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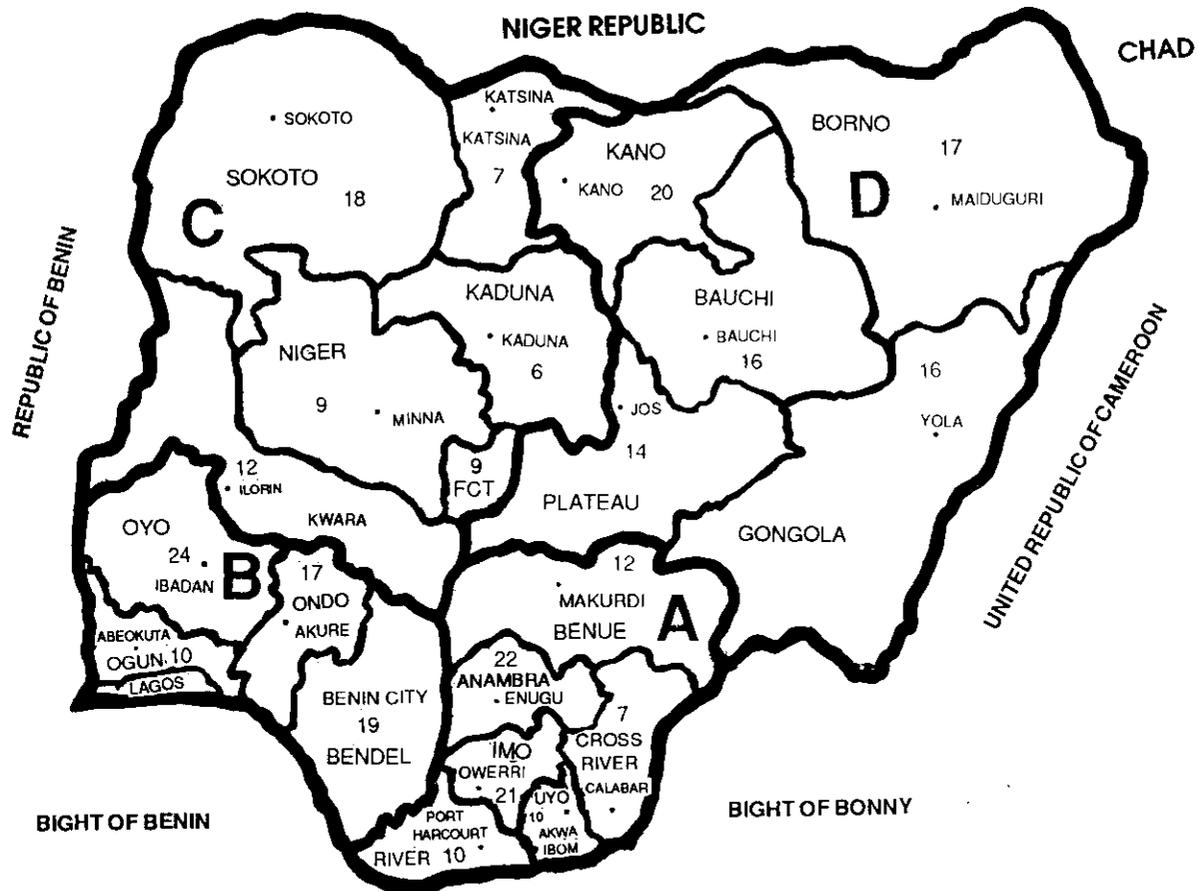
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NIGERIA COMBATting CHILDHOOD COMMUNICABLE DISEASES (CCCD) PROJECT

MARCH 1991



PRIMARY HEALTH CARE ZONES

THE NIGERIA CCCD PROJECT IS FUNDED THROUGH THE UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT (USAID) AND REPRESENTS A COOPERATIVE EFFORT BETWEEN THE FEDERAL MINISTRY OF HEALTH, WHO AND UNICEF

NIGERIA CCCD PROGRAM

ANNUAL REPORT 1990

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I. EXECUTIVE SUMMARY

A. INTRODUCTION

The Combatting Childhood Communicable Diseases (CCCD) Regional Project is a United States Agency for International Development (USAID) effort to strengthen the capabilities of African countries to reduce morbidity and mortality in children less than five years old, and to improve child health. With technical direction from the Centers for Disease Control (CDC), and in close collaboration with other donor agencies, such as UNICEF, WHO and Rotary International, the CCCD Project supports health initiatives for child survival in various Ministries of Health.

The Federal Ministry of Health (FMOH) of Nigeria, and State Ministries of Health have been working energetically to develop Primary Health Care (PHC) throughout the country. The CCCD Project works to strengthen components of PHC: the Expanded Programme on Immunization (EPI), the Controlling Diarrhoeal Diseases Programme (CDD), and the Malaria Control Programme.

Specific strategies to support these interventions are also being improved, that is: Continuing Education (CE), Health Information Systems (HIS), Operations Research (OR), and Health Education. CCCD does not function as a separate vertical programme, instead, it is part of an integrated network organized by the Federal Ministry of Health to promote PHC at every administrative level.

Historically, CCCD in Nigeria began in 1985 when the FMOH requested assistance from USAID in the development of Primary Health Care. In response to this request, a country assessment was conducted by a team composed of representatives from USAID, CDC, Pritech and UNICEF. This team interviewed officials from the Federal Ministry, State Ministries, LGAs and cooperating international agencies. As a follow-up to this assessment, a CCCD team visited Nigeria in March and April of 1986. Finally, a five year (1986 - 1991) proposal was approved for technical cooperation and activities actually began being implemented in February 1987.

Since 1987, the Nigeria CCCD Project has established itself as an active and interested partner in child survival and PHC development. CCCD recognizes the dedication of health workers throughout the country, government and non-government, and especially the leadership of the Honorable Minister of Health as key elements for successes achieved to date.

This annual report summarizes achievements in activities where CCCD has had technical and/or financial inputs, it identifies problems and possible solutions to those problems, and presents plans for the calendar year 1991.

B. NATIONAL DISEASE INTERVENTIONS

1. Expanded Programme on Immunization (EPI)

CCCD made a six million dollar grant to UNICEF, the lead agency for EPI development, for the years 1986 - 1990. The final payment of one million dollars was made in 1990. These monies were and are being used to assist the FMOH in the procuring of equipment and supplies for the National EPI.

The year 1990 saw important EPI policy changes, which bring Nigeria's EPI schedule in line with other countries in the WHO-AFRO Region. The new schedule calls for an additional dose of Oral Polio Vaccine to be given at birth, for five doses of tetanus toxoid (TT) to be provided to women of child bearing age, and targets children in their first year of life for childhood vaccines.

A Primary Health Care (PHC) Sentinel Surveillance System has been designed, and will be implemented in early 1991. In addition, the states have drafted plans for the eradication of polio and the elimination of neonatal tetanus.

All 453 LGAs provide immunization services. The number of immunizations administered has generally risen each year since 1986, resulting in higher proportions of target group populations becoming immune from the six EPI diseases. For example seven hundred thousand doses of measles vaccine were given in 1986, compared to 2.5 million doses in 1990; 2.6 million doses of DPT were given in 1986, compared to 7.2 million in 1990.

The Nigeria Demographic and Health Survey was completed in 1990 by the Federal Office of Statistics (FOS) and the Institute for Resource Development/Macro Systems, Inc. A preliminary report in March 1991 found childhood immunization coverage at 36 % for DPT3, 48 % for measles and 56 % for TT1.

The FMOH recently concluded a National Immunization Coverage Survey in which standard 30 cluster surveys were done in all the states of the Federation, and in the Federal Capital Territory, Abuja. Preliminary results show 95% of children under one received BCG, 65% of children under one received DPT3/OPV3, and 70 % received measles. Fifty-six percent of children were fully immunized, and 56 percent of mothers with children under the age of one year had been given TT2.

In 1991, CCCD will assist in setting up a nation-wide sentinel surveillance system, and will continue to strengthen and upgrade the Monitoring and Evaluation Unit of the Department of Primary Health Care. CCCD will assist states to finalize and to implement their plans for polio eradication and neonatal tetanus elimination.

CCCD will attempt to improve local supervision, increase community participation, and support training of health workers which is based upon the results of needs assessment.

Finally, CCCD will initiate cold chain assessments, and will support field trials for the inclusion of yellow fever vaccine into the Nigerian EPI.

2. Control of Diarrhoeal Diseases (CDD)

Nigeria's diarrhoea control strategy aims to reduce diarrhoea incidence by improving water and sanitation, to prevent dehydration and malnutrition through home treatment that focuses on early use of home fluids (including Sugar-Salt-Solution) and feeding, and by treatment of dehydration at health facilities with ORS.

A National Program Manager's Meeting was conducted for all state leaders in 1990. Individual state plans were drafted for accelerating CDD activities.

Since 1987, 349 professionals have received training in the clinical management of diarrhoea or in some phase of program management. The clinical training agenda and materials were partially reviewed and updated for one PHC zone. Finally, agreement was reached with WHO on a cooperative activity to improve preservice training materials for medical schools.

ORS storage and distribution was studied in four states. Sixty three percent of the health facilities surveyed had no ORS sachets in stock.

During 1991, CCCD will help establish a Diarrhoea Treatment Unit (DTU) in PHC Zone C and improve the quality of teaching in the zonal DTUs. A national household survey will be conducted to estimate morbidity and mortality related to diarrhoeal diseases. Special attention will be directed to correcting the serious problems in ORS supply and distribution.

The CCCD Focus States will emphasize improving CDD activities. One DTU will be developed in each of the states and ORS distribution will be monitored carefully. An Oral Rehydration Therapy (ORT) Unit or Corner will be established in each hospital or clinic in all model LGAs. ORT Corners will also be developed

in at least 15 "non-model" LGAs in each state. Finally, training of health workers will be done through the Continuing Education Program.

3. Malaria

The National Malaria and Vector Control Division continued to take the lead in country-wide intervention activities. The National Malaria Technical Committee met semi-annually and reviewed malaria therapy efficacy studies and other research data. The National Malaria Surveillance Network, consisting of multidisciplinary teams from four Nigerian universities and the national office of the National Malaria and Vector Control Division, continued to monitor malaria resistance.

CCCD assisted with, and participated in, the International Workshop on the Current Treatment and Prevention of Malaria held at the University of Calabar in 1990.

CCCD helped develop a new Malaria Training Module for mid-level and peripheral health workers which was pretested in Niger State, and which was approved for use throughout the country. The African Regional Health Education Centre (ARHEC) Workshop, held in Oyo in 1990, focused on Health Education for Malaria Control.

Finally, in 1990 CCCD developed a study of pyrethrum impregnated bednets which will be implemented in 1991 - 1992.

During 1991, CCCD will continue to support the Surveillance Network and the activities of the National Committee. Information and leadership from these organizations is expected to result in an update of the Guidelines For Malaria Control in Nigeria.

CCCD will support training mid-level and peripheral health workers in the application of the National Guidelines, and will support the training of selected staff in laboratory identification of malaria parasites.

C. CCCD FOCUS STATES

Six states were selected in 1990 as focus areas for CCCD, providing an opportunity to demonstrate and test strategies and approaches designed to improve child survival. Demographic and epidemiological data were collected and Needs Assessment Surveys were done in each of the six states. Results allowed health needs and approaches to be prioritized. State and LGA leaders, in conjunction with CCCD, developed detailed workplans, with implementation and operational components.

During 1991, CCCD will provide technical assistance for implementing state and LGA workplans. The objectives are to:

- improve state-wide Health Information Systems
- improve or initiate a continuing education programme, utilizing the state School of Health Technology
- accelerate key interventions (EPI, CDD, and Malaria) in at least one LGA.

D. SUPPORT STRATEGIES

1. Health Information Systems (HIS)

The Monitoring and Evaluation (M&E) Unit, Department of Primary Health Care, has received intensive technical and material assistance from CCCD. CCCD has assisted the M&E Division and the EPI/CDD Programme in using computers to monitor programme progress. CCCD has developed a computer program for routine disease reporting, assisted the Ministry in analysis of coverage surveys, and has trained 92 federal and state health staff in the use of computer software.

Computers were installed and training provided to staff in all four Zonal PHC offices and in two State Ministries of Health through CCCD assistance.

A new technical publication, the Nigeria Bulletin of Epidemiology, has been launched and will become a key instrument for providing feedback to the field, and for disseminating data relevant for programmes.

During 1991, CCCD will assist in the development, implementation and evaluation of a Federal PHC Sentinel Surveillance System, gathering data on measles, tetanus, polio, pertussis, malaria, diarrhoea and acute respiratory infections. Training will be provided to federal, zonal and state Ministry of Health personnel in survey and data analysis methods, in addition to the ongoing training in data entry and analysis.

Assistance will be provided to the Department of Planning, Research and Statistics for the development of a Ministry-wide integrated HIS.

The six Focus States will receive computer equipment and training for upgrading HIS activities. Several Peace Corps volunteers will work to improve HIS.

2. Operations Research (OR)

Efforts continued in 1990 to integrate the work of the CCCD Research Review Committee into the FMOH. The FMOH now fully supports the Secretariat to the committee.

Guidelines for protocol development and submission were revised in 1990 and distributed to professional institutions and officials throughout Nigeria.

Since 1987, the CCCD Research Review Committee has reviewed 85 proposals, and 36 have been accepted for funding. The majority of the studies concern malaria, immunization or diarrhoea control activities.

In 1991, CCCD will continue to support the Research Review Committee, and will develop training and promotional activities to increase the number and quality of proposals being submitted. The new funding ceiling for a study will be 5,000 US dollars.

Finally, efforts will continue to integrate the CCCD Research Review Committee into the FMOH. Mechanisms to ensure application to ongoing child survival operations will be sought.

3. Continuing Education

The Niger State Continuing Education Programme was established in 1989. A Continuing Education Unit (CEU) was established at the Minna School of Health Technology. Nine modules for training LGA Managers in priority child survival and managerial topics were adapted to Nigeria circumstances, and a Facilitator's Guide was prepared for each module. In 1990, a new module on Malaria was added to these training materials. Leaders from seven of the ten LGAs in Niger State have been trained in this programme.

Positive impact from this programme was documented in 1990. Pre- and post training assessments of the skills of LGA Managers who participated in the training course showed significant increases in ability in tasks such as diagnosing and treating dehydration. Supervisors in trained LGAs were better able to fulfill their supervisory roles in such ways as preparing workplans. Finally, health workers who had been trained were more competent in providing treatment for dehydrated children.

The Niger State model of Continuing Education will be replicated in five states in 1991. Additional technical and supervisory/management skills training modules will be developed on priority PHC topics.

4. Health Education

4. Health Education

The Africa Regional Health Education Centre (ARHEC) conducted its fourth International Workshop in 1990 in collaboration with CCCD and the University of North Carolina. The theme of the Workshop was Health Education for Malaria Control, and participants included Child Survival programme managers and policy makers from one LGA in each PHC Zone of Nigeria. A job site evaluation of workshop effectiveness is being conducted.

HealthCom has also been active in promotion of health education for child survival in Nigeria. At the federal level, HealthCom has collaborated with, and provided ongoing technical support to, the FMOH Health Education Unit. State level support had been directed primarily to the six states in PHC Zone C. Niger State has been an emphasis area for HealthCom activity. During 1990, HealthCom conducted an intensive health education/communication programme in two LGAs in Niger State

In 1991, ARHEC, HealthCom, CCCD and the FMOH Health Education Unit will meet to define the role of each organization and develop plans for work in the CCCD Focus States.

5. Other

The CCCD Kaduna Office has increased its capacity to assist Northern Nigeria, and specifically the CCCD Focus States, by adding professional staff and adding office/training space. A fourth epidemiologist is being added to the Kaduna team. The Kaduna office provided leadership for the preparation of the CCCD Focus State activities in 1990, including the development of Needs Assessment Survey instruments.

The Lagos epidemiologist assisted the FMOH's Department of Disease Control and International Health in investigating a large outbreak of paracetamol syrup poisoning.

A National Steering Committee was organized for the development of Acute Respiratory Infection (ARI) intervention activities for Nigeria.

National Workplans were developed that are now being used by the FMOH and donor agencies. The format of these plans will be followed in future planning exercises.

American Peace Corps representatives worked with CCCD staff in preparing for the reintroduction of volunteers into Nigeria. The volunteers will assist in CCCD Focus State activities.

II. BASIC INDICATORS

A. Sources of Data

It is extremely difficult, if not impossible, to obtain accurate demographic and health status data in Nigeria. There is no national vital registration system. Incomplete participation and problems with accuracy of existing disease and program reporting systems often cause incorrect figures to be used. Nonetheless, the following sources were reviewed to produce the statistics in this section as "best estimates:"

1. National Population Bureau, Lagos Publication, 1988
2. Children and Women in Nigeria, A Situation Analysis 1990, UNICEF
3. World Health Statistics Quarterly, Vol. 40, 1987
4. UNDP, Development Cooperation, Nigeria, 1989

Some of these sources use results from the 1980/81 Nigeria Fertility Survey to derive rates. However, that survey produced data that are believed to more accurately reflect those living in the urban settings.

B. Population

1. Total Population:

1989	111,700,000
1990	115,400,000
1992 (projected)	122,900,000

2. Children:

Under one (4.4%)	5,100,000
Under five (18%)	20,700,000

3. Women:

15 - 49 years (24%)	27,700,000
No. live births (48/1000)	5,500,000

C. Mortality

The official Infant Mortality Rate (IMR) is 85 / 1,000 live births, though it is probably higher in rural areas. The IMR has declined over the past 25 years, having been estimated at 109 / 1,000 live births in 1969.

The Under Five Mortality Rate is approximately 145 / 1,000 live births.

The Maternal Mortality Rate is estimated at 15 / 1,000 live births.

The Crude Death Rate is 16 / 1,000 population. Life expectancy at birth is 54 years.

D. Other

Access, as measured by living within 4 kilometers of health services, is estimated to be 30% for rural populations and 75% for urban populations. Thirty percent of Nigerians are projected to live in urban settings by 1992.

The adult literacy rate for Nigeria is estimated to be 54% for males and 31% for females.

In 1990, 1.46% of the Federal Government expenditures was designated for health and 3.12% for education.

It is estimated that 60% of the urban population in Nigeria has access to potable water, while only 20% has access in the rural areas.

III. EXPANDED PROGRAMME ON IMMUNIZATION (EPI)

A. UNICEF Grant

A significant form of assistance to the development of the Nigerian EPI during the past five years (1986-1990) has been a six million dollar grant from CCCD to UNICEF. As the leading international agency for assistance to the FMOH during this period of time, UNICEF was able to use these funds in a way that strengthened many elements of the programme at different administrative levels.

Rate of expenditures was as follows (in US dollars)

1986	327,800
1987	2,342,900
1988	340,500
1989	496,200
1990	1,638,800
1991 (anticipated)	853,800

TOTAL	6,000,000

Some key uses of the grant are outlined below (in US dollars):

Supplies and Equipment (cold chain, etc.)	About 2,200,000 or 37%
Transport (vehicles, etc.)	About 1,500,000 or 25%
Training	About 500,000 or 8%
Communications and Social Mobilizations	About 1,000,000 or 16%
Monitoring and Evaluation	About 400,000 or 7%
Project Support	About 400,000 or 7%

B. Increases in Reported Immunizations

EPI services are being provided in all established LGAs throughout the country. Within LGAs there has also been an intensive effort to increase access to EPI services:

	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
No. static centers	810	4158	5922	7622	10000	12000
No. outreach facilities	444	1944	3744	4874	15000	24000

A number of outreach facilities added in 1990 were as a result of the accelerated activities relating to the Year of Universal Childhood Immunization (UCI). It is not clear whether these facilities will be able to continue to provide services in the future.

The number of immunizations administered, as routinely reported from health facilities, has generally increased annually in Nigeria, coinciding with improvements in access (Figures 1 - 5).

