW	Community Health Worker
DPT	Diphtheria Pertussis Tetanus Vaccine
EPI	Expanded Program on Immunization
EPLF	Eritrean People's Liberation Front
FIFO	First-in-first-out
GSE	Government of the State of Eritrea
HC	Health Center
HIS	Health Information System
HS	Health Station
IEC	Information, Education and Communication
MCH	Maternal and Child Health
MOH	Ministry of Health
NNT	Neonatal Tetanus
NSO	National Statistical Office
OPV	Oral Polio Vaccine
OUT	Outreach
PHC	Primary Health Care
PMO	Provincial Medical Officer
SCF	Save the Children Fund, UK
TBA	Traditional Birth Attendant
TT	Tetanus Toxoid
UCI	Universal Child Immunization
UK	United Kingdom
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization
WHO/AFRO	World Health Organization, Africa Regional Office

I. EXECUTIVE SUMMARY

The purpose of the trip was to participate in the Eritrean national EPI program review at the request of the World Health Organization/Africa Regional Office (WHO/AFRO) to the Basic Support for Institutionalizing Child Survival (BASICS) project. The review team consisted of representatives from the Ministry of Health (MOH) in Asmara, Provincial Medical Officers, frontline health workers, WHO, UNICEF, and USAID/BASICS. A full report of the EPI review is under a separate cover and it is available at BASICS headquarters, UNICEF/Asmara and the Eritrean MOH.

The objectives of the review were: (1) to constructively examine the status of the EPI in the context of accelerating the program; and (2) to provide guidance for developing an immunization strategy.

The timing of BASICS' participation in the review was opportune for the following reasons:

1. The MOH saw BASICS as a technical resource that could assist the MOH in strengthening the national EPI;
2. BASICS' participation provided an opportunity for close collaboration between UNICEF/Asmara and the BASICS project; and
3. As BASICS prepares to implement the Eritrean Health and Population Project, the findings from the review will help in developing project strategies and activities.

II. PURPOSE OF THE TRIP

The primary purpose of the trip was to assist the Eritrean MOH to review their national EPI in collaboration with WHO/AFRO and UNICEF.

III. BACKGROUND

The 30 year struggle for independence in Eritrea, which devastated the health care infrastructure, ended on May 24, 1991, when the forces of the Eritrean People's Liberation Front (EPLF) entered and liberated the capital Asmara. Two years later, independence was declared in May 1993 following an UN-supervised referendum in which 99 percent of Eritreans voted for independence.

The State of Eritrea, with an area of about 124,000 square kilometers is about the size of Greece. It is bordered by the Sudan to the north and west, the Red Sea to the northeast, Ethiopia to the south, and the Republic of Djibouti to the southeast. There are three physiographic zones: the central highlands, the western lowlands, and the eastern lowlands (also known as the coastal

plains). Eritrea is currently divided into ten provinces or *awrajas*: Akele-Guzai, Barka, Denkalia, Gash-Setit, Hamasien, Sahel, Semhar, Senhit, Seraye, and the capital region of Asmara (Appendix A — Map of Eritrea).

The population of Eritrea, estimated at three million people, is culturally diverse, consisting of nine ethnic groups. The average population density is 28 persons per square kilometer. Population distribution is not uniform. The highest density is in the highlands where about 45 percent of the population lives on about 18 percent of the land area. About 20 percent of the population currently resides in urban areas, a proportion that is expected to rapidly increase as the more than 700,000 Eritrean refugees are repatriated during the next three to four years.

With an average growth rate of three percent per annum, the population of Eritrea will double in 23 years. Fertility rates are estimated at seven children per woman. The resulting population pyramid is broad-based with 50 percent of the population under the age of 18 years, and four percent over the age of 64 years. With such a large percentage of the population outside the economically active age group, the dependency ratio is a very high 96 percent. The dependency ratio equals the population under 15 years of age plus the population older than 64 years of age divided by the population aged 15 to 64 years. This is significantly higher than the developing country average of 89 percent.

During the struggle for independence, the EPLF developed a health care system. They trained health workers in the areas under their control in accordance with the principles of primary health care (PHC), based on the principles of equity, accessibility, affordability, and community involvement. Since independence the Government of the State of Eritrea (GSE) has been committed to nationwide expansion of this strategy.

