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**AFRICAN CHILD SURVIVAL INITIATIVE-
COMBATTING CHILDHOOD COMMUNICABLE DISEASES
MORTALITY AND USE OF HEALTH SERVICES SURVEY - REPUBLIC OF LIBERIA
BOMI, CAPE MOUNT, AND LOWER LOFA COUNTIES
1984-1985**

SUMMARY REPORT PREPARED FOR MINISTRY OF HEALTH AND USAID LIBERIA
Revised March 24, 1987

INTRODUCTION

In response to a request for technical cooperation in strengthening Liberian Primary Health Care initiatives to increase child survival, the United States Agency for International Development (USAID) through its regional African Child Survival Initiative - Combatting Childhood Communicable Diseases Project (ACSI-CCCD) is providing bilateral technical assistance. With technical direction from the Centers for Disease Control (CDC), participation of the Peace Corps, and with the active cooperation of UNICEF and WHO, the Liberian CCCD Project has the objective of reducing child mortality by 25% over the four year project period by strengthening three components of Primary Health Care (PHC): Immunization, Control of Diarrheal Diseases, and Control of Malaria.

The Mortality and Use of Health Services (MUHS) Survey was developed by CDC to provide baseline data for CCCD planning and evaluation on:

- Infant Mortality
- Child Mortality
- Under Five Mortality
- Current Immunization Coverage
- Knowledge and use of Oral Rehydration Therapy
- Knowledge and use of antimalarial drugs

With outside consultation from demographers, an anthropologist, and an expert in health education, a regional strategy was developed to carry out MUHS Surveys in three CCCD countries. With the concurrence of the Liberian Ministry of Health and USAID, Liberia was selected as one of the three countries. In Liberia the survey was carried out in November 1984 in Cape Mount, Bomi, and Lower Lofa Counties. Following a review of the survey results in January of 1985 by external consultants, a reliability survey was recommended in which a subgroup of the initial sample would be reinterviewed to determine the reproducibility of the results. The reinterview survey was carried out in May 1985. Results of both surveys were entered onto Kaypro microcomputers in Monrovia, transferred to the mainframe computer at CDC, edited, and tabulated. Mortality data were analyzed by Dr. Stan Becker, a demographer with CDC's Division of Reproductive Health. These findings were presented at the CCCD Consultative Meeting in Brazzaville in March 1986 and were provided to the Ministry of Health at that time. Other survey data were analyzed by Dr. Wilhelmina Holder, CCCD Project Manager at the time of the survey, during the summer of 1986. This report summarizes the data available to date. Further analysis is continuing and will be provided to the Ministry of Health and USAID when available.

Table 2
 INFANT, CHILD, AND UNDER FIVE MORTALITY IN THREE LIBERIAN COUNTIES
 CAPE MOUNT, BOMI, AND LOWER LOFA 1984-1985

SURVEY		MORTALITY RATES		
YEAR	INFANT DEATHS/1000 BIRTHS	CHILD DEATHS/1000 POP/YEAR	UNDER FIVE DEATHS BY AGE 5 PER 1000 BIRTHS	
1984	178	44	277	
1985	191	48	292	
ADJUSTED ESTIMATE	201	50	307	

The adjusted estimate uses Chandra Sekar Deming correction for missed events, and is expected to be closer to the truth.

Although higher under five mortality rates, up to 500/1000, have been observed in acute famine situations, the Liberian rates are among the highest in non famine, non wartime Africa. Three of every ten children born die before their fifth birthday.

CAUSES OF MORTALITY

Mortality in African infants and children represents the cumulative impact of socioeconomic underdevelopment, undernutrition, and infection. Although an early objective of the MUHS survey was to determine cause of reported deaths, differentiation of cause was less successful than hoped. It was however possible to identify certain major causes of mortality by age group, Table 3.

Table 3
 MAJOR CAUSE OF INFANT AND CHILD MORTALITY BY AGE IN MONTHS

AGE IN MONTHS	TOTAL <5 DEATHS	TETANUS	MEASLES	DIARRHEA	MALARIA	OTHER	UNKNOWN
0	273	60	5	8	12	18	170
1- 5	391	18	37	135	67	70	64
6-11	289	12	69	72	34	44	58
12-23	250	4	115	38	31	21	41
24+	177	2	85	21	23	11	35
TOTAL	1380	96	311	274	167	164	368
PERCENT	100	7	22	20	12	12	27

Although ability to identify cause of death by history is limited requiring the above data to be interpreted with caution, the diseases being addressed by the CCCD project reportedly account for over half the reported deaths.

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IMMUNIZATION

Four series of questions were utilized to ascertain mothers' knowledge of immunization and childrens' use of services. Immunization coverage was limited to that documented by a Road to Health Card.