Fig. 1

FEDERAL REPUBLIC OF NIGERIA
 NUMBER OF IMMUNIZATIONS ADMINISTERED
 BY ANTIGEN BY AGE GROUP BY YEAR

ANTIGEN	0 - 11 MONTHS				
	1986	1987	1988	1989	1990
BCG	1,264,701	1,637,358	2,860,830	2,110,094	3,262,537
DPT-1	1,146,501	1,504,516	2,471,977	1,947,807	3,379,487
DPT-2	848,797	1,145,853	1,867,163	1,544,411	2,792,808
DPT-3	662,786	936,672	1,495,853	1,383,070	2,672,393
TOTAL	2,658,084	3,587,041	5,834,993	4,875,288	8,844,688
POLIO-1	1,154,532	1,489,955	2,476,267	1,857,773	3,397,402
POLIO-2	844,011	1,138,725	1,848,413	1,529,042	2,764,881
POLIO-3	667,591	912,070	1,473,011	1,391,074	2,704,231
TOTAL	2,666,134	3,540,750	5,797,691	4,777,889	8,866,514
MEASLES	710,200	1,078,225	1,797,515	1,566,740	3,124,836

ANTIGEN	1986	1987	1988	1989	1990
TT1	886,849	1,204,743	1,794,501	1,547,093	2,632,370
TT2	649,252	825,856	1,263,033	1,140,229	2,019,655
TOTAL	1,536,101	2,030,599	3,057,534	2,687,322	4,652,025

SOURCE : FMOH, EPI/CDD UNIT

Fig. 2

DPT: Doses < 12 Months and Total Doses
Nigeria, 1986 - 1990

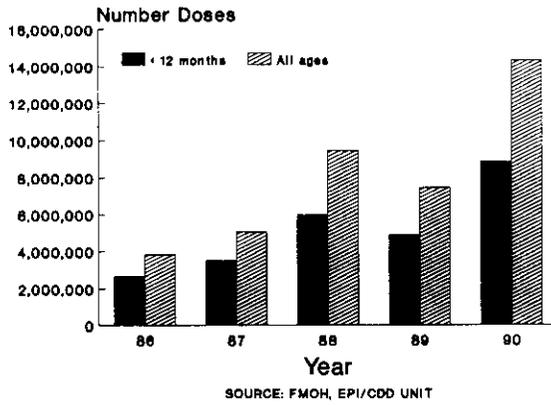


Fig. 3

DPT: First and Third Doses, < 12 Months
Nigeria, 1986 - 1990

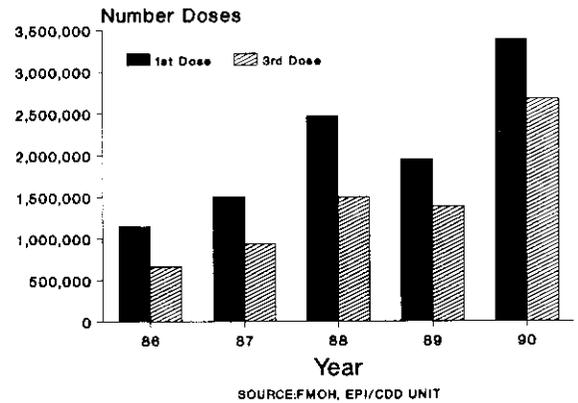


Fig. 4

Measles Vaccinations: Doses < 12 Month
and Number of Live Births
Nigeria, 1986 - 1990

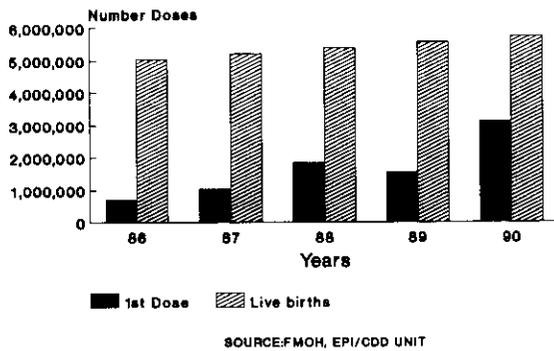
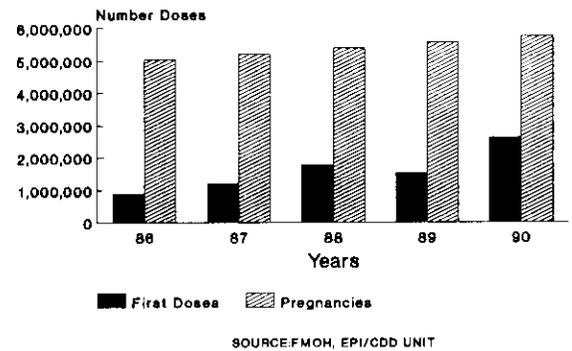


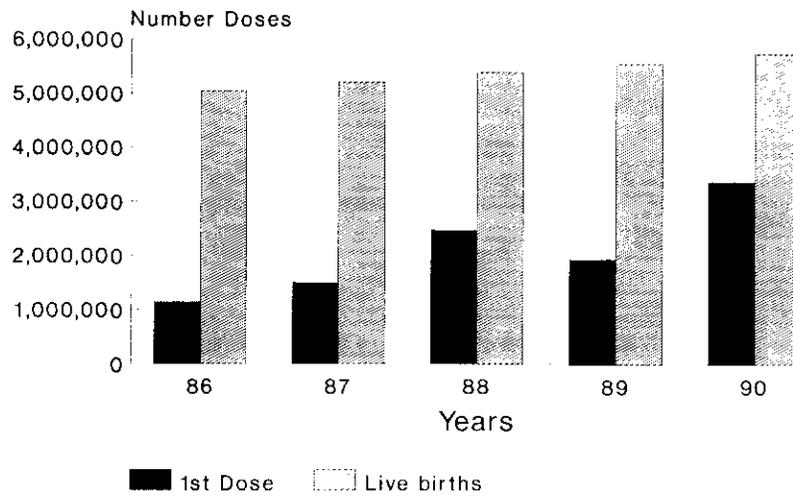
Fig. 5

Tetanus Toxoid: First Doses
and Number of Pregnancies
Nigeria, 1986 - 1990



With more doses of vaccine delivered, coverage of target populations has expanded (Figures 6 - 8).

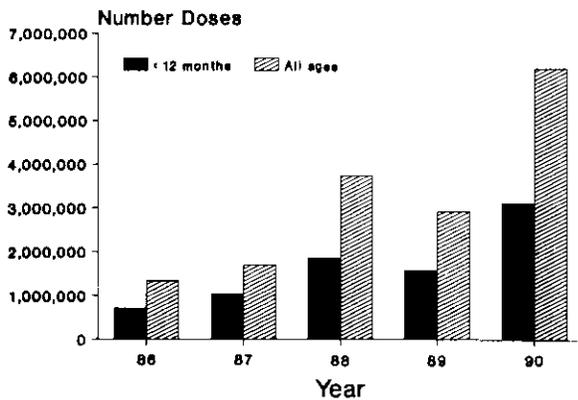
Fig. 6
**DPT: First Doses < 12 Months
 and Number of Live Births**
 Nigeria, 1986 - 1990



SOURCE: FMOH, EPI/CDD UNIT

Fig. 7

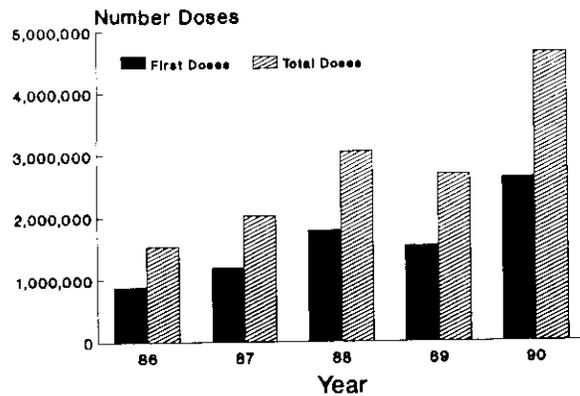
**Measles Vaccinations: Doses < 12 Months
 and Total Doses Nigeria, 1986 - 1990**



SOURCE: FMOH, EPI/CDD UNIT

Fig. 8

**Tetanus Toxoid: First and Total Doses
 Given to Pregnant Women Nigeria, 1986-90**



SOURCE: FMOH, EPI/CDD UNIT

C. Coverage Surveys

1. Nigeria Demographic and Health Survey

The Nigeria Demographic and Health Survey was completed in 1990 by the Federal Office of Statistics (FOS) and the Institute for Resource Development/Macro Systems, Inc. Reports are still preliminary. Figure 9 shows the percentage of mothers who had received at least one tetanus toxoid injection in the five years preceding the survey, and other information on pre-natal care.

Fig. 9

Characteristics of Mothers FREQUENCY	Tetanus Toxoid %	Prenatal Doctor %	Prenatal Nurse %	Assista Doctor %	Assista Nurse/M %	Number of Births
Age Group						
20	45.4	28.2	33.7	8.4	23.5	450.2
20-34	58.6	41.4	44.7	12.0	30.8	5807.5
35+	51.6	51.6	33.6	43.5	11.3	31.0
Residence						
Urban	77.0	60.8	61.5	21.5	53.0	2419.2
Rural	47.4	29.5	36.2	7.4	20.6	5587.7
Health Zone						
Zone A	66.3	37.3	55.2	11.1	43.6	2294.8
Zone B	76.4	60.0	63.0	23.4	59.9	1762.0
Zone C	44.9	32.4	31.1	5.6	9.9	2112.6
Zone D	37.9	28.4	25.9	8.0	9.2	1837.5
Level of Education						
No education	43.8	28.7	32.0	6.7	15.0	4816.3
Primary	71.0	44.9	60.2	13.8	46.5	2059.3
Secondary	83.1	71.1	64.5	28.1	65.3	1032.2
Higher	84.8	79.9	64.3	38.4	81.5	99.2
Number of Children						
1	59.3	42.5	43.7	15.2	34.6	1448.3
2-3	58.2	41.6	44.7	11.7	29.6	2486.1
4-5	57.3	40.4	45.4	11.3	30.3	1971.7
6+	51.2	32.0	41.5	9.5	28.6	2100.7
Total	56.4	39.0	43.8	11.6	30.4	8007.0

Source: Nigeria Demographic Health Survey 1990

Figure 10 shows the percentage of children aged 12-23 months with health cards, and the percentage who have received each vaccination according to the vaccination card or the mother's report. It also indicates place of residence and the level of the mother's education by background characteristics.

The coverage rates for children are lower than anticipated, but they are higher than expected for mothers. The urban vs. rural comparisons are striking, as is the coverage in the northern Zones (C and D) compared to the southern Zones (A and B). Mother's education appears to be an important factor in gaining higher coverage.

Fig. 10

Characteristics of Children FREQUENCY	Health Cards %	BCG %	DPT 1 %	DPT 2 %	DPT 3 %	Polio 1 %	Polio 2 %	Polio 3 %	Measles %	All %	No. of Children
Sex											
Male	32.0	62.1	60.5	48.9	35.5	60.9	48.9	35.7	47.6	32.0	666.0
Female	39.6	63.8	61.5	50.7	36.4	62.3	51.0	36.4	49.0	31.1	690.1
Residence											
Urban	44.1	81.4	80.3	74.6	58.9	81.1	74.9	59.1	68.0	51.8	414.7
Rural	32.2	54.9	52.5	39.0	25.8	53.0	39.0	25.8	39.6	22.6	941.4
Health Zone											
Zone A	40.7	73.3	70.4	59.3	50.9	70.4	59.7	50.9	54.4	43.2	388.0
Zone B	43.6	83.3	81.3	70.4	54.1	81.3	70.4	54.5	65.9	47.7	279.1
Zone C	37.1	53.9	52.2	37.5	21.7	52.2	37.5	21.7	41.2	19.6	350.0
Zone D	22.7	43.8	42.6	34.8	18.5	45.0	35.0	18.5	34.1	17.0	339.0
Level of Mother's Education											
No education	26.4	47.7	45.5	34.3	20.6	46.0	34.4	20.6	35.2	17.7	791.9
Primary	48.6	79.1	77.5	62.7	45.4	78.6	63.1	45.4	58.5	38.1	336.3
Secondary	49.9	91.6	89.8	83.7	74.4	89.8	83.7	75.0	79.2	69.5	208.0
Higher	50.5	00.0	00.0	00.0	81.4	100.0	100.0	81.4	71.7	71.7	20.0
All Total	35.9	63.0	61.0	49.8	35.9	61.6	50.1	36.0	48.3	31.5	1356.2

Source: Nigeria Demographic Health Survey 1990

2. National Immunization Coverage Survey

A National Immunization Coverage Survey was recently concluded by the FMOH, in conjunction with State and Local Ministry Staff.

Standard 30 cluster surveys were conducted in each of the states, plus the Federal Capital Territory (Abuja). Some very preliminary results are seen in Figures 11 - 17.

"Crude data" was defined as "data from history or card whether it is valid or not".

Coverage rates are increasing. This is the most rewarding lesson learned from these surveys. Health personnel at all levels should feel satisfied with this achievement and should be encouraged not to lose the momentum or intensity of activities during 1991.

Fig. 11
EPI COVERAGE RATES BY ANTIGEN
NIGERIA FEBRUARY, 1991

	IMMUNIZATION RATES (%)	
	CRUDE: UP TO 2YRS	CRUDE: BEFORE 12 MONTHS
BCG (SCAR)	95.9 (87.5)	95.9 (87.5)
OPV3/DPT3	82.5	65.2
MEASLES	85.6	70.0
FULLY VACCINATED	78.5	56.2

SOURCE : NATIONAL EPI COVERAGE SURVEY FEBRUARY, 1991

Fig. 12
 EPI Coverage Rates By Antigen
 Coverage to 12 Months, 12-23 Mo Cohort
 Crude Data

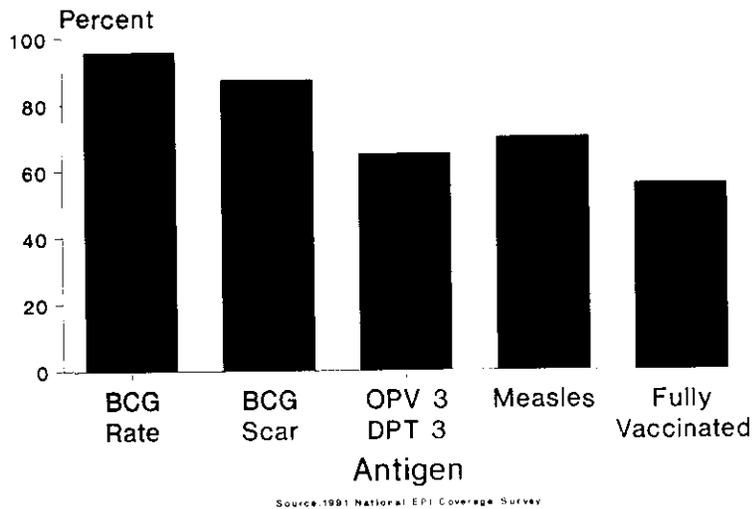


Fig. 13
 OPV - Third Dose - By First Birthday
 Crude Data February 1991,

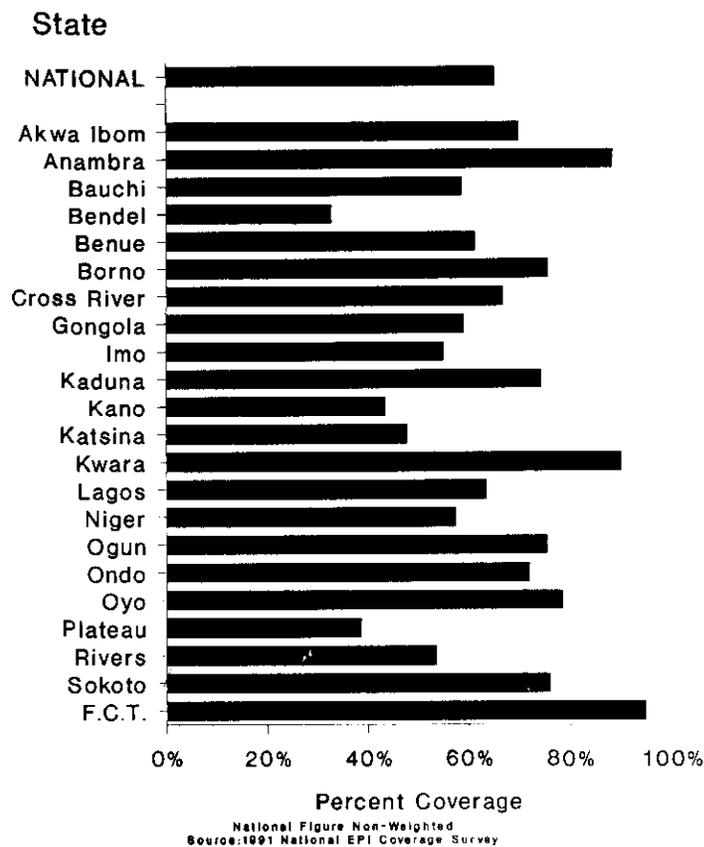


Fig. 14
DPT - Third Dose - By First Birthday
Crude Data February, 1991

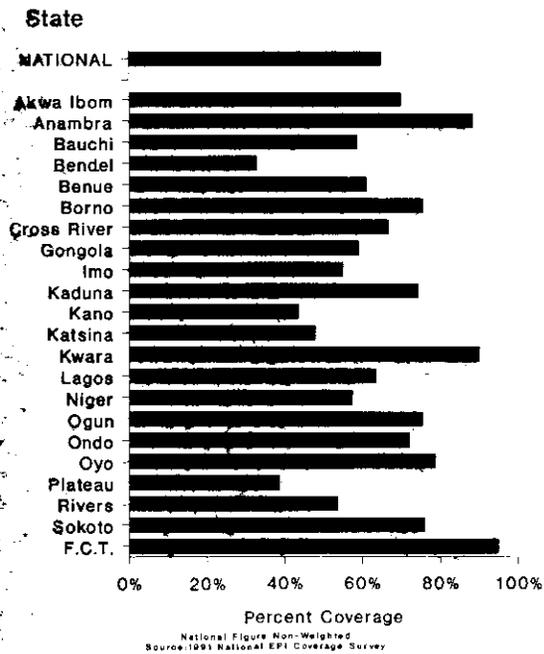


Fig. 15
MEASLES BY FIRST BIRTHDAY
Crude Data February, 1991

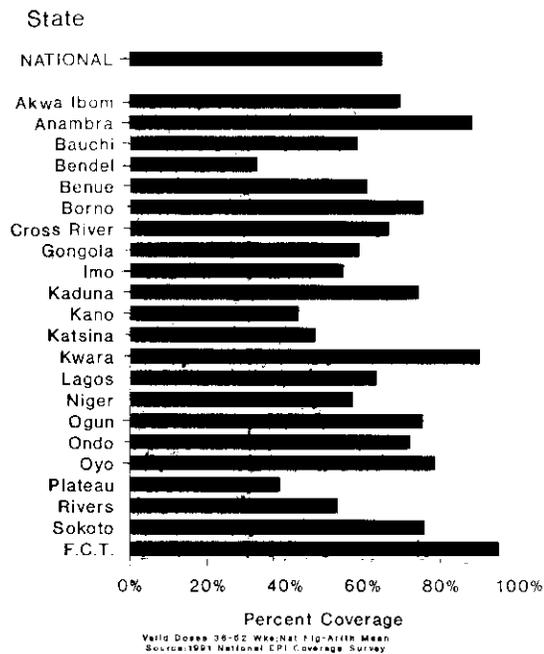


Fig. 16
Fully Immunized by First Birthday
Measles-36-52 Wks, DPT/OPV-3 Wk Interval
DPT1/OPV1- > 6 Wks, BCG - < 53 Weeks

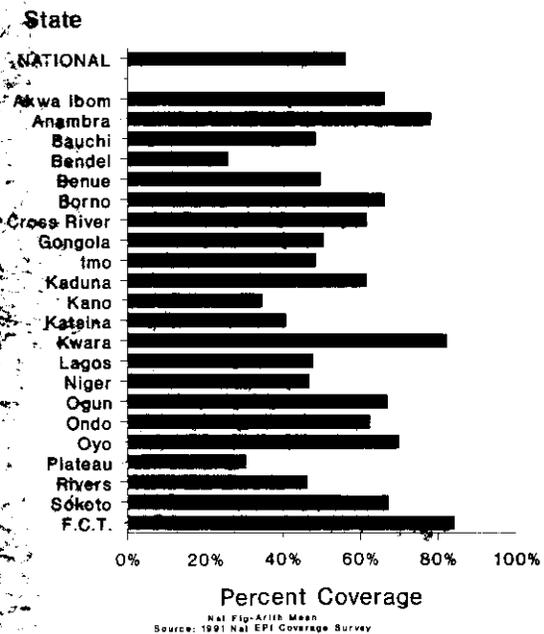
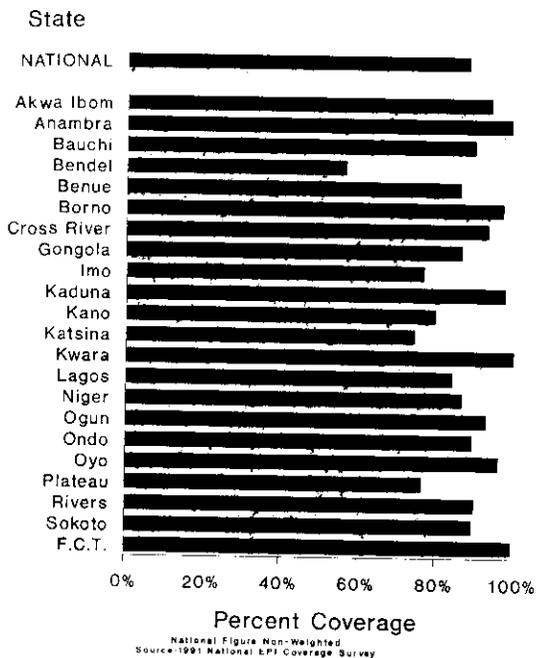


Fig. 17
Card Retention - By First Birthday
Crude Data February, 1991



D. Quality Issues

1. Immunization Schedule Changes

In 1990 the National Council on Health approved the following modifications to Nigeria's immunization schedule:

- . An additional dose of OPV to be given at birth ("Polio Zero")
- . All childhood immunizations to be administered prior to the first birthday.
- . Five doses of TT to be given: (a) as early as possible during pregnancy or at first contact; (b) at least 4 weeks after TT1; (c) 6 to 12 months after TT2 or during the next pregnancy; (d) at least 1 year after TT3 or during the next pregnancy; and (e) at least 1 year after TT4 or during the next pregnancy.

The target population for the revised TT schedule is women of child bearing age, as opposed to the old target group of only pregnant women.