Since most health facilities were destroyed or neglected during the 30-year struggle for independence, it is estimated that only 50 percent of the 2,365 villages in Eritrea have reasonable access to primary health care services (i.e., living within five kilometers of a health facility). There are only 18 hospitals, 33 health centers, and 113 health stations. Likewise, human resources are limited with an average of only one medical doctor per 20,883 persons, one nurse per 3,061 people, one health assistant per 3,300 persons, and one laboratory technician per 34,000 people. These rates are among the lowest in the world.

Given their limited resources the MOH has three strategies for improving service delivery: (1) the reorganization of services; (2) decentralizing administrative roles and responsibilities; and (3) training large numbers of mid- and peripheral level health workers, including nurses, health assistants, community health workers (CHWs), and traditional birth attendants (TBAs). The objectives of this strategy are to focus on increasing access of rural communities to preventive services, including maternal/child health, disease control, and nutrition.

At present, the government operates a three-tier PHC system composed of the primary (health stations and community health services), secondary (health centers and provincial hospitals), and

tertiary (referral and specialized hospitals) levels. The MOH promotes community involvement in health services by training community agents and by initially providing the essential supplies. Thereafter, the community takes responsibility for monitoring and sustaining the services with the central government retaining the overall responsibility for health matters and policy. Although the need for intersectoral collaboration has been recognized, it has not yet been operationalized or institutionalized.

Although launched in Asmara in 1980, EPI operations have been limited. Nationwide expansion was only possible after the achievement of independence in 1993. Since then, progress has been slow as the infrastructure is ill-equipped to enable adequate delivery of the services.

Much has been achieved in building a framework for immunization by equipping the health facilities with cold chain equipment, providing a central cold store, procuring vaccines, and instituting a vaccine monitoring system. In spite of these efforts, the national vaccination coverage of children under one year of age is estimated at only 25 percent. Performance varies among the provinces. Given this situation, the GSE is very committed to increasing the expanding EPI coverage. The first step in the series of activities is the implementation of the 1995 EPI review, the first of its kind in the State of Eritrea. Its purpose is to generate baseline data to guide the planning of a strategy aimed at achieving the goal of universal childhood immunization.

IV. ACTIVITIES

The MOH and UNICEF/Asmara organized a briefing session for the review team on the May 23, 1995. The MOH presented the review team with adapted versions of the WHO EPI review modules and the WHO cluster immunization coverage survey forms for the national EPI review. The team spent the next three days reviewing and revising the forms to make them more appropriate for the local situation.

Once the forms were revised, the team trained supervisors in Asmara and assisted supervisors in training interviewers in each province.

At the end of the review, the team trained data entry clerks, supervised the data entry, analyzed the data and debriefed MOH officials and the donor community on the findings of the review.

Objectives of the Review

The general objectives of the 1995 EPI review were:

1. To assess the strengths and weaknesses of the Expanded Programme on Immunization;
2. To document the vaccine coverage status as of 1995; and
3. To make recommendations on strategies and interventions that will enhance the achievement and sustainability of UCI by 1997.

The specific objectives included:

1. Review the national policies of the EPI as well as its administrative, managerial, and infrastructural support for its implementation;
2. Review the logistical support systems for the EPI and to see whether they can ensure the realization of UCI, as well as its sustainability;
3. Review the status of monitoring systems and how they support logistics, stock control, disease surveillance, and the EPI process indicators;
4. Assess the knowledge and skill levels of health workers responsible for the delivery of vaccination services;
5. Determine the constraints and/or enabling factors that lead to incomplete and full vaccination, respectively;
6. Implement an immunization coverage survey to determine the current level of coverage as a key benchmark in EPI monitoring;
7. Examine options for social mobilization to increase demand for vaccination and other services; and
8. Use the findings of this review to build a base for accelerated child immunization.

V. METHODOLOGY

The assessment consisted of a comprehensive program review and immunization coverage surveys in each of the ten provinces, using two WHO instruments adapted to the local situation (EPI review modules and the 30-cluster survey method). Data collection for the review entailed interviews with health staff and record reviews.

For the general program review, the team carried out a systems analysis on the structure, operations, and achievements of the Eritrean National Immunization Program. Questionnaires were developed for each level of program management: national, provincial, hospital, health center, and health station.