**Table 6
KNOWLEDGE AND USE OF IMMUNIZATION SERVICE IN THREE COUNTIES**

QUESTION	NUMBER MOTHERS	PERCENT
RECOGNIZE ROAD TO HEALTH CARD	953	52.3
KNOW USE OF CARD	677	37.2
DO NOT RECOGNIZE CARD	837	45.6

IMMUNIZATION COVERAGE	CHILDREN 12-23 MONTHS OF AGE		CHILDREN 24-35 MONTHS OF AGE	
	NUMBER	PERCENT	NUMBER	PERCENT

ROAD TO HEALTH CARD		109	20.4
BCG SCAR		25	4.7
BCG VACCINATION		87	16.2
DPT1		81	15.2
DPT2		70	13.1
DPT3		9	1.7
POLIO 1		20	15.0
POLIO 2		34	6.4
POLIO 3		22	4.1
MEASLES		61	11.4
FULLY IMMUNIZED		21	3.9

AGE OF MEASLES	IMMUNIZATION	NUMBER	PERCENT
0-9 MONTHS	0-8	75	24.2
10-19	9-11	120	38.7
20-29	12-23	52	16.8
30-39	24-35	35	11.3
40+	36+	28	9.0

TT IMMUNIZATION OF PREGNANT WOMEN BY HISTORY			
NUMBER OF DOSES DURING RECENT PREGNANCY		NUMBER	PERCENT
NONE		31	1.7
ONE		288	15.8
TWO		325	17.8
TWO+		405	22.2

Immunization coverage is significantly lower than the national and CCCD targets of 80% Coverage by 12 months of age. The absence of a mothers card, a high priority, makes the estimates of TT coverage suspect.

Table 9
DIARRHEA TREATMENT PRACTICES IN THREE LIBERIAN COUNTIES

TREATMENT AS REPORTED BY MOTHERS		
SOURCE OF TREATMENT	NUMBER	PERCENT
LOCAL STORE	52	14.9
CLINIC	51	14.7
HOSPITAL	48	13.8
HOME	25	7.2
LOCAL HEALER	11	3.2
NO TREATMENT	158	45.4

Multiple and apparently conflicting responses to questions on current practices of diarrhea treatment are difficult to interpret. Further analysis is needed. Clearly knowledge and use of Oral Rehydration Therapy, ORS or Home Fluids, are limited. Low cost effective technologies to prevent and treat dehydration were not being utilized.

MALARIA

Mothers were also asked about recent febrile episodes in their children and methods of treatment, Table 10.

Table 10
FEVER IN CHILDREN IN THREE LIBERIAN COUNTIES

AGE IN MONTHS	24 HOURS		2 WEEKS	
	NUMBER	PERCENT	NUMBER	PERCENT
<6	104	3.3	146	4.6
6-11	88	2.8	132	4.1
12-23	147	4.6	208	6.5
24-35	122	3.8	189	5.9
36-47	105	3.3	162	5.1
48-59	90	2.8	132	4.1
60-71	80	2.5	107	3.4
72-83	54	1.1	79	2.5

Although there is a discordance in history of fever in last 24 hours and last two weeks, the highest rate in 12-23 month old children is consistent with what is known about malaria in Africa. Reported source of treatment reflects a high degree of home treatment, Table 11.

Table 11
SOURCE AND TYPE OF TREATMENT FOR FEVER IN LIBERIA MUHS SURVEY

TREATMENT OF FEVER	NUMBER	PERCENT
YES	516	68.8
NO	222	29.6
PLACE OF TREATMENT		
HOME	308	48.9
HEALTH FACILITY	259	34.4
OTHER	113	15.0
TRADITIONAL HEALER	61	9.2
SOMEBODY ELSE	22	2.9

APPENDIX 1

LIBERIAN MORTALITY AND USE OF HEALTH SERVICE DOCUMENTS

PROPOSAL FOR COMMUNITY BASED CCCD MORTALITY SURVEY MARCH 1984 (SEVENTH DRAFT)

SAMPLE SIZE SELECTION FOR MUHS (SEPTEMBER 18, 1984)

LIBERIA MUHS SURVEY QUESTIONNAIRES

HOUSEHOLD SURVEY QUESTIONNAIRE

MOTHER FORM

LIVE BIRTH FORM

DEAD CHILD FORM

MUHS REVIEW MEETING AT CDC JANUARY 9-11 1985

DEMOGRAPHIC EVALUATION OF THE CCCD MORTALITY AND HEALTH UTILIZATION SURVEYS BY
DOUGLAS C EW BANK, MARCH 7, 1986

EVALUATION OF MORTALITY IN THREE COUNTIES OF LIBERIA- STAN BECKER, JIM
THORNTON, AND WILHELMINA HOLDER (DRAFT July 1986)

CRITERIA FOR MUHS SURVEY FOLLOW UP - NOVEMBER 1986

UTILIZATION OF HEALTH SERVICES TABLES (DECEMBER 1986)

DEMOGRAPHIC	A1-10
LITERACY	B1-2
RADIO	C1-3
IMMUNIZATION	D1-8
DIARRHEA	E1-24
MALARIA	F1-18

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