These immunization policy changes now bring Nigeria in agreement with WHO guidelines, in fulfillment of recommendations from the 1989 In-Depth Programme Review.

2. Shift of Responsibility to Local Government Areas

Recently the responsibility for delivery of PHC services, including EPI, was shifted to the LGAs. Approximately three months ago elections were also held at the LGA level, generally bringing new people into decision making positions. LGA leadership is now probably the single most important determinant of future quality of EPI services in Nigeria. Resources at LGAs need to be committed to EPI. Programme policies, including the new schedule changes, have to be properly incorporated into LGA PHC services. State plans, such as the approaches to be taken to eradicate polio and eliminate neonatal tetanus, need to find LGA application. Adequate supervision of facility worker performance must emanate from LGA leadership. An important CCCD challenge during 1991 is to monitor LGA activity and provide needed program management training where necessary.

3. Logistical Needs

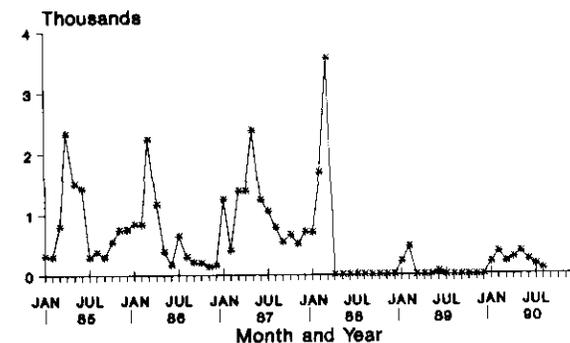
Maintaining adequate logistical support is another key determinant of future quality of EPI services. Needs Assessments in the six CCCD Focus States have demonstrated pervasive problems in maintenance of transport and EPI equipment. Many pieces of equipment require replacement and numerous staff need training in

proper maintenance procedures. Specialists in logistics are needed to study these problems and make practical suggestions for improvement.

E. Impact

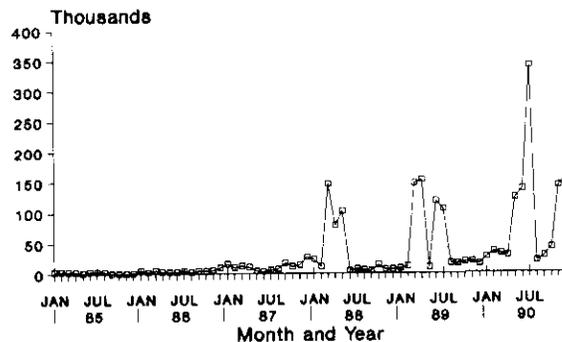
FMOH personnel are beginning to collect state specific disease data to determine if program impact can be verified. Examples from three states for reported cases of measles are as follows: Sokoto State (Figures 18 - 19), Gongola State (Figures 20 - 21) and Ondo State (Figures 22 - 23).

Fig. 18
MEASLES CASES BY MONTH
SOKOTO STATE JAN '85 - DEC '90



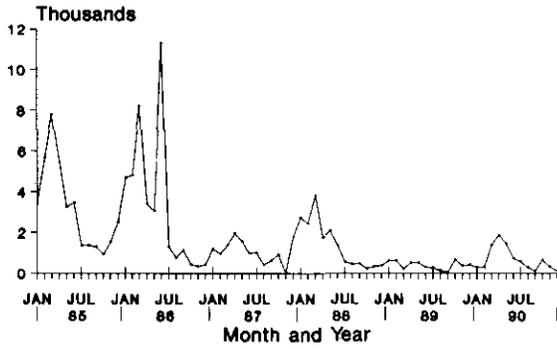
Source: State Ministry of Health, February 1991

Fig. 19
MEASLES IMMUNIZATION BY MONTH
SOKOTO STATE JAN '85 - DEC '90



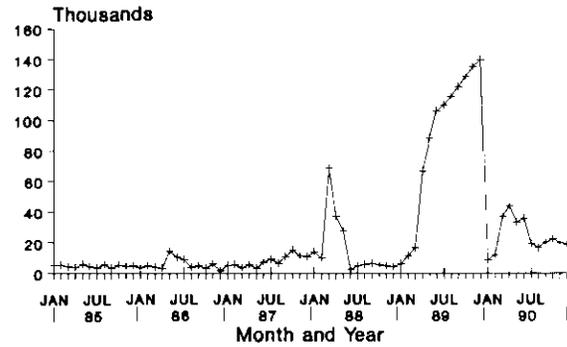
Source: State Ministry of Health, February 1991

Fig. 20
MEASLES CASES BY MONTH
GONGOLA STATE JAN '85-DEC '90



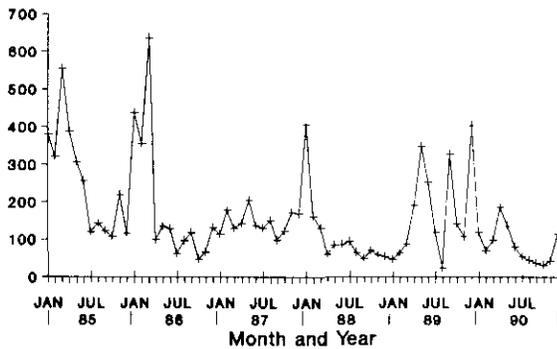
Source: State Ministry of Health,
 February 1991

Fig. 21
MEASLES IMMUNIZATION BY MONTH
GONGOLA STATE JAN '85-DEC '90



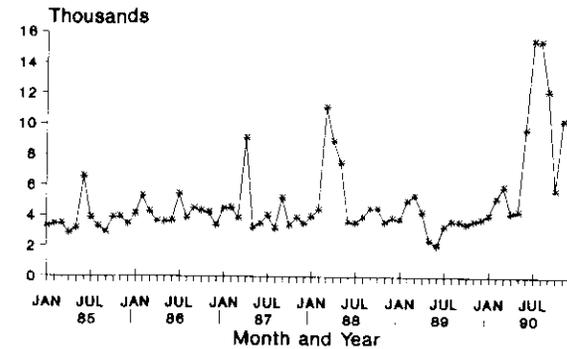
Source: State Ministry of Health,
 February 1991

Fig. 22
MEASLES CASES BY MONTH
ONDO STATE JAN '85 - DEC '90



Source: State Ministry of Health,
 February 1991

Fig. 23
MEASLES IMMUNIZATION BY MONTH
ONDO STATE JAN '85 - DEC '90



Source: State Ministry of Health,
 February 1991

F. Other Achievements

1. Technical improvements have been made to the Monitoring and Evaluation Unit of the Department of Primary Health Care, increasing significantly the capacity to analyze EPI data.
2. State plans have been drafted for the eradication of polio and the elimination of neonatal tetanus.
3. A PHC Sentinel Surveillance System, with major emphasis upon EPI, was designed and approved in 1990.
4. A National EPI Workplan for 1991 was prepared, with implementation and operational components, and accepted by the FMOH as well as other donors.

G. Future Plans

1. Institute a nation-wide Sentinel Surveillance System, following the approved protocol.
2. Utilize survey, sentinel and routine data to identify areas of weak programme performance and work with the FMOH to provide additional technical assistance to those areas.
3. Provide help for training of facility workers in at least 10 states, based upon priority subjects revealed from Needs Assessments.
4. Initiate surveys of cold chain and EPI equipment.
5. Support field trials for the introduction of yellow fever vaccine into the Nigerian EPI.
6. Improve local supervision and increase community participation.
7. Assist states to finalize and implement plans for the eradication of polio and elimination of neonatal tetanus.

IV. DIARRHOEAL DISEASE CONTROL (CDD)

A. Ongoing Activities

Nigeria continued to conduct a three-phased diarrhoea control strategy through 1990, consisting of the following:

1. Prevention

The reduction in diarrhoeal disease incidence through improved availability and use of potable water and improved environmental sanitation.

2. Community Treatment of Diarrhoea

Home treatment of diarrhoea to prevent dehydration with SSS and increased amounts of other home fluids. Continued breastfeeding or early introduction of appropriate food to prevent malnutrition due to diarrhoea.

3. Health Facility Treatment

Health facility treatment of dehydration with Oral Rehydration Salts (ORS) and mother education in Sugar, Salt Solution (SSS) fluid preparation and administration.

In practice, there was little action taken to promote preventive practices in 1990.

There are few figures available to measure any improvements in community treatment. Perhaps state programme managers who participated in the National Programme Manager's Meeting in 1990 were able to return and better educate mothers in various communities. However, it is safer to assume that findings from the 1989 In-Depth Review were probably still applicable in 1990. Some pertinent findings from that In-Depth Review are as follows:

1. 16% of children under five suffered from diarrhoea within a 2 week period, according to a 30 cluster survey in 16 LGAs. Annual episodes were estimated to be 4.3 per child.
2. Only 36% of mothers reported use of SSS at home. Approximately half the children were taken to health care providers for treatment.
3. 73% of mothers reported offering the same or less fluid to a child with diarrhoea.

A National Demographic and Health Survey was conducted in 1990. Preliminary results from interviews held with mothers of children under 5 years of age concerning diarrhoea are as follows (Figure 24):

Fig. 24

Characteristics of Children	In Past 24 Hours %	In Past 2 Weeks %	ORS Packets %	Home Solution %	Other %	Children Under 5
Age Group						
6 months	6.3	11.4	12.2	21.2	23.5	731.3
9-11 months	12.1	25.9	13.3	23.5	28.3	796.5
12-23 months	13.7	28.1	11.2	31.2	33.4	1356.2
24-35 months	9.7	20.0	10.7	23.8	25.2	1281.5
36-47 months	3.3	10.1	15.1	18.1	26.9	1397.8
48-59 months	3.5	9.2	18.4	23.8	25.5	1322.8
Sex						
Male	8.4	17.7	11.7	24.6	27.7	3334.3
Female	7.4	16.9	13.7	25.9	29.3	3551.8
Residence						
Urban	4.5	11.9	25.1	43.4	49.3	2145.5
Rural	9.4	19.7	9.3	20.2	22.8	4740.6
Health Zone						
Zone A	4.7	12.4	9.5	34.5	36.0	2027.5
Zone B	2.7	8.6	17.6	38.7	42.3	1555.0
Zone C	11.6	25.1	11.3	20.6	23.2	1743.1
Zone D	13.2	23.6	14.8	19.5	24.6	1560.5
Level of Mother's Education						
No education	10.0	19.8	8.7	18.0	21.2	4056.7
Primary	6.0	15.7	22.0	38.8	41.0	1801.9
Secondary	3.4	10.3	17.3	43.6	47.6	931.8
Higher	1.2	8.3	31.1	49.6	80.7	95.7
All Total	7.9	17.3	12.7	25.2	28.5	6886.1

Source : Nigeria Demographic Health Survey 1990

Results indicate a low percentage of mothers are using home fluids and ORS. However, more mothers in urban areas appear to be understanding ORT messages. Northern zones have higher rates of reported diarrhoea and lower reported use of home solutions than the southern zones.

In the last 14 months, clinical management training was provided at two different sites. On a national scale, however, the findings below from the 1989 In-Depth Review probably still apply:

1. Many health centers and hospitals did not have ORS sachets.
2. Only about 40% of health centers and hospitals used ORS/SSS as a first-line treatment.
3. There was a harmful overuse of drugs used for treatment.
4. Acceptable health worker performance at facilities was disappointing, with most cases of diarrhoea being improperly managed.

B. Quality Issues

1. ORS

The ORS storage and distribution system requires upgrading before significant changes can occur. CCCD supported a four state survey in 1990 and found that of 27 facilities surveyed, 63% had no ORS sachets in stock (Figure 25) and 37% had not received any stock in over 6 months (Figure 26).

Fig. 25
Existing Stock

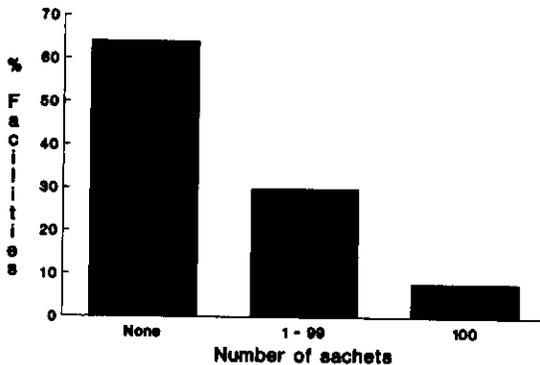
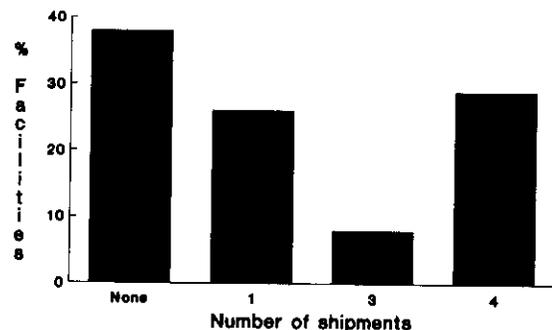


Fig. 26
Last 6 Months
SHIPMENTS



2. Training

Since 1987, 349 professionals have received CDD training in either clinical management of diarrhoea or some phase of program management, as outlined in Figure 27, below.

However, considering the thousands of facilities in Nigeria, the numbers still needing training or retraining are sobering.

Fig. 27
CDD TRAINING WORKSHOPS
NIGERIA 1987 - 1990

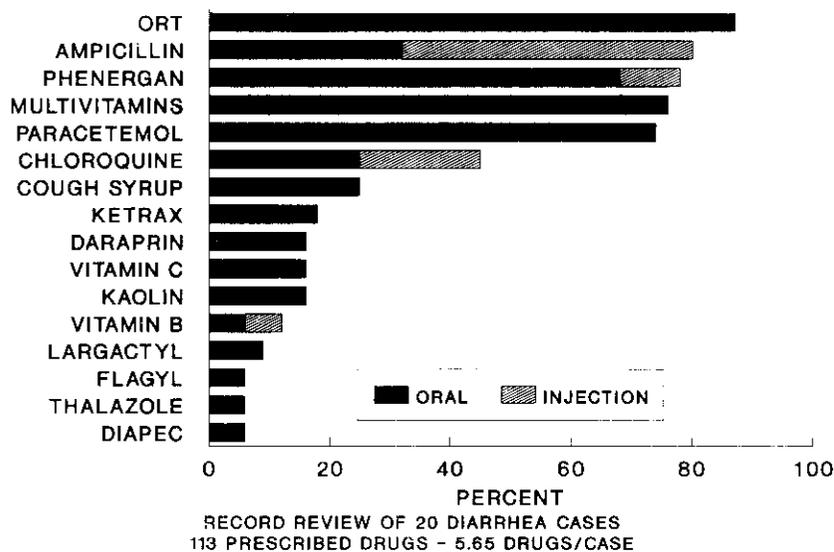
YEAR	TYPE OF WORKSHOP	NO OF WORKSHOPS	NO OF PARTICIPANTS
1987	SUPERVISORY SKILLS AND MID-MANAGEMENT	1	62
	SUB TOTAL	1	62
1988	CLINICAL MANAGEMENT OF DIARRHOEA	2	51
	SUPERVISORY SKILLS	1	39
	SUB TOTAL	3	90
1989	CLINICAL MANAGEMENT OF DIARRHOEA	1	24
	SUPERVISORY SKILLS	1	57
	SUB TOTAL	2	81
1990	CLINICAL MANAGEMENT OF DIARRHOEA	1	32
	PROGRAMME MANAGERS	1	57
	CORE FACILITATORS	1	27
	SUB TOTAL	3	116
	GRAND TOTAL	9	349

3. Treatment

Large numbers of patients are still receiving prescriptions of inappropriate drugs for the treatment of diarrhoea. For example, the In-Depth Review Team found the 113 drugs were prescribed to 20 patients who had diarrhoea (Figure 28).

Fig. 28

REPORTED TREATMENT OF 20 DIARRHEA CASES HEALTH CENTER D - ANAMBRA STATE



C. Realizing Improvements - Future Plans

Recognizing the state of ongoing intervention activities and the key problem areas already described as impediments to significant quality improvement, the following activities are planned in 1991 as steps toward removing problems and upgrading CDD services:

1. A major planning meeting is being convened in April 1991, with participants coming from WHO Geneva, UNICEF New York, and CDC Atlanta. The purpose of the meeting will be to review past problems and develop realistic national workplans for Nigeria CDD activities.
2. National training of personnel will receive renewed emphasis.
 - a. A Diarrhoea Training Unit (DTU) will be established in PHC Zone C. The other 3 Zones already have functioning DTUs.

- b. The frequency of training at DTUs will increase.
 - c. The clinical training agenda for Zone D, along with their training materials, have been reviewed and partially updated. Similar action will be taken with the other 3 DTUs.
 - d. Agreement has already been reached with WHO on a cooperative activity to improve preservice training materials for medical schools. This agreement will be implemented in 1991.
3. CCCD Focus States will give particular attention to improving CDD activities. (Many improvements can be tested and demonstrated in the Focus States to gain appeal for compliance by other states.)
- a. One DTU will be developed in each of the Focus States.
 - b. ORS deficiencies in supply and distribution will be studied on site and, with local cooperation, improvements will be initiated immediately.
 - c. An ORT Unit or Corner will be established in each hospital or clinic in all Model LGAs. ORT corners will also be developed in at least 15 "non-model" LGAs in each state.
 - d. Training of LGA staff will proceed through the Continuing Education Programme.
4. Other special activities planned:
- a. A national household survey will be conducted to estimate morbidity and mortality related to diarrhoeal diseases.
 - b. A national PHC Sentinel Surveillance System will be installed, which will include CDD indicators.
 - c. Operational research relating to CDD will continue to be supported.
 - d. New LGA leadership will be monitored and special programme management training provided.
 - e. An effort will be made to develop a clear policy statement regarding diarrhoea case management.

V. MALARIA

A. National Activities

The National Malaria and Vector Control Division (NMVCD), FMOH, provided nation-wide leadership for activities designed to reduce morbidity and mortality due to malaria. While exact incidence and mortality rates for malaria are unknown, available data suggest that malaria is the most common cause of out-patient visits in Nigeria, that it is among the top five causes of deaths for all ages, and that it causes 8-12% of deaths in children under five years of age.

NMVCD continued to lead a National Malaria Technical Committee which met semi-annually to review programme developments and disease/treatment trends. This same committee provided technical assistance to state and local malaria meetings and activities as well as developed the "Guidelines For Malaria Control In Nigeria," the document approved in 1989 by the National Council on Health to be the country's standard on malaria treatment and control. CCCD supported this committee and provided technical and financial assistance for the development of the national Guidelines.

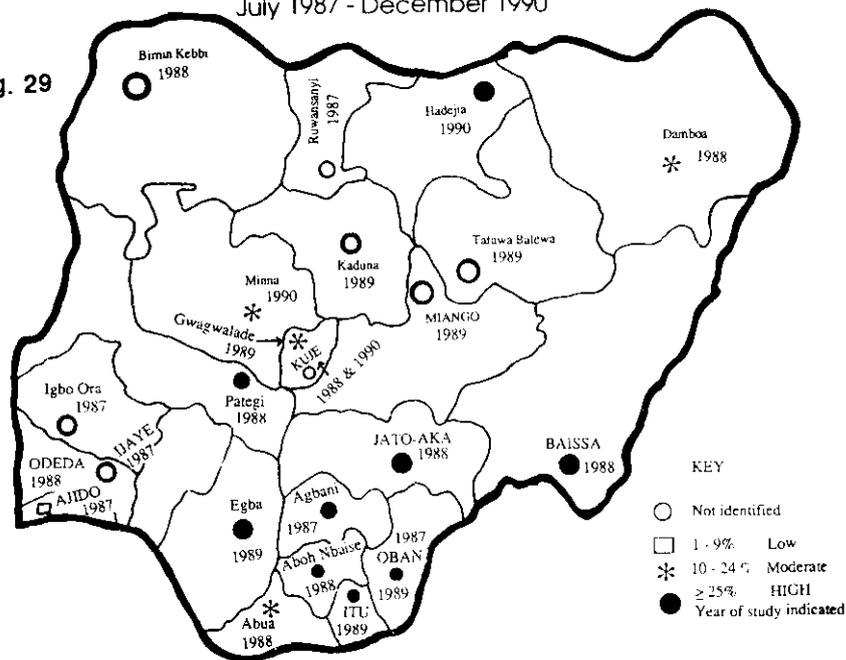
In 1990, CCCD assisted, and participated in, the International Workshop on the Current Treatment and Prevention of Malaria held at the University of Calabar. Seven countries were represented: Zimbabwe, Tanzania, Cameroon, Ivory Coast, United States, United Kingdom, and Nigeria. Eleven Nigerian universities actively participated. Pertinent research findings were reported, providing convincing evidence of the spread of malaria resistance to chloroquine. An informal Malaria Association was spontaneously organized by the majority of participants at the conclusion of this Workshop to provide a mechanism for continued communication across country borders.

The National Malaria Surveillance Network continued its work to monitor the sensitivity of Plasmodium falciparum to antimalarial drugs throughout the country. This Network includes multidisciplinary teams from the NMVCD and the four PHC Zones in Nigeria: the University of Calabar in Zone A, the University of Ibadan in Zone B, Ahmadu Bello University in Zone C, and the University of Maiduguri in Zone D. Results from this Network provided the information necessary for the formulation of the national Guidelines. CCCD supported Network activities and provided technical assistance in data analysis.