The questionnaires covered issues in program management, policy, health information system, IEC, cold chain, and logistics. Besides the national and provincial levels, the questionnaires targeted key informants of randomly selected health institutions. In order to facilitate both quantitative and qualitative inferences, the questions were both closed and open-ended. Because of the volume of the questionnaire, it is not attached to this report. However, copies can be obtained from the Eritrean MOH Provincial Offices and UNICEF/Asmara.

A total of 61 questionnaires were administered in all ten provinces. Fifty health facilities (10 hospitals, 20 health centers and 20 health stations) were visited. Interviews were administered by the review team, consisting of five international and 10 local facilitators from the Ministry of Health. The review team administered the questionnaire under the leadership of the Provincial Medical Officer of the respective province.

The purpose of the cluster survey was to evaluate the level of immunization coverage among children, to assess the level of protection against NNT among newborns and to determine the reasons for immunization failure and success. Five survey teams composed of two interviewers each were formed using local health workers, nurses and health assistants in each province. Each provincial survey team consisted of two local supervisors, two national program review team members, and an international team member, all of whom participated in a three-day training session at the national level. Training was both classroom and field based. Following the training, the 10 teams conducted a two-day training session for interviewers at the provincial-level. The provincial-level training was conducted in both English and Tigrigna. Interviewer guides and survey tools were in both English and Tigrigna.

In each province, 210 children between 12 and 23 months of age for immunization coverage and 210 mothers of children between 0 and 11 months of age for determining the percent of children born protected against NNT were randomly selected in accordance with the WHO 30-cluster methodology (Appendix B). The sampling frame consisted of the registered voters for the national referendum in 1993, as provided by the National Statistical Office (NSO). Although this registry may no longer be complete, it is the best existing population data. Only residents of the household for at least one month were considered eligible, a household being defined as a group of individuals living in the same house and sharing meals from the same pot. For each child, the mother was asked to show her child's immunization card in order to verify the vaccination and birth dates. Each interviewer was given both the Julian and Gregorian calendars to facilitate the conversion of dates from one to the other. For each child, the interviewer checked for a BCG scar.

In the absence of an immunization card, the interviewer established the immunization history and wrote "+" for history on the questionnaire for each immunization recalled by mother. Interviewers were also given a list of significant dates that would assist a mother to establish the month in which the child was born. Once the month was established, the interviewer was instructed to take the first of the month as the child's estimated birth date. In the event that the child had more than one immunization card, the interviewer was requested to record immunization information from all cards on "form X1." The same approach was followed for the mother's immunization with tetanus toxoid using "form X2" (Appendix D).

Supervisors reviewed each survey questionnaire form for accuracy and completeness before the survey team left the survey area. A team was sent back to a cluster to obtain sufficient eligibles if it was established that they had listed more than one ineligible child or mother from a cluster. The international team member reviewed forms as they were returned. Additionally, as each survey was completed, supervisors randomly selected 10 percent of the clusters and validated at least six interviews. If more than six errors were found in a cluster, the cluster was redone. All surveys were conducted between June 1 and 12, 1995.

Supervisor and interviewer guides are found in Appendix C.

VI. FINDINGS

Although the EPI in Eritrea is relatively new, the program has made major progress in a short period of time. Among the main strengths of the program are:

1. The government has equipped most static health facilities with cold chain equipment and necessary EPI supplies;
2. The government has achieved a high immunization coverage in two provinces; and
3. The majority of mothers surveyed (86 percent) are aware of the importance of childhood immunization.

Despite the strengths of the program, the review team found a number of issues that the MOH must address to be able to achieve its national goal of Universal Childhood Immunization (UCI). The key issues include the following:

1. The unavailability of immunization services at the majority of static health facilities has resulted in the overall low access of such services to the target population.

In eight of the ten provinces, less than 40 percent of infants surveyed had an immunization card. This means that complete and valid coverage could not exceed 40 percent in these provinces, even if each child had received all the required vaccinations. The unavailability of immunization cards was evident in the majority of health facilities that the team visited.

2. The management and technical capacity of the central EPI unit are very weak.

There are only three staff members in the EPI Unit at central level. The staff includes: a manager (a sanitarian by training); a logistics officer (nurse); and, a cold chain and store officer (health assistant). The logistics officer also acts as the assistant manager. In addition to the limited number of staff in the unit, the technical capacity is very limited. For the program to function to its fullest capacity, the Ministry of Health would have to increase the technical capacity of the Central EPI Unit.

3. Health education and public information activities are inadequate in terms of quantity, quality, and regional appropriateness. Moreover, political and community channels are not used effectively to involve and inform the communities about EPI, leading to a low level on awareness of the need for immunization.

All reports show that Eritrea has a large potential for community participation and social mobilization on health issues. The social organization of the country, with its provincial, local, and village assemblies (Baitos), is a strong asset.

The Village Assembly Chairman, or Vice-Chairman, is often the person in charge of health issues at the regional level. The PMO is a member of the provincial assembly. All reports mention the readiness of the local administrative structures to fully cooperate when requested to do so. In most cases, the local government structure could be very effective partners in helping the MOH reach the communities with health messages.

Currently, assemblies represent a resource rarely utilized by the health care system. Local assemblies and organizations are mostly used only on an ad hoc basis for community mobilization. For example, when vaccines arrive in outreach posts, the local administration is called to mobilize the mothers instead of being the focus of a more in-depth and regular health mobilization strategy. Implementation could be achieved by informing the local assemblies about the EPI objectives and discussing with them the means for achievement. Women and youth associations, also represented in the local assemblies, are often mentioned as potential allies in most of the provinces.

Other potential partners for social mobilization, such as religious and other traditional leaders, were never mentioned by respondents during the review. The potentials of the traditional media (singers, poets and theater groups), which were effective means of mobilization during the liberation struggle, are not tapped either.

4. There is a general shortage of trained manpower for the EPI at all levels. More than half of health workers involved in EPI have had no formal training in EPI. The majority of these health workers lack knowledge of the immunization schedule and the internationally accepted standards on contraindications for immunization.

Only one provincial medical officer has had any formal orientation on EPI. The lack of training and reorientation has contributed to the low priority given to EPI in most provinces. Doctors hold a special managerial and opinion leadership position in the system. Their lack of involvement in EPI tends to relegate the program to a lower priority position than it deserves. Furthermore, they are often barriers to the program. For example, many PMOs interviewed hold strong reservations about vaccinating a child with fever, diarrhea, or any form of illness.

Although peripheral health workers told the review team that EPI was incorporated in their basic training, less than a third had formal reorientation on EPI within the last five years. The lack of knowledge was evident when health workers were asked questions about vaccination schedules, anatomical sites for administering the various antigens, vaccine handling, or contraindication for vaccination. Clearly, the need for training and reorientation cannot be overstated.

5. While there has been a commendable effort to install cold chain equipment at all static health facilities, there is no system for maintenance and repair. The MOH lacks both the financial and the technical capacity to maintain its network of solar refrigerators.

There is no established equipment maintenance system. There are two trained technicians in the central maintenance unit in Asmara and there is one electrical technician in each province. The two central technicians were trained on installation and repair of refrigerators, particularly the Dulas model VC-150, installed by Dulas Engineering. The 10 provincially based electrical technicians were trained in November 1994 on the installation of Model NAPS solar refrigerators from Norway. They have not been trained in the repair and maintenance of the Dulas models ones and furthermore, they do not have the appropriate tools and spare parts.

While the refrigerators were in good working order in most health units, a total of 15 systems were out of order to the extent that there were some interruptions of immunization services. To date, no repairs have taken place.

6. EPI disease surveillance is very weak, resulting in an underestimation of the public health importance of vaccine preventable-diseases.

Much of the information coming from the field is raw data transmitted monthly via the provincial office to the statistical office and eventually to EPI Unit. Data collected are not analyzed anywhere in the EPI. In some provinces, copies of reports submitted to the central level could not be obtained.

7. Coordination and collaboration among donors supporting the program are very weak.

There is very little collaboration and coordination between the key supporters (UNICEF and SCF/UK) of EPI Eritrea. Instead, there is a lot of duplication of efforts and resources. This could be minimized if the MOH can be assisted to take the lead in establishing coordination.

VII. RECOMMENDATIONS

1. The central EPI Unit should be strengthened in terms of both the number of personnel and the quality of technical skills.
2. To improve access, EPI should provide immunization services at all static health facilities (hospitals, health centers, and health stations), and at all maternal and child health (MCH) sessions.
3. All health workers require training or reorientation on EPI, including: internationally accepted immunization schedules; contraindications; vaccine handling; and, injection safety.
4. The Ministry of Health should take the lead in fostering donor collaboration and coordination.