Results of in vivo studies on chloroquine and sulfadoxine/pyrimethamine (Fansidar) or sulfalene/pyrimethamine (Metakelfin) are presented in the Figures 29 and 30.

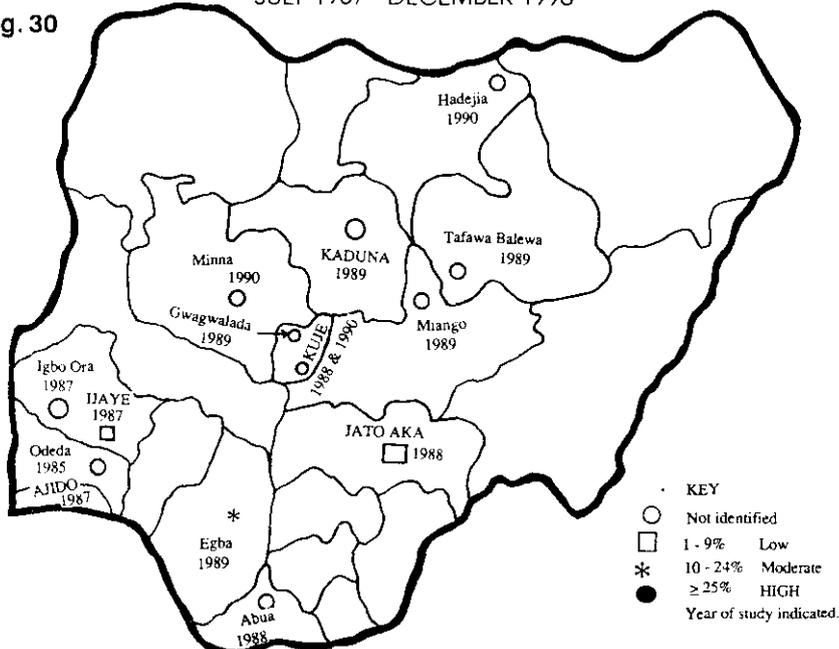
LEVEL OF EARLY AND LATE PARASITOLOGIC FAILURES TO CHLOROQUINE
THERAPY, CHILDREN UNDER FIVE YEARS OF AGE,
NATIONAL MALARIA SURVEILLANCE NETWORK,
July 1987 - December 1990

Fig. 29



LEVEL OF EARLY AND LATE PARASITOLOGIC FAILURES TO INITIAL
SUFADOXINE/PYRIMETHAMINE OR SUFALENE/
PYRIMETHAMINE THERAPY, CHILDREN UNDER FIVE YEARS OF AGE,
JULY 1987 - DECEMBER 1990

Fig. 30



These trials document reduced parasitological sensitivity to chloroquine in all areas of Nigeria. Fansidar and Metakelfin in standard doses have not documented significant parasitologic or clinical failures in the treatment of *P. Falciparum* infections. Clinically, however, chloroquine has been demonstrated to be effective in all Zones. Executive Summaries of these results have been distributed to all State Ministries of Health.

In 1990, follow-up therapy efficacy surveillance were conducted in Oban (Zone A) and Kuje (Zone C). The following results show no significant change in the overall parasitological failure rates up to day 14 (D14) with standard chloroquine therapy in both areas:

AREA	INITIAL THERAPY SURVEILLANCE	FOLLOW-UP
Oban	1987 (July/Aug)	1989 (Oct/Nov)
No. enrolled	49	34
CQ failure D7	38.8%	26.5%
Rate D14	12.2%	33.3%
Kuje	1988 (Sept)	1990 (Nov)
No. enrolled	47	40
CQ failure D7	0%	8.3%
Rate D14	6.8%	0%

B. Other Achievements

1. Training

CCCD helped develop a new Malaria Training Module for mid-level and peripheral health workers. It was pretested in Niger State and approved for use throughout the country.

The focus of the training at the fourth annual ARHEC Workshop in 1990 was Health Education for Malaria Control.

2. Operations Research

Important studies continued to be supported by the CCCD Research Review Committee, addressing critical issues related to the implementation of the national Guidelines. For example, one completed study documented substandard chloroquine syrup in commercially acquired samples in eastern Nigeria.

In 1990, a protocol was developed for a study of pyrethrum impregnated bednets, with plans for implementation in 1991.

3. Planning

1991 National Malaria Workplans were developed, with both implementation and operational components. These plans are now being used by officers of the NMVCD.

C. Quality Issues

The National Health Policy for Nigeria is outlined in the Fifth National Development Plan (1987-1991). This plan makes PHC the cornerstone of Nigeria's health policy. It appears that the new 5 year plan will continue with this PHC emphasis. It is opportune that efforts will be made in 1991 to introduce organized malaria control activities into PHC Services. CCCD will promote the recognition of this change by health workers at all administrative levels.

The National Malaria Surveillance Network will continue to monitor the sensitivity of P. falciparum in selected areas of the country. However, routine reporting of morbidity and mortality due to malaria from sentinel health facilities needs to be institutionalized in 1991. Data from sentinel sites can identify areas with high morbidity/mortality rates and supplement therapy efficacy information.

Two complex and important issues are not sufficiently addressed in current workplans. The first is how to assure the quality of chloroquine available to the public and the second is how to provide adequate quantities of recommended antimalarial drugs to the public. Special consultants may be needed in 1991 to study these issues and make recommendations to the FMOH and USAID for action.

D. Future Plans

1. CCCD will continue to support the Surveillance Network and the activities of the National Committee. Information and leadership from these groups is expected to result in a revision or update of the Guidelines For Malaria Control In Nigeria.

2. Training of mid-level and peripheral health workers in the application of the National Guidelines will be supported. In addition, selected health facility staff will be trained in laboratory diagnosis of malaria.

3. Malaria control activities will be implemented in the CCCD Focus states and Model LGAs, including training of health staff, upgrading laboratory facilities, providing health education, and developing community mobilization.

VI. SUPPORT STRATEGIES

A. Health Information Systems (HIS)

At the Federal level, HIS development is being assisted by a full time CDC epidemiologist, who works as an advisor to the Monitoring and Evaluation (M&E) Division, Department of Primary Health Care, FMOH. In the CCCD Focus States, he collaborates with a second CDC epidemiologist, who is the technical officer in charge of the CCCD Kaduna Office, and with four Nigerian epidemiologists.

A key development in 1990 was the formation of an Epidemiology Editorial Board, which obtained FMOH approval for a quarterly technical publication, entitled "Nigeria Bulletin of Epidemiology." Two CCCD staff are on the board. The goals of the Bulletin are:

1. To disseminate information on disease trends in Nigeria.
2. To report on public health issues and policy.
3. To facilitate exchange of health information among people and organizations delivering health care in Nigeria.
4. To increase awareness of the importance of disease surveillance.

The first issue of the Bulletin is attached to this report as an appendix.

Technical and material assistance from CCCD has helped the M&E Division to become the best functioning computer center in the FMOH. Staff have received theoretical and practical training in the use of relevant software. The Division is now recognized as being capable of entering, editing and analyzing data sets for the FMOH. This unit, with assistance from CCCD staff, has become a computer training center, and has trained 92 federal and state health staff in the use of selected software.

Not enough data is received from the field - this has become a difficult problem facing the Division. In 1991, efforts will be made to assist field reporting sites to collect, analyze and submit accurate reports to the FMOH on a regular basis. LGA level health workers and managers will be trained in HIS, and CCCD will assist the M&E Division to supervise LGAs and States.

Nigeria's notifiable disease reporting system collects case and death information on forty diseases. This system has been strengthened by a custom designed computer system for data entry and analysis. The federal level can use the system to enter and

analyze state data, and states can use it (where computer capacity exists) to enter and analyze LGA reports. This automated system for notifiable diseases will begin operating in 1991.

In 1991, CCCD will assist in the development, implementation and evaluation of a Federal PHC Sentinel Surveillance System. The system will be designed to collect, analyze and report on trends in measles, polio, tetanus, pertussis, malaria, diarrhoea, and acute respiratory infections. Information on cases and deaths will be collected by age and vaccination status where appropriate.

An automated system for handling EPI routine reports is being developed and should be applied in 1991. The program will be user friendly.

CCCD assisted in the design, implementation and analysis of the national immunization coverage survey. In conjunction with the FMOH and other donor agencies, the national capacity to manage coverage survey data was strengthened.

CCCD installed computers in all four Zonal PHC Offices and in two State Ministries of Health and trained staff to use them. CCCD will do the same in four more states in 1991.

Training will be provided to federal, Zonal and State Ministry of Health personnel in survey and data analysis methods, in addition to the ongoing training in the use of computers for data entry and analysis.

Medline is a computer network allowing easy access to bibliographic citations and abstracts from biomedical literature. Through CCCD support, Medline will be installed in at least one FMOH Office in 1991, providing researchers and ministry officials with better access to current literature.

In 1991, CCCD will also focus on development of information systems in the CCCD Focus States and Model LGAs. State HIS offices will be computerized and their staff will be trained. A component of this development will be pilot testing of a computerized hospital reporting network in selected hospitals.

Other HIS activities planned for 1991 are:

- Assisting in the integration of reports across FMOH departments. For example, yellow fever reports collected by one department could easily be integrated into EPI reports collected by a second department.

- Providing technical assistance to the Department of Planning, Research and Statistics for the development of the Ministry-wide Information Center.
- Incorporating malaria morbidity and mortality reporting into the new PHC Sentinel Surveillance System.
- Participating on the National Expert Committee on Serology Surveillance. This committee can assist in the development of yellow fever vaccine trials in Nigeria.
- Assisting in the entry and analysis of other PHC project data, such as:
 - the 1988 nation-wide survey data from the Guinea Worm Project
 - the 16 LGA non-communicable disease survey from the Epidemiology Division, Department of Disease Control and International Health, FMOH
 - FMOH evaluation of Primary Health Care implementation in the 52 Model LGAS.

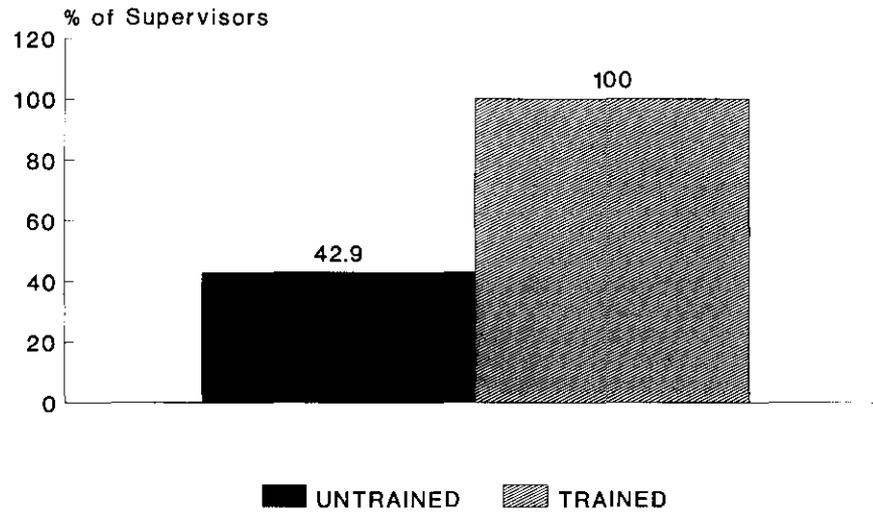
B. Continuing Education and Training

In 1990, the Niger State Continuing Education (C.E.) Program was fully institutionalized and continued to provide in-service training for LGA managers and facility-based PHC workers. The Niger C.E. Program, established in 1989, has proven an exciting and effective alternative approach to traditional classroom training, with emphasis placed on identification of priority training needs through Facility-Based Assessments, participatory in-service training, with regular supervision and follow-up training to reinforce and further improve skills.

The impact of the Niger State C.E. Program on improving supervisory/management skills and health worker performance was documented in 1990 through both Pre-Post Workshop Skills Assessments and Facility-Based Needs Assessments.

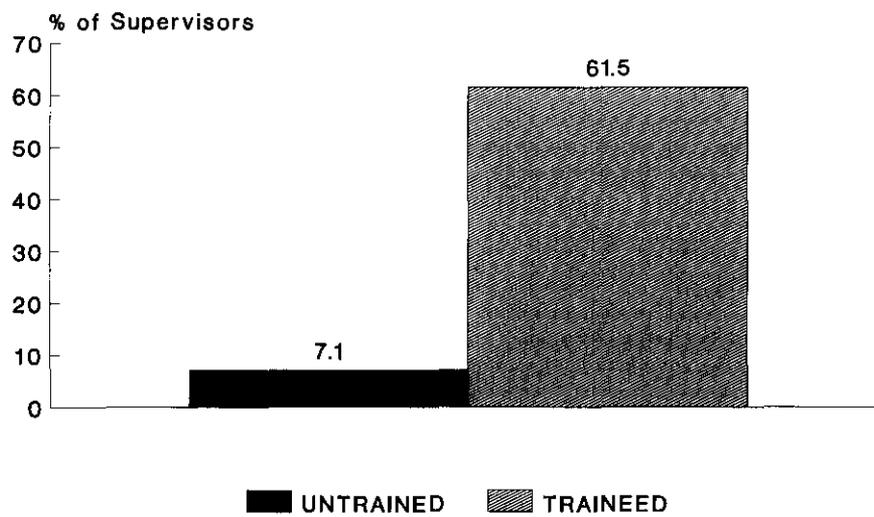
Figures 31 and 32 demonstrate the impact of training on supervisors' ability to produce a written workplan and a supervisory schedule.

Fig 31
Niger State Supervisors Able to
Produce Written Workplan
Trained vs Untrained, 1990



27 Supervisors

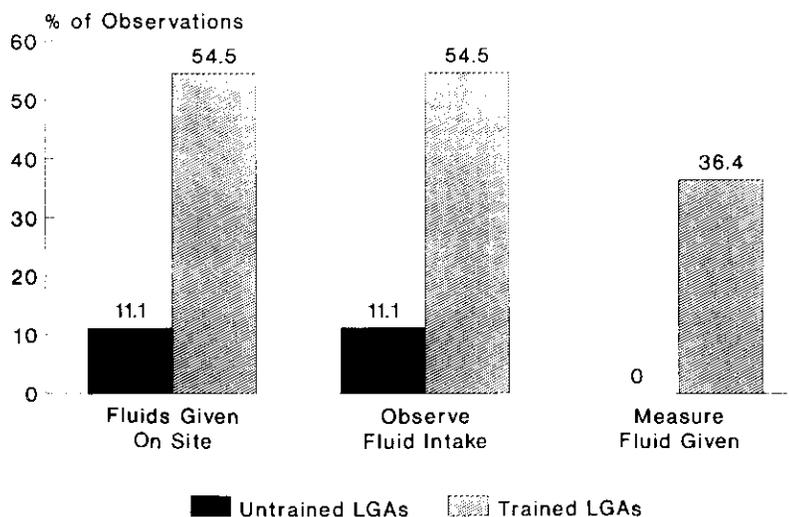
Fig 32
Niger State Supervisors Able to
Produce Supervisory Schedule
Trained vs Untrained, 1990



27 Supervisors

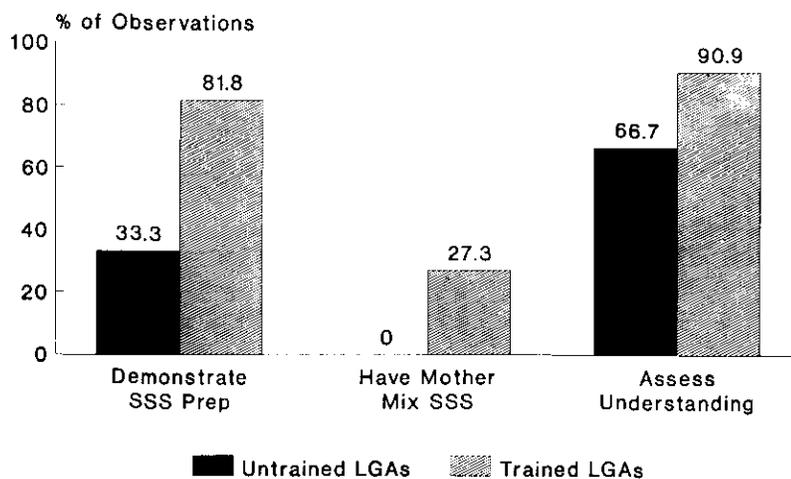
Figures 33 and 34 demonstrate improved performance in the treatment of diarrhoea among trained health workers.

Fig 33
On-Site Care of Children with Diarrhoea
Trained vs Untrained, 1990



20 observations in 14 facilities

Fig 34
Health Workers' Education of Mothers
about SSS
Trained vs Untrained, 1990



20 observations in 14 facilities

Specific elements of the Niger State C. E. Program which were further consolidated in 1990 include:

- 1) Continuing Education Unit (C.E.U.): The C.E.U. at Minna School of Health Technology now has three full-time professional staff who coordinate the State C.E. Program.
- 2) Training of LGA Managers: Since October 1989, fifty LGA Managers (LGA Groups I and II) have completed the initial two-week training and monthly follow-up meetings and continue to receive supervisory visits from C.E.U. staff. The final group of LGA Managers began training in January 1991.
- 3) FMOH Training Modules: In addition to nine FMOH EPI/CDD Supervisory Skills Modules and accompanying Facilitator's Guides, a Malaria Module reflecting national malaria policy has been developed and is now taught as part of the C.E. Program.
- 4) Continuing Education Committee (C.E.C.): A State C.E.C. has been established as an advisory body on state-wide training priorities.

An External Program Review, conducted in July 1990 by a team of Federal Ministry of Health and private sector management representatives, provided additional constructive suggestions for strengthening the C.E. Program in Niger State and recommended expansion of the program to other states throughout Nigeria.

In 1991, a major focus of activity will be the expansion of the Continuing Education Program to five additional CCCD Focus States. Initially, Plateau and Anambra states will receive technical and financial support to conduct Facility-Based Assessments, to establish Continuing Education Units at Schools of Health Technology, and to implement the in-service training program for LGA managers and facility-based PHC workers. Sokoto, Oyo and Lagos States will receive similar assistance later in the year. Niger State C.E.U. staff will assist in the orientation of newly assigned C.E.U. personnel in all five states.

A challenge in 1991, based on the Niger State experience, lies in the development of strategies to improve the effectiveness of LGA-level training activities. Specific LGA-level needs include training materials (for training facility-based PHC workers), transportation for supervisory and training activities, logistics support to improve the availability of essential drugs, equipment and supplies (especially ORS) at health facilities, and more funding for training activities. Additional attention will also be given to the sustainability of a viable Continuing Education Program within the context of economic constraints and shortages of funds for training and supervisory activities.

In addition to support for LGA-level training activities, the Niger State C.E. Program will receive assistance for C.E.U. staff development (i.e. training to improve technical and supervision skills) and C.E.U training equipment and resources. In-service training modules on Family Planning/Child Spacing (a joint CCCD/Family Health Services activity) and Health Information Systems (focusing on how to interpret and use data at the local level) will also be developed and incorporated into the C.E. Program.

C. Health Education

1. ARHEC

In 1990, the African Regional Health Education Centre (ARHEC), in collaboration with CCCD/Nigeria and the University of North Carolina, conducted the fourth intercountry training course on health education planning and management. The theme of the course, "Health Education for Malaria Control", was the development of health education strategies in the context of Primary Health Care.

Participants included health professionals and policy makers from the Gambia, Kenya, Nigeria and Swaziland. Among the Nigerian participants were representatives from four Local Government Areas (LGAs): Idah (Benue State, Zone A), Ife-Central (Oyo State, Zone B), Kaura Namoda (Sokoto State, Zone C) and Barkin-Ladi (Plateau State, Zone D).

Before the month-long training program, a Needs Assessment was conducted in each of the four LGAs to collect relevant demographic, clinical and PHC program information. These data were used by participants in the training course to prioritize health education needs and develop LGA-specific (or, country-specific) plans of action for malaria control. In order to assist participants monitor progress towards meeting workplan objectives and reinforce skills learned in the training course, on-site follow-up visits to each country and, within Nigeria, to each LGA, have been carried out by ARHEC course facilitator.

After the course, a training manual was developed as a guide to planning and conducting a short-term training program on the health education component of malaria control. The manual includes 15 modules which, following the structure and content of the training course, emphasize the formulation of health education objectives and strategies, community involvement and participation, information gathering, development of an action plan and monitoring and evaluation.

Since 1987, four ARHEC-sponsored intercountry training courses on health education planning and management have provided training for 46 senior health education officers and 39 child survival program managers from six countries. The ARHEC training program has distinguished itself in five significant areas:

- 1) participant selection, i.e. including program managers and policy makers,
- 2) pre-training needs assessments,
- 3) participatory methods,
- 4) workplan development, and
- 5) follow-up site visits.

A major challenge for ARHEC over the years has been the lack of financial support and commitment for health education plans developed by course participants. Strategies for improving commitment to the health education component of PHC programs must be examined. In addition, alternatives to the traditional "Workshop" approach for providing training in health education planning and management also need to be explored.

In Nigeria, the role of ARHEC will shift in 1991 to include support for health education training activities in six CCCD Focus States and in selected LGAs targeted for development as Models for PHC service delivery. A meeting of ARHEC, HealthCom and FMOH Health Education Unit staff will define roles, develop workplans and formulate plans for monitoring health education activities.