5. The government should arrange cold chain equipment repair and maintenance training courses. These should be conducted as a matter of urgency.
6. EPI disease surveillance needs to be strengthened by: (1) developing and distributing case definitions; (2) revising reporting forms for more efficient data collection; and, (3) implementing training at all levels in data analysis, utilization, and follow-up action.
7. The institutional capacity for IEC should be strengthened at national, provincial and health unit levels.
8. The MOH should develop strategies for better use of the country's excellent organization for social mobilization.

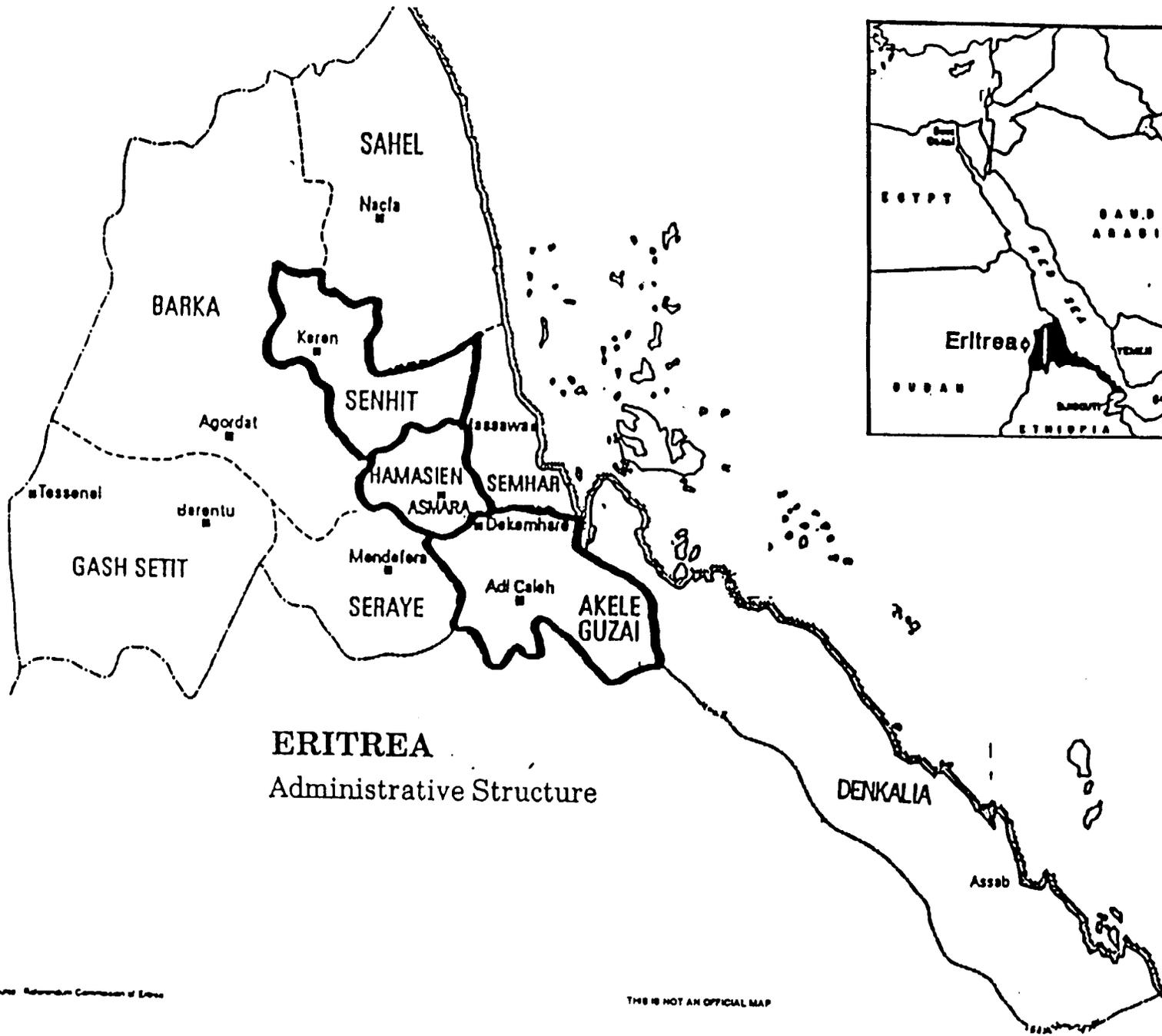
VIII. FOLLOW-UP ACTION

No additional action is necessary as far as this activity is concerned. However, the author will encourage BASICS to support EPI in this country. There seem to be opportunities and challenges for USAID, through the agency's technical contractors, to make a positive impact on child survival through EPI. EPI can also be an entry point for other MCH services.

APPENDICES

APPENDIX A

Map of Eritrea



ERITREA
Administrative Structure

Source: Subnational Commission of Eritrea

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APPENDIX B

Methodology

1995 Eritrea National EPI Coverage Questionnaire 1

1. Cluster number _____	(5)											Card	Card plus history
2. Date _____	N												
3. Study Area _____	a												
4. Range of birth dates	m												
From _____	e												
To _____	s												
Child number in cluster		1	2	3	4	5	6	7	8	9			
6. Birth date													
7. Immunisation Card	Y/N												
8. BCG	Date/+/0												
	Scar Y/N												
	Source												
9. DPT1	Date/+/0												
	Source												
DPT2	Date/+/0												
	Source												
DPT3	Date/+/0												
	Source												
10. OPV1	Date/+/0												
	Source												
OPV2	Date/+/0												
	Source												
OPV3	Date/+/0												
	Source												
11. Measles	Date/+/0												
	Source												
12. Vaccination Status	Nil												

EPI Review Report-MOH Eritrea-June 1995

	Partial											
	Fully											
13. Fully vaccinated at 1 year	+/0											
14. Fully immunised (protected)	+/0											
15. Tally of households visited												
Name of Interviewer _____						Signature _____						
Supervisor's name _____						Signature _____						

KEY: Date+/0 = copy date of immunisation from card
 + = mother reports that immunisation was given, no card available, 0 = immunisation not given
 Source: OUT = Outreach, HOS = Hospital, HC = Health Centre, PRIV = Private/non govt, Ext= External

1995 Eritrea National EPI Coverage Questionnaire 3
Reasons for Immunization Failure

1. Cluster number _____
 2. Area _____
 3. Date _____

4. Range of birth dates
 From _____
 To _____

NOTE: ASK ONLY ONE QUESTION - Why was your child not fully vaccinated?
 Mark (X) in the single most important reason, according to your judgement

Child no. in cluster		1	2	3	4	5	6	7	8	9	TOTAL
Vaccination status	Nil										
	Partial										
	Fully										
Lack of information	a. Unaware of need for vaccination										
	b. Unaware of need for 2nd or 3rd dose										
	c. Place and/or time of vaccination unknown										
	d. Fear of side reactions										
	e. Wrong ideas about contraindications										
	f. Other										
Lack of motivation	g. Postponed until another time										
	h. No faith in vaccination										
	i. Rumours										
	j. Other										

Obstacles	k. Place of vaccination too far																		
	l. Time of vaccination inconvenient																		
	m. Vaccinator absent																		
	n. Vaccine unavailable																		
	o. Mother too busy																		
	p. Family problem, including mother's illness																		
	q. Child ill, not sent																		
	r. Child ill, sent but not vaccinated																		
	s. Long waiting																		
	t. Other																		

HS = Health Station

1995 Eritrea National EPI Coverage Questionnaire 2

1. Cluster number _____ 2. Date: _____ 3. Area: _____ 4. Range of birth dates From: _____ To: _____		5. M o t h e r ' s n a m e s										TOTAL	
												Card	Card plus History
Woman number in the cluster			1	2	3	4	5	6	7	8	9		
6. Birth date of													
7. Immunization card		Yes/No											
M o t h e r	8. TT1		Date/+0										
			Source										
	TT2		Date/+0										
			Source										
	TT3		Date/+0										
			Source										
	TT4		Date/+0										
			Source										
	TT5		Date/+0										
			Source										
9. Antenata care		Yes/No											
10. Other visits to health facility during last pregnancy		Yes/No											

18

11. Delivery of baby	Home										
	HC/Hos										
	HS										
	Other										
12. Child protected against neonatal tetanus	Yes/No										

13. Tally of households visited _____

14. Name of interviewer _____ Signature _____

15. Name of supervisor _____ Signature _____

<p>Key: <u>Date/+/0</u> Date = date known and documented in card + = mother reports vaccination was given 0 = vaccination not given</p>	<p><u>Source:</u> HC = Health Centre Hos = Hospital HS = Health Station OUT = Outreach Ext = External</p>
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**1995 Eritrea National EPI Coverage Questionnaire 4
Reasons for Immunisation Success**

1. Cluster number _____
 2. Area _____
 3. Date _____
 4. Range of birth dates
 From _____
 To _____

NOTE: ASK ONLY ONE QUESTION: Congratulations for your child's completion of the infant vaccinations; why is your child fully vaccinated? Mark (X) in the single most important reason, according to your judgement.