2. HealthCom

In 1990 HealthCom initiated an intensive health education program in Rafi and Suleja LGAs in Niger State. This focused intervention in a defined geographic area was intended to document the program impact of HealthCom methodologies, which have been utilized in various states throughout Nigeria since 1987.

Baseline community KAP studies, conducted with technical assistance from ARHEC, identified measles control and malaria as child survival priorities in both Rafi and Suleja. An intervention plan targeting EPI and malaria health education activities was implemented in 1990. A school health programme is also being pilot tested as a means of promoting Primary Health Care in the two LGAs.

Specific activities carried out in Rafi and Suleja include: 1) training of health workers, community members and media personnel in interpersonal communication skills and health education strategies, and 2) production of promotional and educational materials, i.e. flipcharts, calendars, posters, T-shirts, handbags and banners.

Since 1987, HealthCom has provided technical assistance and logistics support for health communication in Nigeria. At the Federal level, HealthCom has collaborated with the FMOH Health Education Unit to establish a modern fully equipped Graphics Department and Photographic Laboratory.

State level support, directed primarily to the six states in Zone C and to Niger State in particular, has included: 1) formative and behavioral research to establish health priorities, 2) production of PHC promotional and educational materials (i.e., EPI/ORT pamphlets, flyers, posters, billboards, flip charts and training manuals), 3) development of Child Survival Units and Child Survival Broadcast Programmes at radio stations, 4) establishment of SMOH Material Resource Centers, and 5) training of health educators, graphic artists and media workers in health communication skills, community participation strategies and materials development.

A major obstacle to health education planning in Nigeria has been the lack of documentation that HealthCom inputs and activities have resulted in positive program impact. In 1991, the impact of HealthCom initiatives in Rafi and Suleja LGAs may be assessed and the findings used to define, in part, the future direction of CCCD-supported health education activities.

It is anticipated that HealthCom II will play a role in 1991 in supporting health communication and community participation activities in six CCCD Focus States and, in particular, in those CCCD-supported LGAs targeted for development as Models for PHC service delivery. A joint HealthCom/ARHEC/FMOH Health Education Planning Meeting scheduled for early 1991 will provide an opportunity to assess the impact of HealthCom I and define the role of HealthCom II.

B. Operations Research

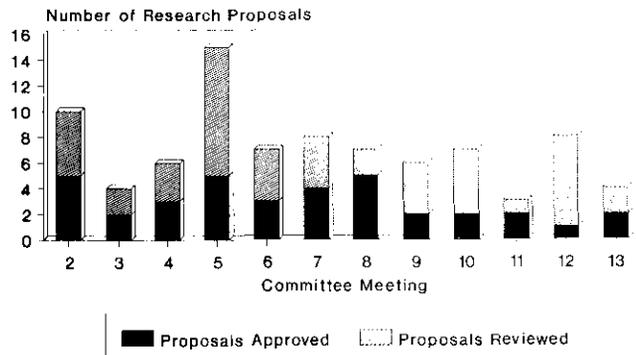
Throughout 1990, CCCD continued to support operations research, based on the premise that such studies will assist the practical application of child survival interventions in Nigeria.

The CCCD Research Review Committee, composed of representatives from the Federal and Zonal levels of the Ministry of Health, two University Schools of Medicine, and the Ministry of Science, continued to promote the development of research proposals, technically review proposed studies, submit these proposals through the FMOH review system, and monitor the conduct of the studies.

Since 1987, The CCCD Research Review Committee has reviewed 85 proposals, approving 36 for funding (Figure 35).

Fig. 35

Approved Research Proposals,
By Committee Meeting,
ACSI-CCCD Project, Nigeria, 1987-1990

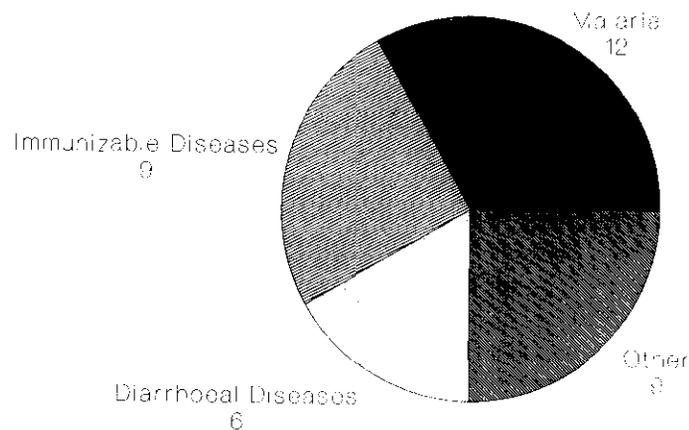


Approval Rate = 43% (36 of 85 Proposals)

Studies approved by the Committee have focused on malaria, diarrhoeal diseases and immunization intervention activities, per Figure 36.

Fig. 36

Approved Operational Research Proposals
By Intervention, ACSI-CCCD Project,
Nigeria, 1987 - 1990



* Other = ARI (2) Drug Utilization,
Mortality, Otitis, Anaemia
Total = 36 proposals

Guidelines for protocol preparation were revised in 1990 and distributed to professional institutions and officials throughout the country.

Efforts continued to integrate the CCCD Research Review Committee into the Department of Planning, Research and Statistics, FMOH. The FMOH now completely finances and supervises the Secretariat to the Committee.

An outside review of operational research sponsored by CCCD in Nigeria was conducted in 1990 by a member of the Department of Community Health and Preventive Medicine, Morehouse School of Medicine. Some conclusions from the final report are:

1. "The evidence of individual benefit to researchers was convincing, particularly in the Nigeria experience. In this respect, one particular characteristic of the Nigeria effort requires specific mention. The single characteristic of the research program which researchers consistently identified as most valuable to them (and unique to ACSI-CCCD), was the "accessibility" of the program - the ability to develop and submit protocols locally, receive timely feedback, work on modifications, consult freely with preceptors, clarify anticipated questions, procure relevant journal articles, etc."
2. "Where close oversight or collaboration has occurred (as in Nigeria and Zaire) research findings have generally been useful and reliable."
3. "In general, institutional strengthening (of research capacity) has not been a conspicuous objective of CCCD research efforts. However, the Nigeria experience appears to pay significantly more attention to this end."

VII. STATE SUPPORT AND "MODEL LGA" DEVELOPMENT

A. 1990 Accomplishments:

In addition to support for national level child survival initiatives, the Government of Nigeria in 1990 requested that CCCD provide intensive assistance to strengthen child survival program activities in six "focus" states -- Anambra, Lagos, Niger, Oyo, Plateau and Sokoto. Priority areas for CCCD assistance were identified as:

- 1) development of at least one Local Government Area (LGA) as a "Model" for Primary Health Care service delivery,
- 2) establishment of a state-wide Continuing Education program for LGA managers and facility-based PHC workers, and
- 3) improvement of state-wide Health Information Systems (HIS).

After introductory visits and discussions with health officials from each state, these LGAs were selected for development as Primary Health Care Models:

<u>State</u>	<u>LGA</u>
Anambra	Nsukka
Lagos	Ojo
Niger	Suleja
Oyo	Ife-Central
Plateau	Barkin-Ladi, Pankshin
Sokoto	Kaura Namoda

In November-December 1990, a detailed Needs Assessment was conducted in each state and Model LGA to obtain information about the status of PHC implementation and to ascertain program - specific needs and concerns. Based on these Needs Assessments, a draft 1991 workplan was prepared for each state. These workplans were discussed and finalized at meetings with state and LGA health officials and PHC program managers. Specific activities to be supported by CCCD were agreed upon in four areas:

- 1) **Continuing Education:** Based on the experience of Niger State, a Continuing Education Program will be established at Schools of Health Technology in five additional CCCD Focus States. Continuing Education Units will be established, Facility-Based Needs Assessments conducted, and an in-service training program for LGA managers and facility-based PHC workers implemented.

- 2) Health Information Systems: Logistics and training support will be provided to improve state-wide Notifiable Disease Reporting, PHC Monitoring and Evaluation, and PHC Sentinel Surveillance. Special emphasis will be placed on improving feedback of health information and using data at the local level.
- 3) State-Level PHC Support: At the State level, logistics support will be provided to improve supervision of PHC activities in the LGAs and to strengthen supply/distribution systems for EPI, ORS, anti-malarial and other essential drugs. Technical EPI/ORT training will be conducted and ORT Units established. Through ARHEC and/or HealthCom, state level health education capabilities will be strengthened.
- 4) Model LGA Development: Following Federal Ministry of Health Guidelines for PHC Implementation, the "PHC Network" in each Model LGA (i.e., establishment of Village Health Committees, PHC house numbering, placement of home-based records, and training of village health workers) will be strengthened. Technical, logistics and training support will be provided to improve EPI, CDD and Malaria programs.

Four LGAs will be selected for malaria control intensification activities. In all Model LGAs, health communication and community participation will be improved through HealthCom and/or ARHEC initiatives. The Family Health Services Project of USAID will collaborate with CCCD to provide support for family planning/child spacing.

In addition to providing a forum for reviewing 1991 activities, the meetings with state and LGA health officials offered a valuable opportunity to begin to address a number of critical issues, including:

- 1) sustainability, and strategies to assure long-term program viability,
- 2) monitoring and evaluation, to assess the impact of program inputs and interventions,
- 3) donor coordination, and
- 4) State and LGA workplans, reflecting local health priorities consistent with national PHC policy, and incorporating both government and donor inputs.

B. 1991 Plans:

As a result of the recent transfer of responsibility for Primary Health Care from the State to the Local Government level (January 1991), CCCD support for LGA level PHC initiatives has been particularly well received. In 1991, in addition to providing material and logistics inputs, CCCD professional staff will

provide technical support to strengthen PHC programs at the LGA level and assist in this transition. Two Nigerian field epidemiologists based at the CCCD Office in Kaduna will play a key role in providing this type of back-up support.

By late 1991, twelve Peace Corps volunteers will provide additional support for PHC activities in CCCD Focus States and Model LGAs. These volunteers will assist with state level Health Information Systems and Continuing Education activities in Plateau and Niger States. At the LGA level, the volunteers will assist with PHC program development and community health education.

A detailed evaluation plan for monitoring the impact of CCCD program activities at the state and LGA levels has been drafted and will be finalized in early 1991. Process and output indicators (including quality, coverage, and impact) have been identified for the major areas of planned CCCD activity, for CCCD project sustainability, and for overall PHC development. The CCCD evaluation strategy incorporates FMOH targets and objectives, and sets additional targets in the areas of overall primary health care, immunization, diarrhoeal diseases and malaria.

Following the development in 1991-92 of a Model Primary Health Care LGA in each CCCD Focus State, it is anticipated that assistance would then be provided in the next three years to extend the model to other LGAs within the state. Based on the documented success of model strategies, CCCD would then collaborate with the Federal Ministry of Health to extend the models to other Nigerian states.

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	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
NATIONAL CENTER FOR DISEASE CONTROL				TRAINING ASSISTANCE TO STATES NATIONAL SURVEILLANCE		FOCUS STATE SURVEYS MONITORING STATE ROAD AND DETAIL PLANNING ACTIVITIES FEDERAL REVIEW OF POLICIES		YELLOW FEVER VACCINE TRIALS	NATIONAL MEETING			
VACCINE QUALITY CONTROL						MILITARY INSTALLATION SURVEY						
CDD			ZONE B CITY TRAINING	NATIONAL PLANNING MEETING		ESTABLISHMENT OF ZONE C ZONAL CITY TRAINING		ZONE A CITY TRAINING			NATIONAL MEETING	
ZONE D CITY TRAINING						MODEL LGA ZONE WORKSHOP CDD MONITORING SURVEY AND DISTRIBUTION PRESERVICE TRAINING SUPERVISOR MEDICAL SCHOOLS STATE FORSTANCE FIELD SUPERVISOR				NATIONAL HOUSEHOLD SURVEY		
MALARIA			NATIONAL MALARIA COMMITTEE MEETING	CONFERENCE					NATIONAL MALARIA COMMITTEE MEETING		CONFERENCE	ANNUAL MEETING
PROVISIONAL AGREEMENT OVER WORKPLAN				ARRANGEMENT TO GO TO MODEL LGA							REVISION OF GUIDELINES FOR MALARIA CONTROL IN MODEL LGA	
NATIONAL SURVEILLANCE NETWORK						TRAINING FACILITY WORKSHOP		TRAINING FACILITY WORKSHOP			TRAINING FACILITY WORKSHOP	
CONTINUING EDUCATION												
MEETING WITH SENIOR			TRAINING SYSTEMS WORKSHOP (2 STATES)	PREPARATION FOR ALLEGED PROPOSALS	PREPARATION (2 STATES)	ORIENTATION (2 STATES)						
DEVELOPMENT OF NEW PROPOSALS												
MONITORING APPROVED PROPOSALS												
HEALTH EDUCATION												
ANNEX PERS WORKSHOP FIELD VISIT												
COMPLETION HEALTHCARE ACTIVITIES UNDER STATE												
OPERATIONAL RESEARCH												
DEVELOPMENT OF NEW PROPOSALS												
MONITORING APPROVED PROPOSALS												
HIS												
DEVELOPMENT HIS IN UNDER STATE												
IMPLEMENTATION NATIONAL SURVEILLANCE												
PRODUCTION EPIDEMIOLOGICAL BULLETIN												
FIELD TESTING REVERSE PHASE POWER												
CHANGING HIS ADMINISTRATION AT ALL LEVELS												
ASSISTANCE DIRECTION EPIDEMIOLOGY												
FOCUS STATE DEVELOPMENT												
DEVELOPMENT MODEL OFFICE												
COMPLETE NEEDS ASSESSMENT												
DEVELOPMENT (1 STATE)												
HIS DEVELOPMENT (1 STATE)												
DEVELOPMENT (2 STATES)												
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DEVELOPMENT (20 STATES)												

APPENDICES

- Appendix A MIS
- Appendix B "Nigeria Bulletin of Epidemiology"
- Appendix C CCCD/Nigeria Operational Research Studies

APPENDIX A

Estimated Number of Live Births Derived from the
Population and Birth Rate

Year	Population	Birth Rate per 1000	Number of Live Births
1980	86,541,000	45.0	3,894,345
1981	89,399,200	45.0	4,022,964
1982	92,352,900	45.0	4,155,881
1983	95,404,800	45.0	4,293,216
1984	98,563,300	45.0	4,435,349
1985	101,826,700	45.0	4,582,202
1986	105,183,800	48.0	5,048,822
1987	108,612,800	48.0	5,213,414
1988	112,258,100	48.0	5,388,389
1989	115,973,000	48.0	5,566,704
1990	119,812,200	48.0	5,750,986

Doses of Diphtheria-Pertussis-Tetanus (DPT) Vaccine
Administered by Year

Year	First Doses (all ages)	Third Doses (all ages)	Total Doses (all ages)	First Doses (<12 mo.)	Third Doses (<12 mo.)	Total Doses (<12 mo.)
1980						
1981						
1982						
1983						
1984						
1985						
1986	1,730,683	922,239	3,849,547	1,146,501	662,786	2,658,084
1987	2,205,888	1,273,228	5,072,790	1,504,516	936,672	3,512,479
1988	4,094,847	2,362,608	9,468,204	2,471,977	1,495,853	6,021,549
1989	2,925,651	2,148,231	7,447,139	1,947,807	1,383,070	4,875,288
1990	5,302,419	4,500,955	14,326,972	3,379,487	2,672,393	8,844,688

Doses of Measles Vaccine Administered by Year

Year	Total Doses	Doses (<12 mo.)
---	-----	-----
1980		
1981		
1982		
1983		
1984		
1985		
1986	1,329,176	710,200
1987	1,697,801	1,051,055
1988	3,742,724	1,848,991
1989	2,917,594	1,566,740
1990	6,220,718	3,124,836

Doses of Tetanus Toxoid Administered by Year

Year	First Doses	Total Doses	Cumulative First Doses
---	-----	-----	-----
1980			0
1981			0
1982			0
1983			0
1984			0
1985			0
1986	886,849	1,536,101	886,849
1987	1,204,743	2,030,599	2,091,592
1988	1,794,501	3,057,534	3,886,093
1989	1,547,093	2,687,322	5,433,186
1990	2,632,370	4,652,025	8,065,556

Surveillance for Vaccine-Preventable Disease
Number of Reported Cases of Measles, Polio, Pertussis and Tetanus

Year	Number of Reporting Units	Cases of Measles	Cases of Polio	Cases of Pertussis	Cases of Neonatal Tetanus	Total Cases of Tetanus
1980		142,106	393	48,696		2,129
1981		129,671	335	56,913		3,035
1982		139,785	395	77,830		3,479
1983		136,778	323	70,024		2,577
1984		182,591	625	62,751		2,437
1985		161,768	959	92,266		2,679
1986		115,743	453	42,193		2,269
1987		72,966	558	46,669		2,389
1988		53,152	317	18,810		1,473
1989		17,217	151	0		1,260
1990		94,927	561	587		2,065

Packets of Oral Rehydration Salts Imported and Produced Locally

Year	Packets Produced Locally	Packets Imported	Total Packets
1980			0
1981			0
1982			0
1983			0
1984			0
1985	900,000		900,000
1986	900,000	2,500,000	3,400,000
1987	900,000	0	900,000
1988	900,000	500,000	1,400,000
1989	500,000	500,000	1,000,000
1990	200,000	0	200,000

**Percentage of Hospitals Using Oral Rehydration Salts and
Outpatient Facilities Using Oral Rehydration Therapy for
Treating Diarrhea**

Year	Number Outpatient Facilities Sampled	Number Hospitals Sampled	Number Outpatient Facilities Using ORT	Number Hospitals Using ORS	Percent Outpatient Facilities Using ORT	Percent Hospitals Using ORS
1980						
1981						
1982						
1983						
1984						
1985						
1986						
1987						
1988						
1989						
1990						

**Cases and Deaths Due to Diarrhea in Hospitalized
Children under Five Years of Age**

Year	Number Hospitals Reporting	Cases of Diarrhea (< 5 yrs)	Deaths due to Diarrhea (< 5 yrs)
1980			
1981			
1982			
1983			
1984			
1985			
1986		100,285	572
1987		317,804	1,201
1988		397,290	1,270
1989		422,074	1,287
1990		181,143	645

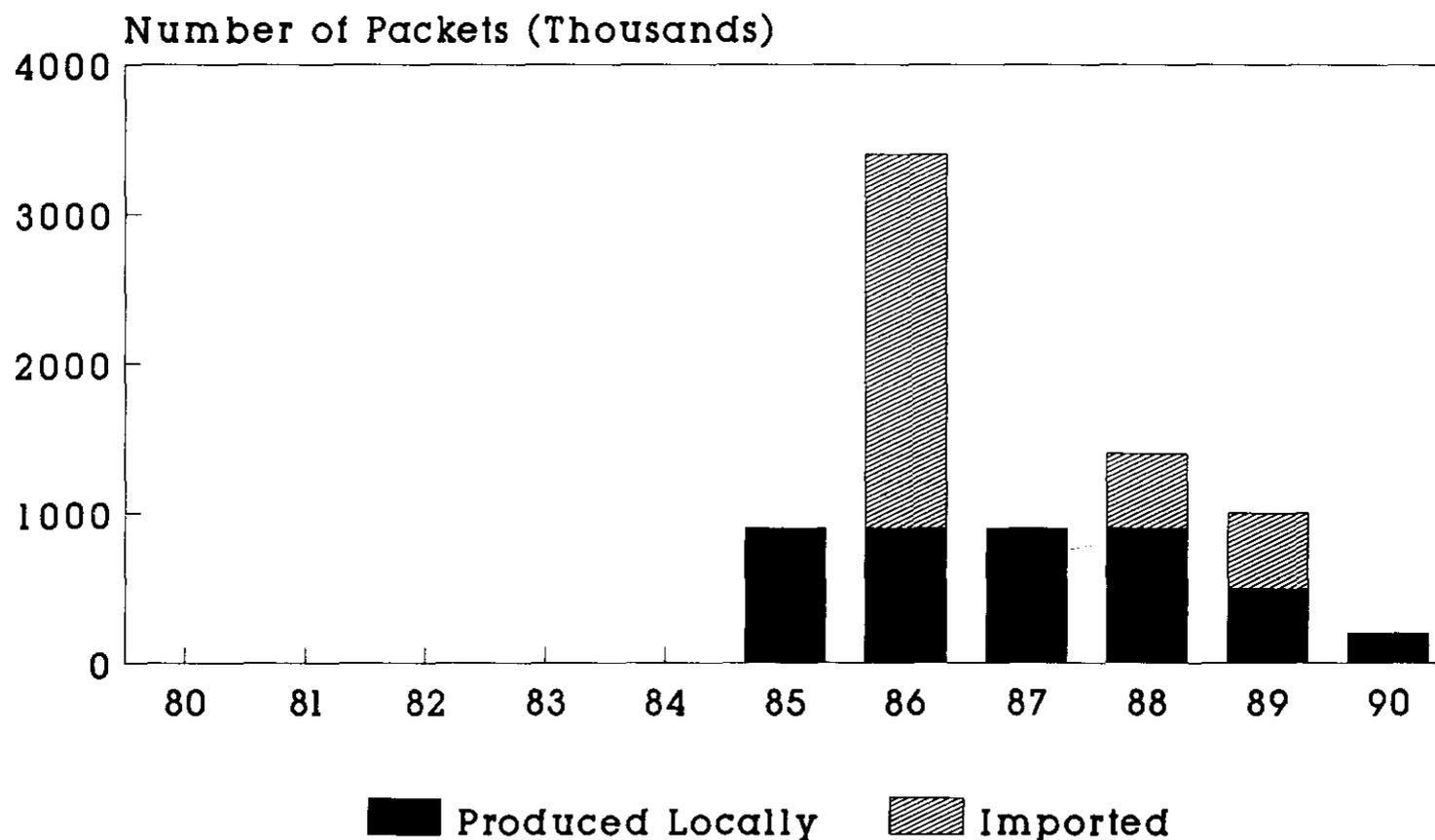
Cases and Deaths Due to Malaria in Hospitalized
Children under Five Years of Age