Child no. in cluster		1	2	3	4	5	6	7	8	9	TOTAL
Vaccination status	Nil										
	Partial										
	Fully										
Informed	a. Through the CHW										
	b. Through other health staff										
	c. Via posters, etc.										
	d. Via the news media										
	e. Through family member, neighbour, etc.										
	f. Village leader										
Motivated	g. Child will be safe from disease										
	h. Child will be healthy										
	i. Have seen or had child sick with immunisable disease										
	j. Other										
Convenience	k. Close to vaccination site										
	l. Convenient vacc. days/times										
	m. Health staff kind/polite										
	n. Others										

APPENDIX C
Guidelines for Interviewers

GUIDELINES FOR INTERVIEWERS FOR THE IMMUNIZATION COVERAGE SURVEY

I. Selection of the first household in a cluster

a. Rural areas

Once in a cluster area, select a central location in the village. The location should be near the approximate geographical center of the village or area. As a first step, randomly select the direction in which the first household will be located. The most commonly used method is to spin a bottle on even ground. The direction the bottle points when it stops spinning will be the direction of the first household.

Once the direction has been selected, count the number of households which exist along the directional line, from the central location. A random number between 1 and the total number of households along the directional line will be selected. This will identify the first household to be visited. The next household will be the one whose front door is closest to the front door of the household just visited, and so on, provided the household has not already been visited.

The team will proceed until the target numbers of 7 children 12-23 months as well as 7 mothers of children 0-11 months old. If the number is not reached in a village or locality, the next nearest village or locality will be visited and the aforementioned technique used.

b. Urban areas

The methodology for identification of the first household will be the same as for the rural areas, namely: find the geographical center of the locality within which the cluster is located; spin a bottle; go along the directional line and number all the houses in that line; and then, randomly select the first house to be visited.

If it is a single house, introduce yourself and commence your interview of the respondents. If it is a story house, randomly select the floor on which to start, and so on.

II. Greetings

Once you have selected the household and introduced by the guide " greet the person you meet, after you have been introduced by the guide. Introduce yourself and explain the purpose of your visit according to the local norms. Make full use of the local guide. Tell the respondent that during the discussion he/she should feel free to ask any question.

- Ask to see the head of the household. If the head of the household is not present, ask to speak to the spouse, another adult or an older child.
- Explain what you are doing and why you will be asking them questions. Ask the ages of children living in the household.
- Determine if there are any resident children in the household aged 0-11 months, (Birth range 1/6/94 to 1/6/95) and 12 to 23 months (1/6/93 to 1/6/94) . A resident child is defined as one who spent the previous month in the household.
- The child has to be present for the interview.

III. COMPLETING CLUSTER FORMS

The cluster forms list the questions to be asked at each house and provide information about the seven children and seven mothers interviewed in each cluster. Four cluster forms will be completed.

1. Cluster form for infant immunisation
2. Cluster form for reasons for immunisation failure
3. Cluster for reasons of immunisation success
4. Cluster form for tetanus toxoid (TT) immunisation of women.

Identification of Study Area: Please write the name of the study area on top of all the coverage survey forms. There are 10 study areas in this review. They are: Akele-Guzai, Asmara, Barka, Denkalia, Gash-Setit, Sahel, Hamasien, Semhar, Senhit and Seraye. Your study area is one of these provinces. Each study area has already been stratified into 30 clusters and the cluster identification lists have been made available for your use.

Introductory data on all forms (Items 1-4)

Refer to the forms provided to you. The first four items on the four forms are identical. Complete these forms by following the guidelines below.

Item 1 Record the cluster number.

Item 2 Record the date of the interview.

Item 3 Identify the village, zoba, sub-zoba, town, etc., by referring to the cluster identification forms for the relevant study area.