Year	Number Hospitals Reporting	Cases of Malaria (< 5 yrs)	Deaths due to Malaria (< 5 yrs)
1980			
1981			
1982			
1983			
1984			
1985			
1986			
1987			
1988			
1989			
1990			

Estimated Number of Women of Childbearing Age

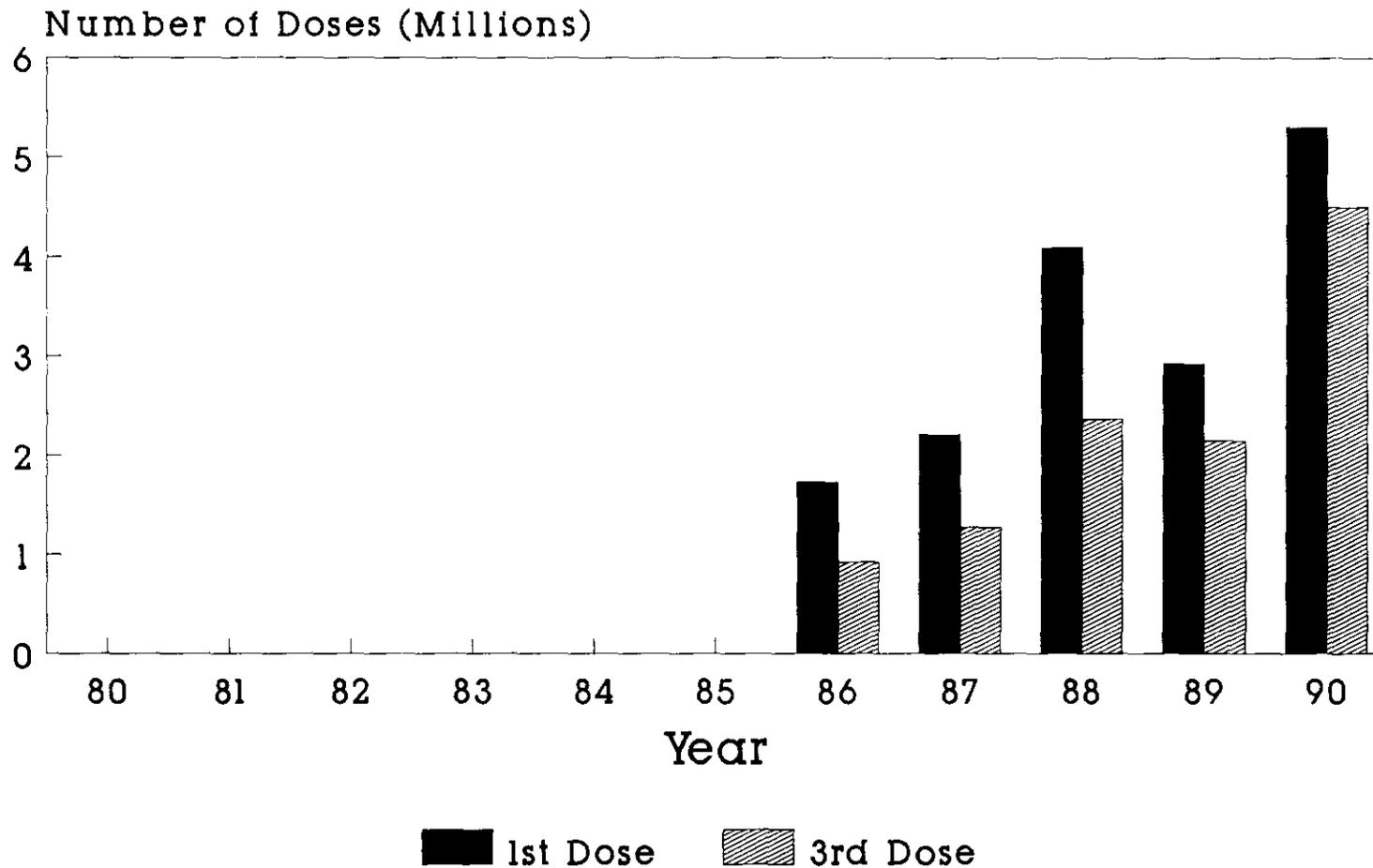
Year	Population	% Pop. of Childbearing Age	Number of Women of Childbearing Age
1980	86,541,000	20	17,308,200
1981	89,399,200	20	17,879,840
1982	92,352,900	20	18,470,580
1983	95,404,800	20	19,080,960
1984	98,563,300	20	19,712,660
1985	101,826,700	20	20,365,340
1986	105,183,800	20	21,036,760
1987	108,612,800	20	21,722,560
1988	112,258,100	20	22,451,620
1989	115,973,000	20	23,194,600
1990	119,812,200	20	23,962,440

Packets of Oral Rehydration Salts Imported and Produced Locally Nigeria, 1980 - 1990