Item 4 Identify the range of birth dates of children who will be evaluated or whose mothers will be evaluated in the survey. You will calculate two different ranges of birth dates:

- a. for the cluster forms for infant immunisation, the reasons for immunisation failure and/or success. Any child born from 1/6/93 to 1/6/94
- b. for the cluster form for tetanus toxoid immunisation of women. Any child born from 1/6/94 to 1/6/95
- c. For children whose birth date is not known, i.e. there is no card, no birth certificate, and the mother does not know the birth date, use the reference dates to determine the month and year of birth. Important events like:

Should be used as reference. Once the month of birth has been decided upon, use the first day of that month as the child's birth date.

- a. For the Infant Immunisation and Reasons for Immunisation Failure/Success Forms:

To determine the earliest acceptable birth date, subtract exactly 24 months from the date of interview.

24

b. After completing items 1-4 on all the three forms, visit the first household:

Use the chart below to determine which cluster form to use.

IF THERE IS A CHILD WHO IS:	
0-11 months old	Complete the cluster form for Tetanus Toxoid for Women
12-23 months old	Complete the cluster forms for Infant Immunisation and Reasons for Immunisation Failure or Reasons for Immunisation Success, as appropriate.
24 months or more or no children	Do not fill out the form, but tally the household visited on the Cluster Forms for Infant Immunisation and Tetanus Toxoid Immunisation of Women. Go to the next nearest house and begin again.

**Guidelines for Supervisors
Eritrea National immunization
Coverage Survey
June 2-14 1995**

BEFORE THE DAY OF THE SURVEY:

1. Confirm the participation of your interviewers.
2. Explain how the survey will be conducted.
3. Training should included an indepth understanding of the questionnaires and the correct procedure of field data collection.
4. Separate interviewers into teams. Each team has two persons so team members can counter check each other's work. Team members should take turns interviewing mothers and filling out forms.
5. Explain the logistic arrangements and ensure that everybody understands.
6. Have a checklist for supplies.
7. Distribute the following supplies using your checklist:
 - . Map or guide to identify the area (cluster or village) of the survey
 - . Adequate amount of all questionnaire form (supply extra form in case of damage or lost)
 - . One clipboard for each team
 - . Two pencils for each team
 - . One sharpener for each team.

DURING THE SURVEY:

1. Go over the birth range with your interviews before they depart for the field each day.
2. Visit interview teams to monitor their progress and to help solve problems as they arrive.
3. Remind the interviewers to check their questionnaire frequently to be sure they are recording responses accurately and completing all boxes.
4. When the team completes the interviews, (of the 8 children and 8 mothers) remind them to complete the cluster forms.
 - . Check that immunizations are valid and revise the immunization status if needed
 - . Determine which children were fully immunized before one year of age
 - . Complete the "Total Column".
 - . Review all forms completed daily to ensure that they are fully, accurately and eligibly completed. If you find that more than one child in a cluster is out side of the age range, the team should be asked to go back to the cluster and find and complete the information for the number of eligible children required to complete the cluster.
 - . Complete a summary form for each questionnaire (infant immunization, reasons for immunization failure, reasons for success and TT immunization for women).
 - . Enter information from completed forms on the summary for daily as you receive them
 - . Maintain a file for each cluster where all forms for that cluster will be kept.
 - . Inform interviewers that you will sport check a number of clusters randomly selected at the end of the survey to validate data they have collected.
 - . For validation, randomly select 10 percent of the clusters, using the address of the first house the interviewer has written at the back of the form, physically verify the accuracy of information collected by the interviewers using the same procedure.

APPENDIX D

Forms X1 and X2

FORM X 1

A FORM FOR A CHILD HAVING MORE THAN ONE CARD

AREA: _____

CLUSTER NUMBER: _____

CHILD NUMBER IN CLUSTER: _____

Vaccination	Card 1	Card 2	Card 3
BCG			
OPV0			
OPV1			
OPV2			
OPV3			
DPT1			
DPT2			
DPT3			
Measles			

Interviewer:

Please submit this form together with the other questionnaires to the supervisor.

Supervisor:

Please submit this form with all other questionnaires to central level.

FORM X2

A FORM FOR A MOTHER HAVING MORE THAN ONE CARD

AREA: _____

CLUSTER NUMBER: _____

CHILD NUMBER IN CLUSTER: _____

Vaccination	Card 1	Card 2	Card 3
TT1			
TT2			
TT3			
TT4			
TT5			

Interviewer:

Please submit this form together with the other questionnaires to the supervisor.

Supervisor:

Please submit this form with all other questionnaires to central level.