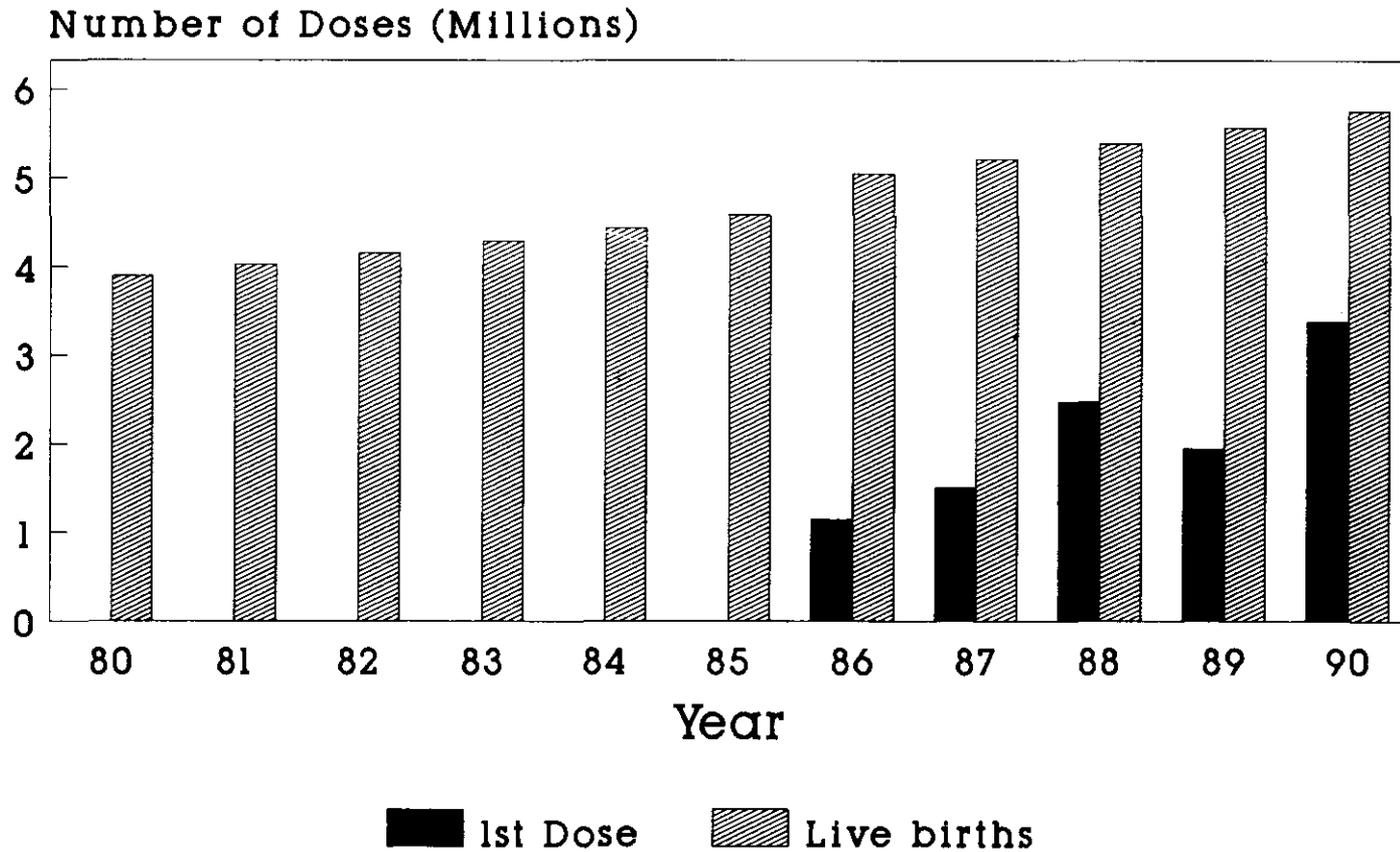
SOURCE : FMOH, EPI/CDD UNIT

DPT: First and Third Doses, All Ages Nigeria, 1980 - 1990



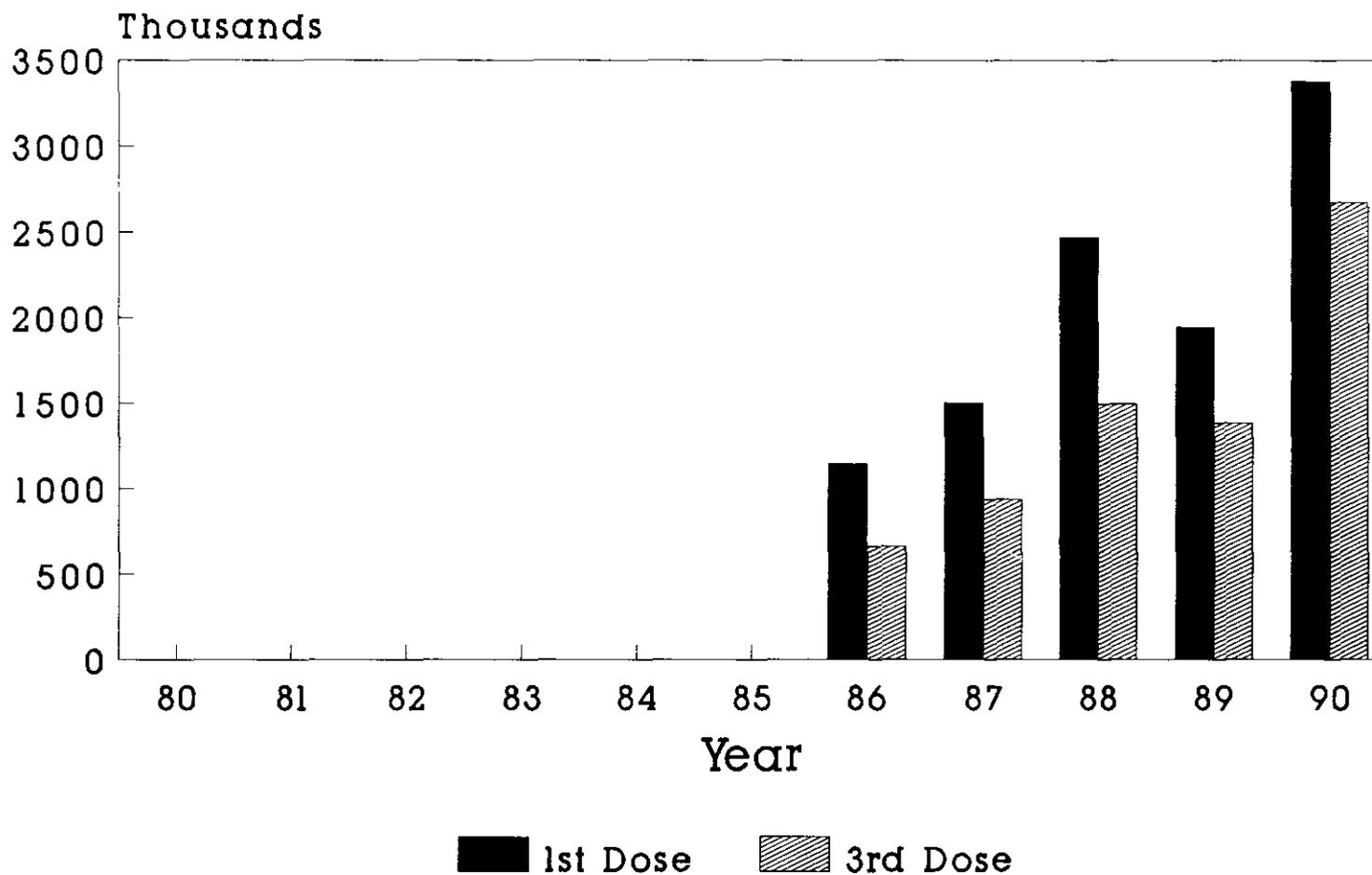
SOURCE : FMOH, EPI/CDD UNIT

DPT: First Doses (<12 Months and Number of Live Births Nigeria, 1980 - 1990



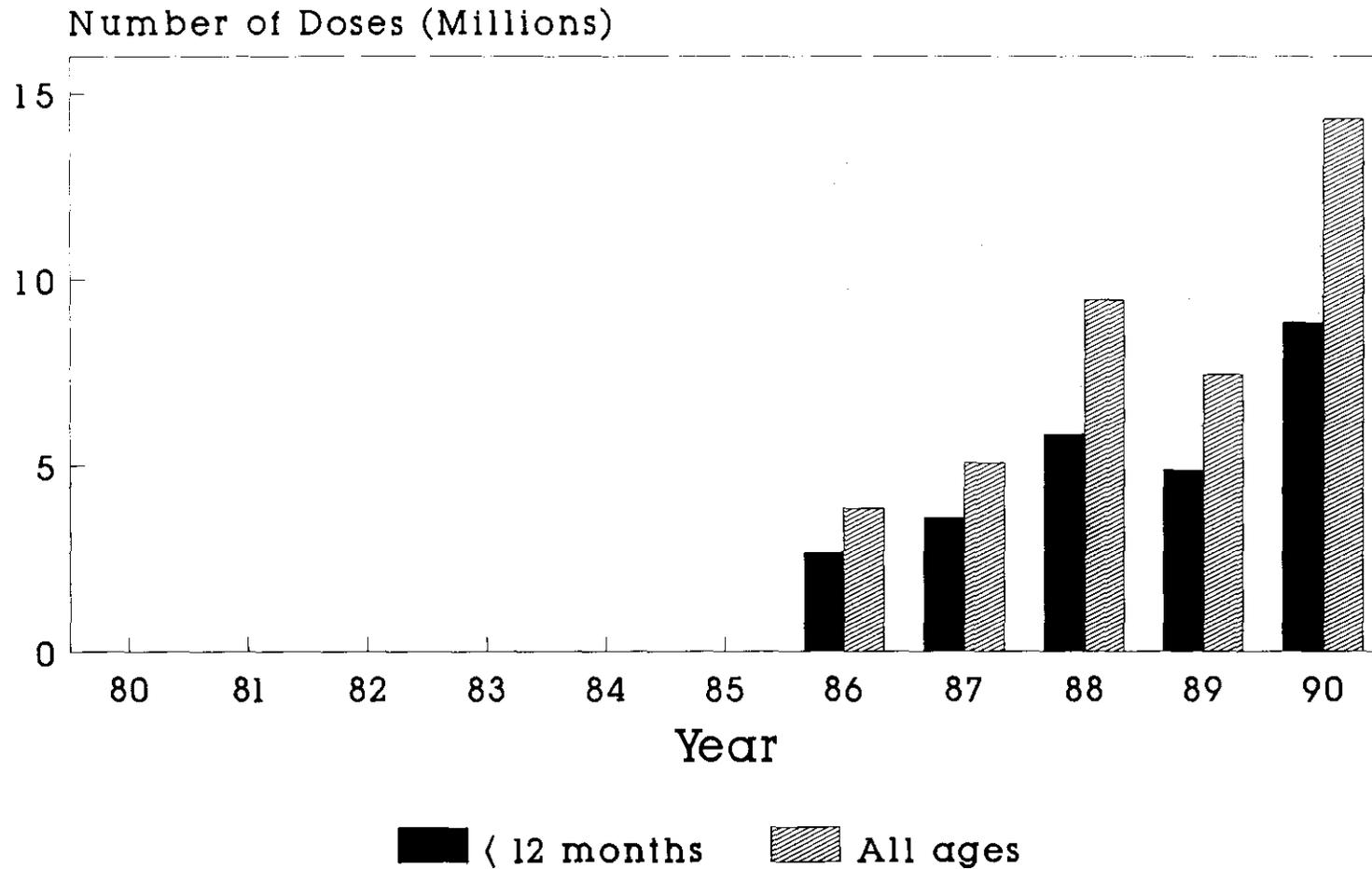
SOURCE : FMOH, EPI/CDD UNIT

DPT: First and Third Doses, < 12 Months Nigeria, 1980 - 1990



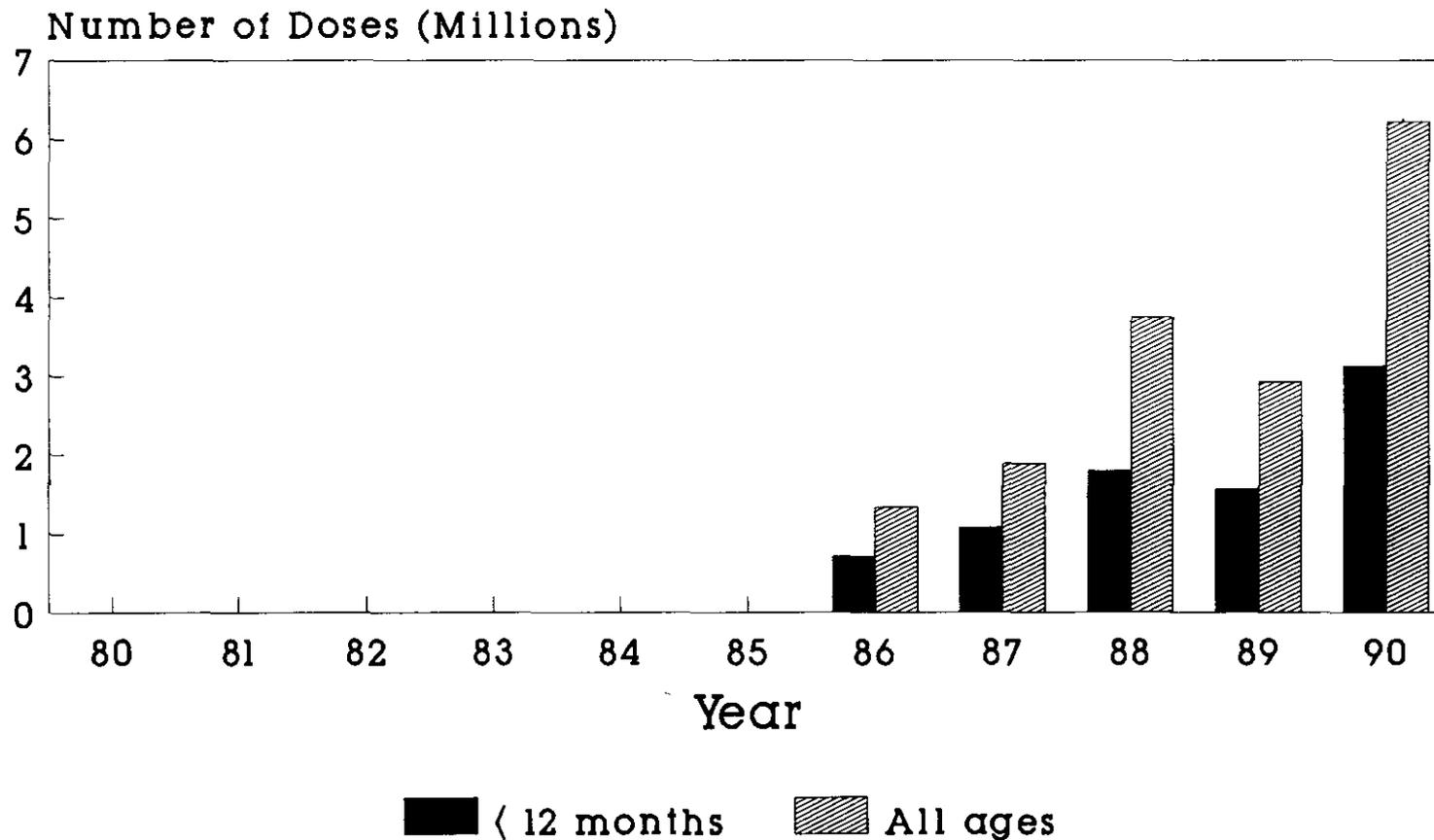
SOURCE : FMOH, EPI/CDD UNIT

DPT: Doses < 12 Months and Total Doses Nigeria, 1980 - 1990



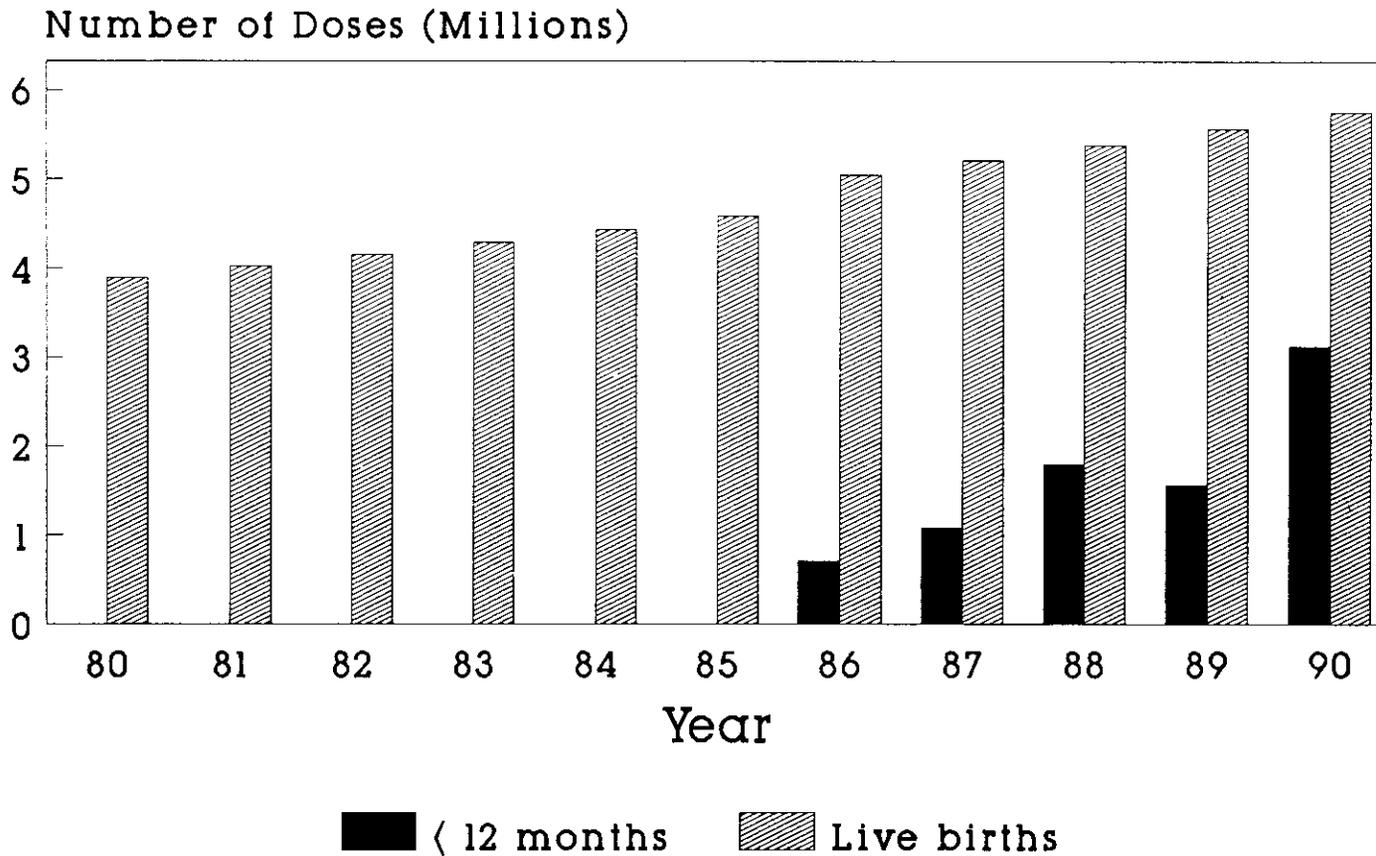
SOURCE : FMOH, EPI/CDD UNIT

Measles Vaccinations: Doses < 12 Months and Total Doses Nigeria, 1980 - 1990



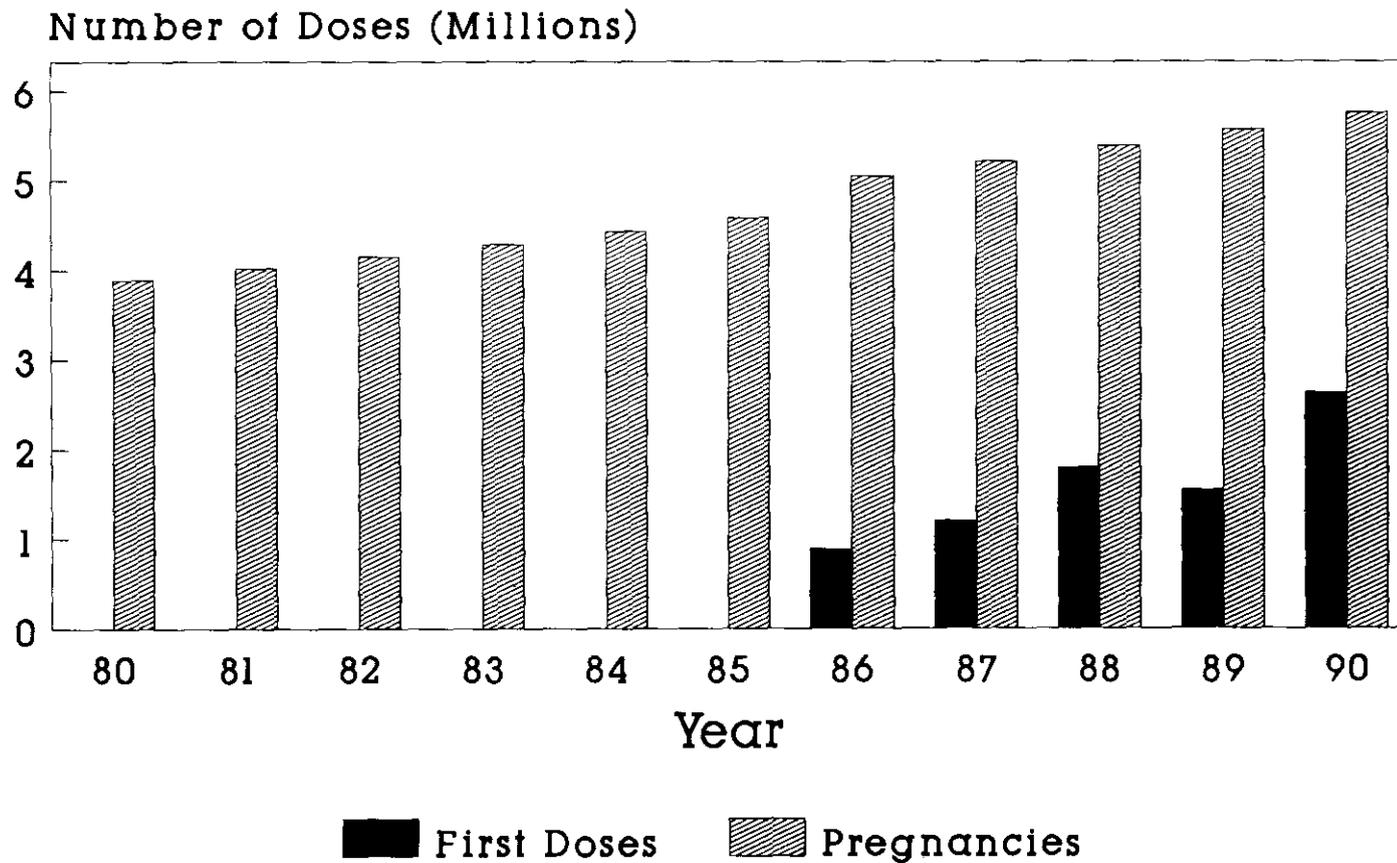
SOURCE : FMOH, EPI/CDD UNIT

Measles Vaccinations: Doses < 12 Months and Number of Live Births Nigeria, 1980 - 1990



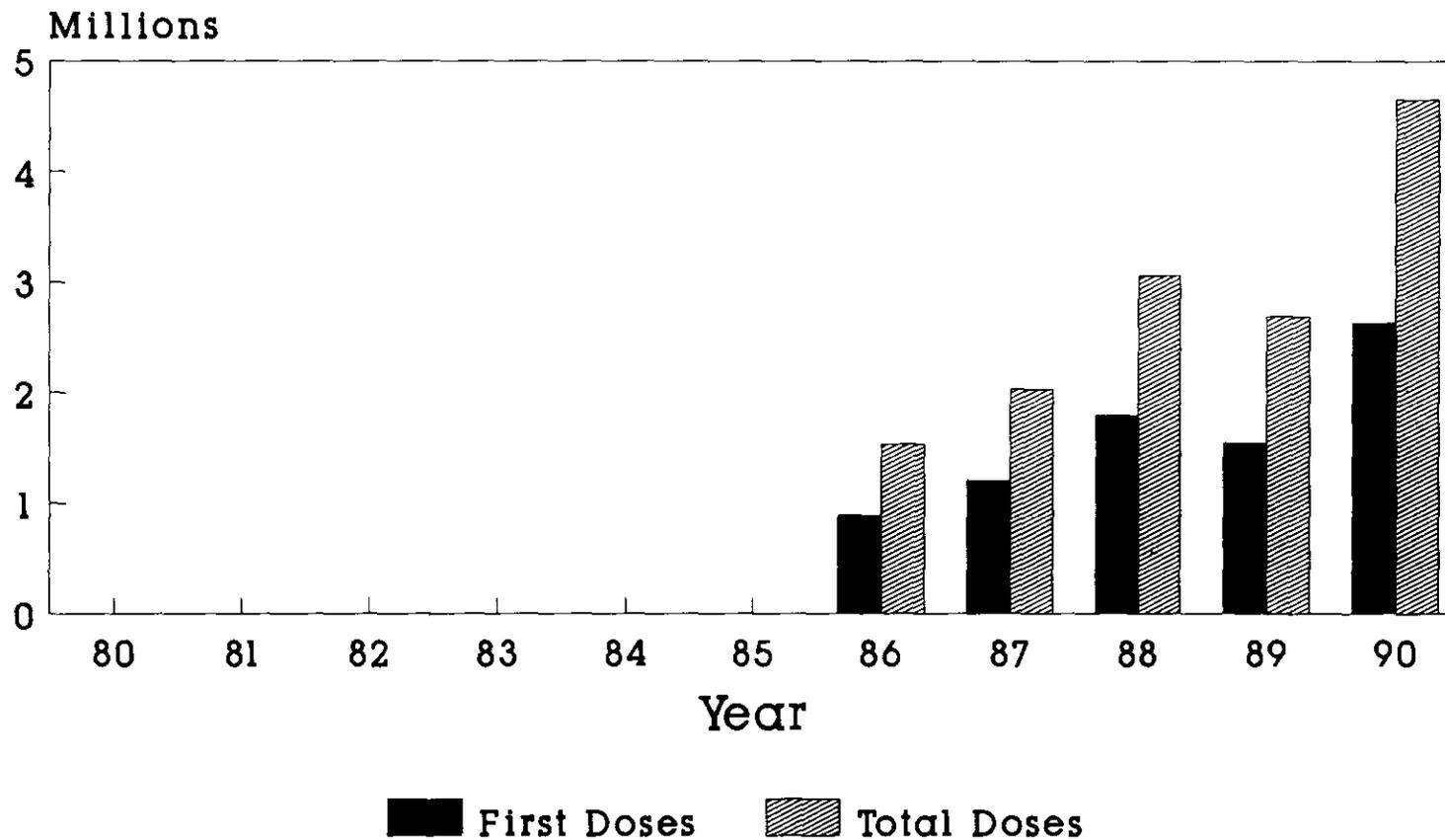
SOURCE : FMOH, EPI/CDD UNIT

Tetanus Toxoid: First Doses and Number of Pregnancies Nigeria, 1980 - 1990



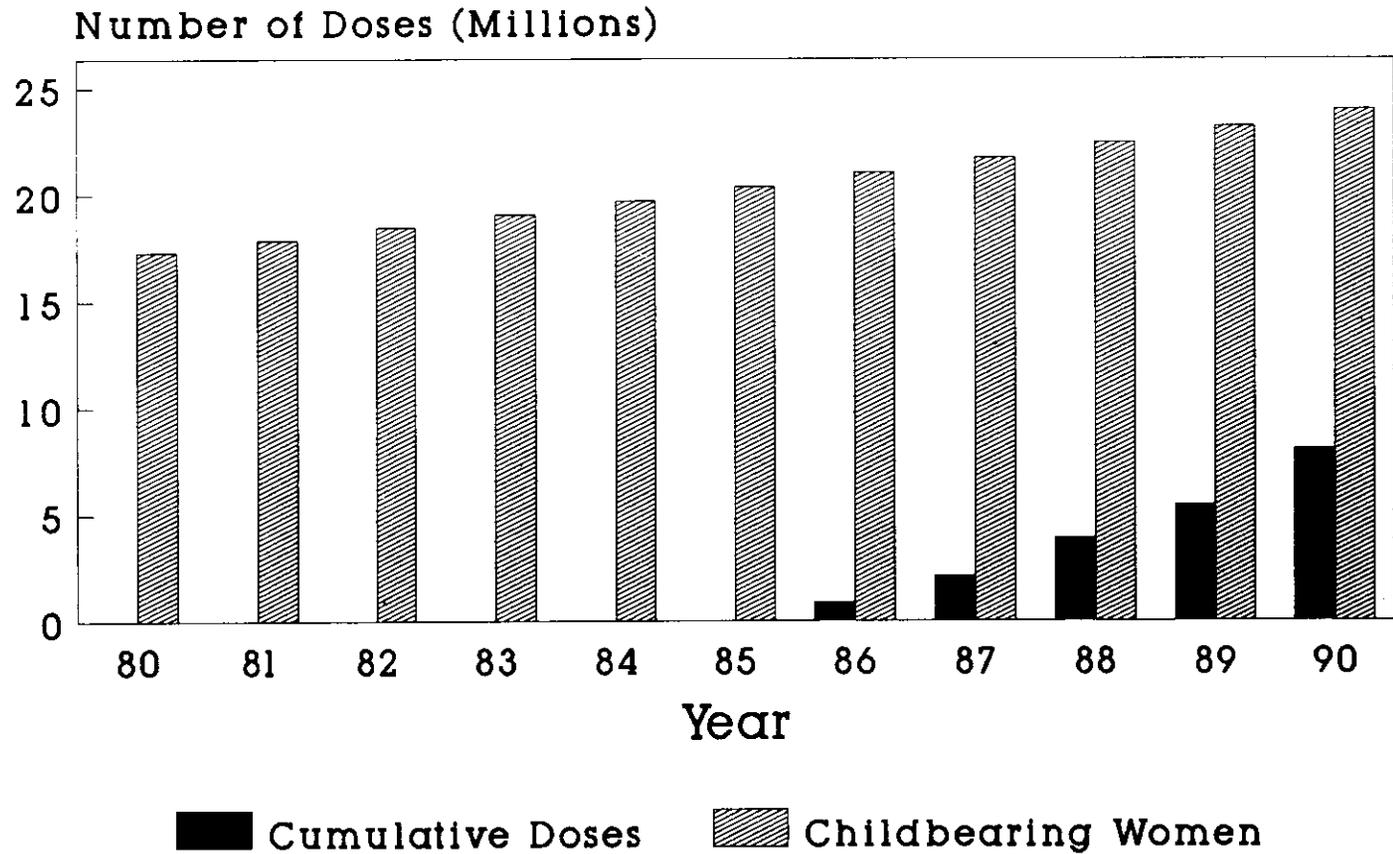
SOURCE : FMOH, EPI/CDD UNIT

Tetanus Toxoid: First and Total Doses Given to Pregnant Women Nigeria, 1980 - 1990



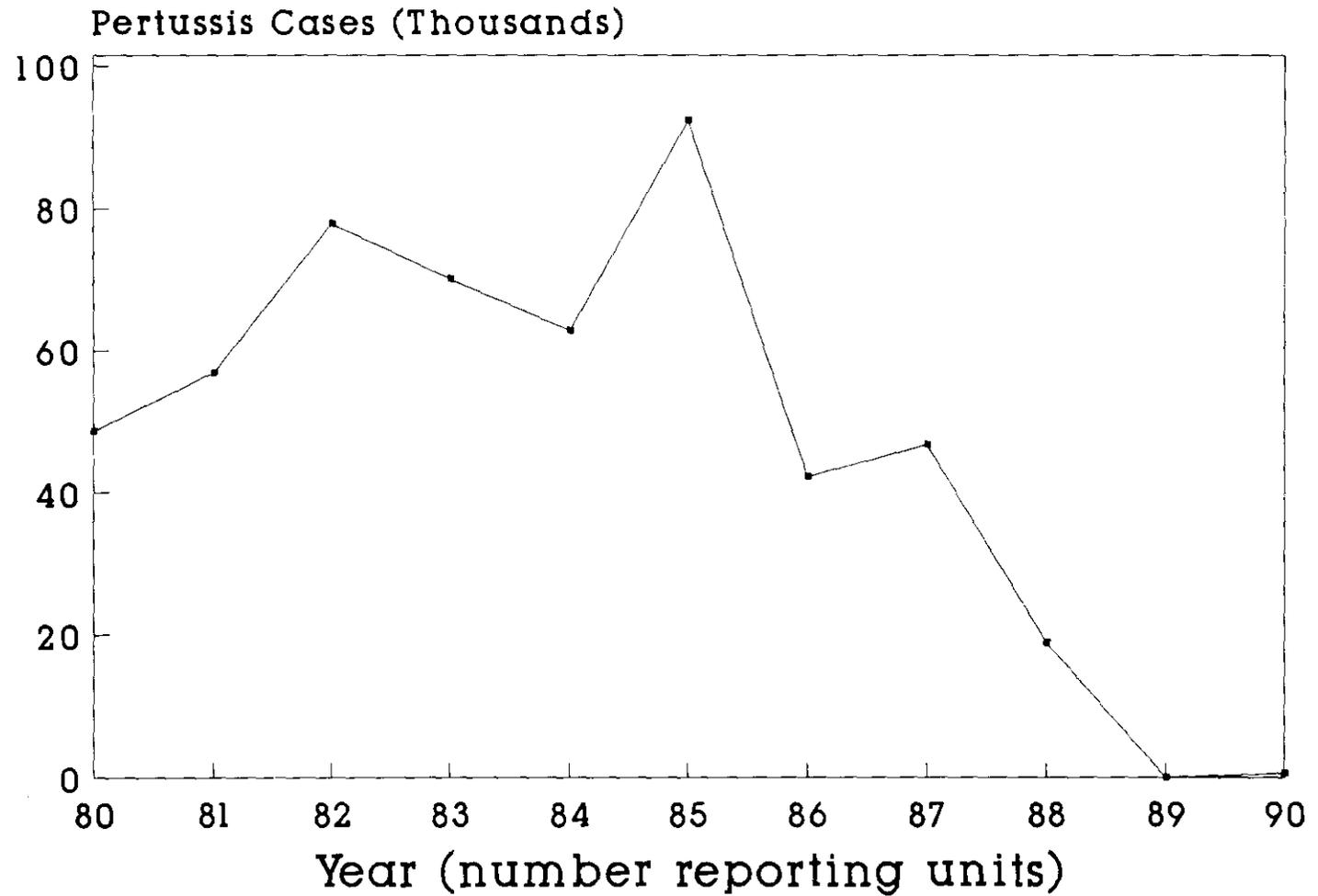
SOURCE : FMOH, EPI/CDD UNIT

Tetanus Toxoid: Cumulative First Doses and Women of Childbearing Age Nigeria, 1980 - 1990



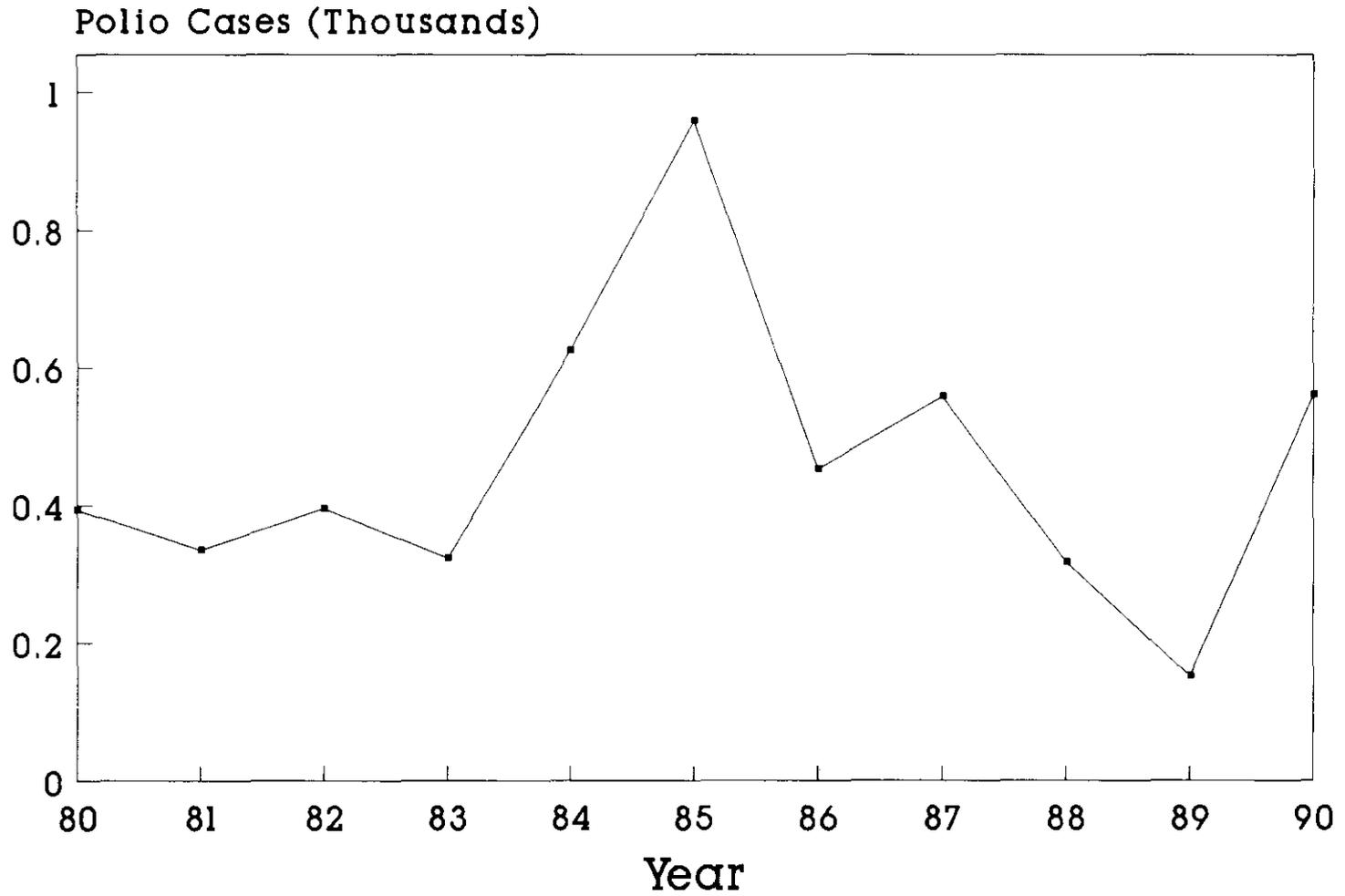
SOURCE : FMOH, EPI/CDD UNIT

Pertussis Cases Reported by Year Nigeria, 1980 - 1990



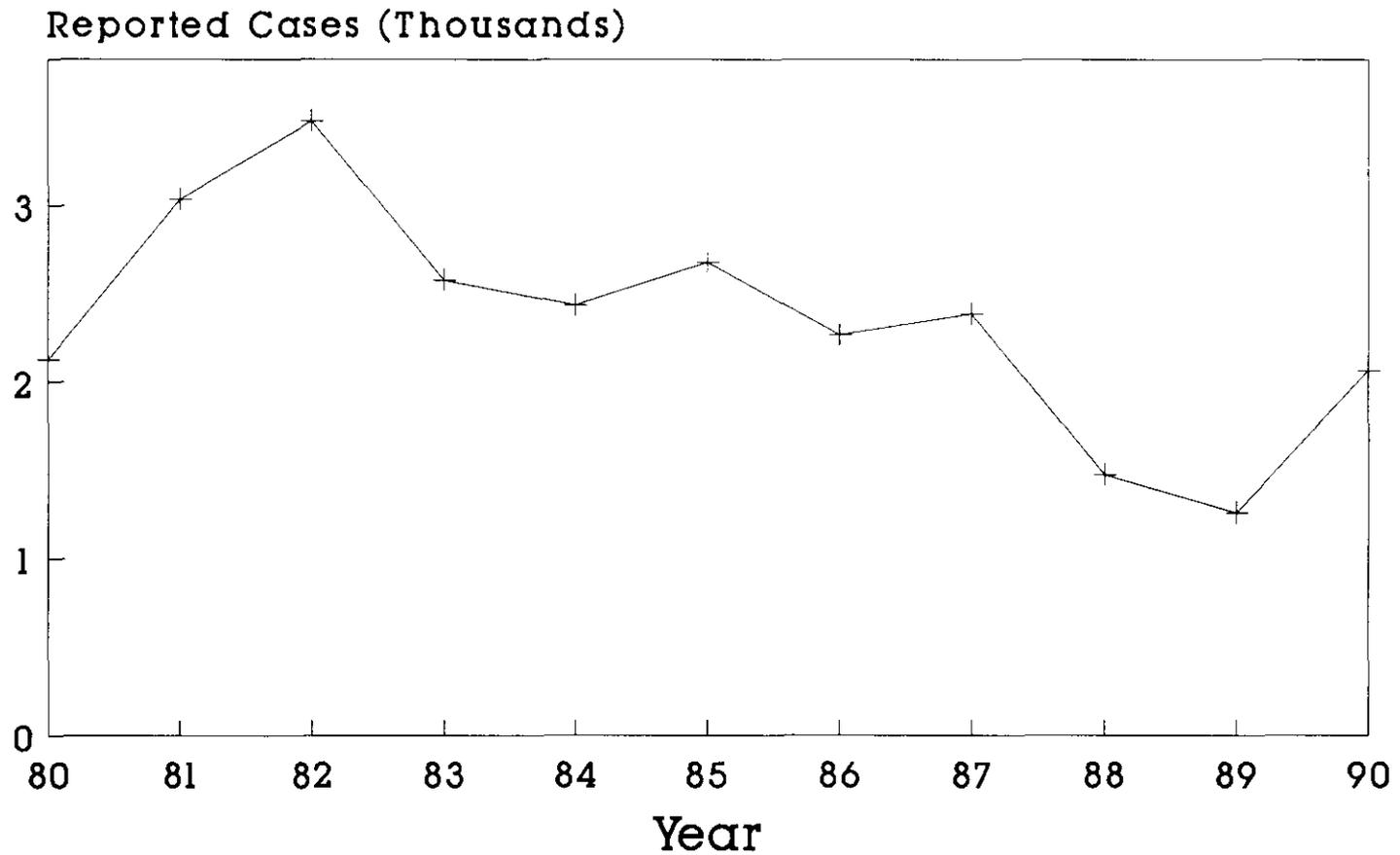
SOURCE : FMOH, EPID DIVISION

Polio Cases Reported by Year Nigeria, 1980 - 1990



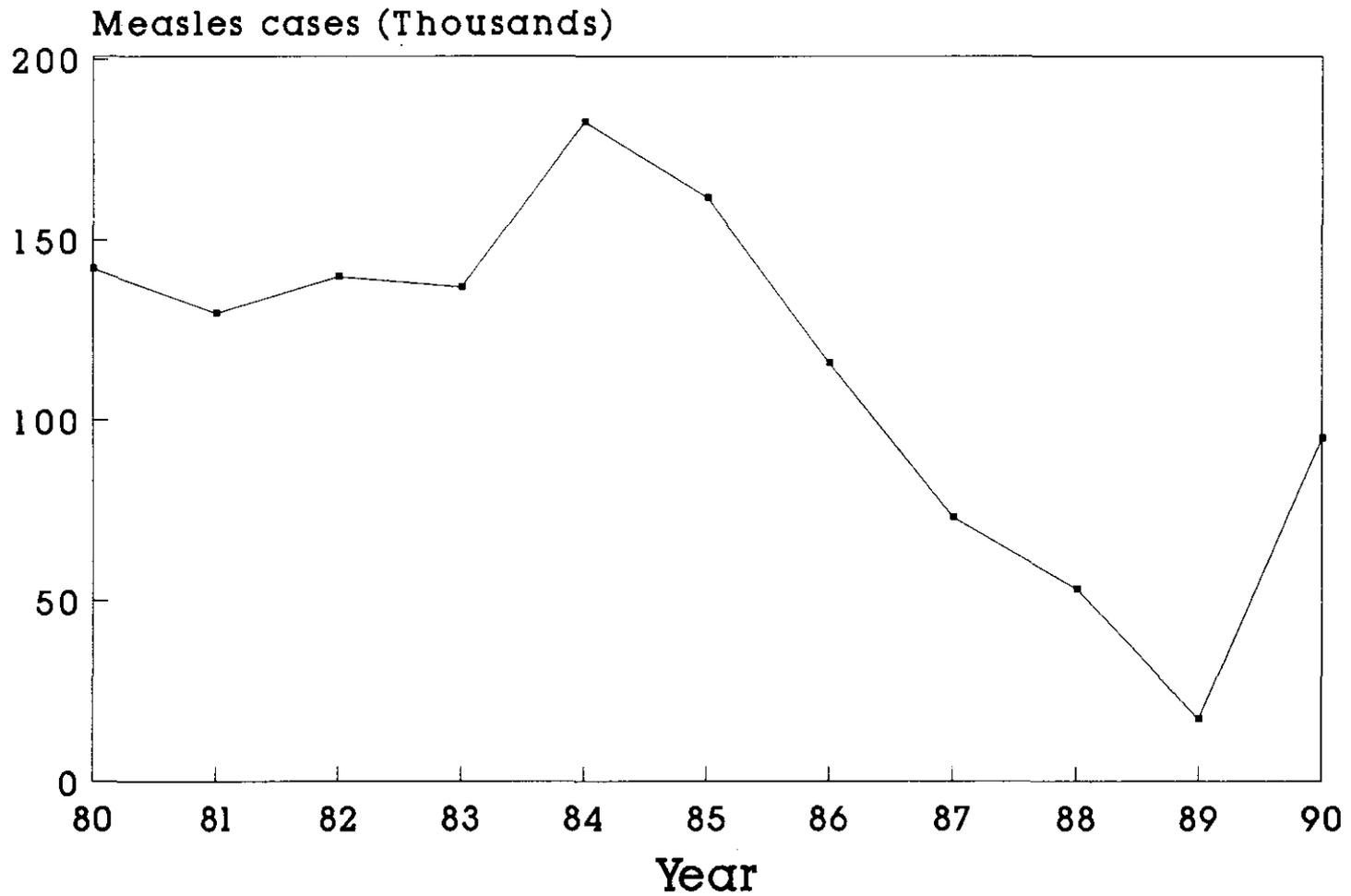
SOURCE : FMOH, EPID DIVISION

All Tetanus Cases Reported by Year Nigeria, 1980 - 1990



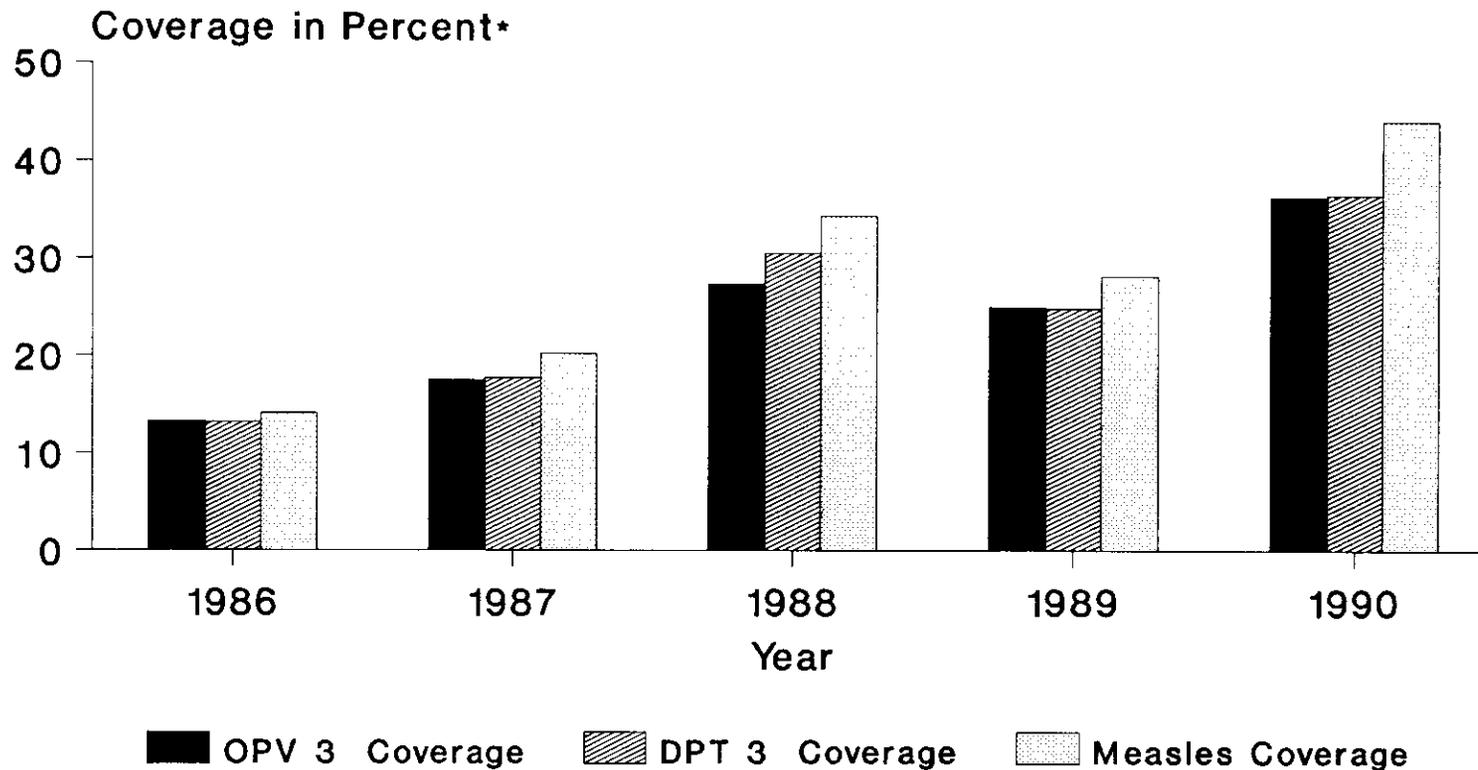
SOURCE : FMOH EPID DIVISION

Measles Cases Reported by Year Nigeria, 1980 - 1990



SOURCE : FMOH EPID DIVISION

OPV 3, DPT 3, and Measles Vaccine Coverage, For Under One Nigeria, 1986 - 1990

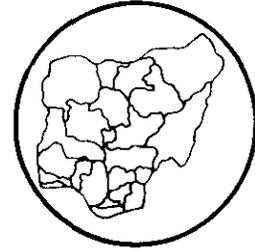


* Vacc. <1 divided by Live Births X 100

SOURCE : FMOH EPI/CDD Unit



NIGERIA BULLETIN OF EPIDEMIOLOGY



Volume 1 Number 1

Maiden Issue

February 1991

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Federal Ministry of Health, Lagos, Nigeria

Introduction

By the Honourable Minister of Health -
Professor O. Ransome-Kuti

This is the inaugural issue of the *Nigeria Bulletin of Epidemiology*, prepared by the Epidemiological Division of the Department of Disease Control and International Health of the Federal Ministry of Health.

The *Bulletin* will provide data and situation reports on selected diseases, compiled from information received from health institutions and organizations. It will also report on issues of public health significance. This issue, for example, reports on the paracetamol syrup poisoning outbreak, on the new Immunization Policies and on highlights of the International Primary Health Care Conference held in Abuja in 1990.

Nigeria's health programmes are geared toward the attainment of Health for All by the Year 2000. To reach this goal, we must be able to control communicable and non-communicable diseases in appropriate and affordable ways.

Several factors limit progress - lack of awareness, inadequate information on the problems posed by communicable and non-communicable diseases, and constraints on human and material resources.

Disease control programmes will only be effective when reliable mechanisms of data collection, analysis and retrieval are in place, and when information on disease trends is exchanged among all health institutions in the Federation.

With full cooperation of all persons and organizations concerned, the objectives of the

Bulletin, and indeed, the overall objective of providing Health For All will be achieved.

Editorial

A reliable system of disease surveillance is a *sine qua non* for planning, implementing and evaluating disease control programmes. Surveillance data help determine the priorities which guide the effective and efficient use of scarce resources.

The consequences of inadequate surveillance can be grave. Outbreaks of Yellow Fever in Nigeria in 1986 and 1987 were not recognized until three to five months after they began. Hundreds of preventable deaths occurred, and a greater number

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of persons fell ill. More money, time and scarce resources were needed to control the epidemics than would have been necessary had the outbreaks been detected earlier.

Nigeria is improving disease surveillance systems. In particular, a new system for disease notification came into operation in January 1990. Full benefits of this system will not be realised until it is complemented by the analysis and interpretation of the data gathered, and the dissemination of the interpreted data to appropriate authorities, agencies and individuals.

GOALS OF THE BULLETIN

The *Nigeria Bulletin of Epidemiology* is a part of this effort, and will:

- disseminate information on disease trends in Nigeria
- report on public health issues and policy
- facilitate exchange of health information among people and organizations delivering health care in Nigeria
- increase awareness of the importance of disease surveillance

The *Bulletin* will provide technical information and evaluation of disease control programmes. It will present summaries and analyses of disease notification data received from the States and the Federal Capital Territory, Abuja. It will feature reviews of diseases of public health importance in Nigeria, including yellow fever, cerebro-spinal meningitis, cholera, Guinea Worm, AIDS, tuberculosis, Hansen's Disease (leprosy), tetanus,

measles, polio, onchocerciasis and schistosomiasis. Other diseases will be covered as required.

The *Nigeria Bulletin of Epidemiology* will be distributed free to institutions at the Federal, State and Local Government levels, to Medical Schools and Teaching Hospitals, to Schools of Health Technology, Nursing Schools and Voluntary Health Agencies.

Health Information System development differs throughout Nigeria - the amount and the quality of data available vary a great deal. This *Bulletin* hopes to stimulate continual improvement of the Health Information System in Nigeria. A good Health Information System is useful, simple, flexible, complete, accurate and timely - these criteria are further elaborated in the Figure entitled "*Health Information System*".

The editors hope the *Bulletin* will reflect the changing disease patterns and perceived health problems in Nigeria, and that the *Bulletin* will respond to the epidemiologic information needs of our national strategies for achieving Health For All Nigerians by the Year 2000.

The Bulletin welcomes the views of its readers, though letters may be edited for clarity and space. The Editor invites readers to submit articles for consideration for publication. Articles longer than 500 words may be edited for space.

HEALTH INFORMATION SYSTEM

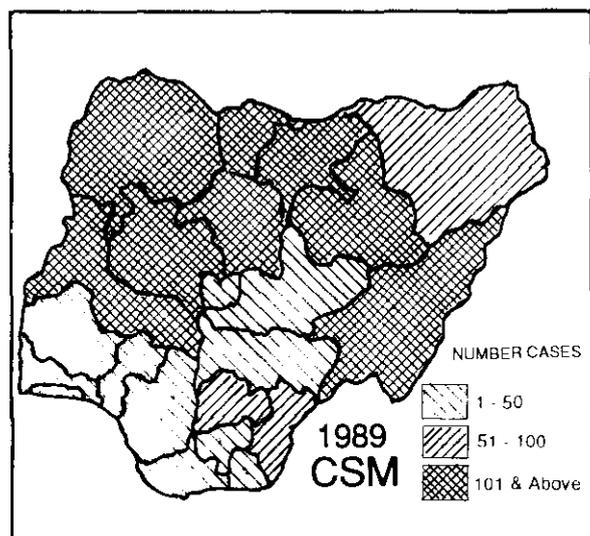
USEFUL	Information helps to assess and to improve efforts to control diseases
SIMPLE	Reporting methods are appropriately detailed, functional and clear
FLEXIBLE	Reporting responds to changing disease patterns and priorities
COMPLETE	Data collection is complete, or when appropriate, representative
ACCURATE	Sensitivity and specificity are high
TIMELY	Forms are promptly submitted at all levels, promptly analysed, and feedback provided

Epidemic Disease Control

Dr. Gabi Williams

An epidemic can be simply defined as "the unusual occurrence of cases of a particular disease in a given place and given time". Outbreaks of communicable diseases have been increasing world-wide. Reasons for this include faster travel and greater distances covered, urbanization, overcrowding, poor nutrition, and lack of safe water and sanitation. Poverty increases the risk of acquiring a disease, and its consequences.

Between 1986 and 1989, Cerebro-spinal meningitis (CSM) ravaged the northern states of the Federation resulting in many cases and deaths.



States Reporting Cerebro-Spinal Meningitis, 1989

(See the Figure entitled "States Reporting Cerebro-Spinal Meningitis, 1989".)

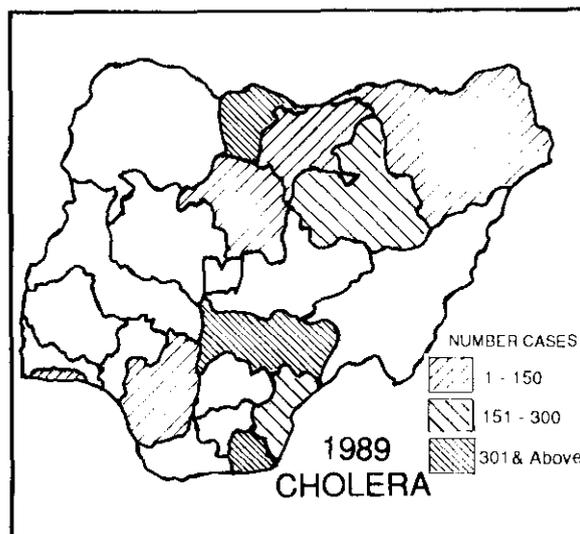
The Bendel state experience of Lassa Fever epidemics in 1989 will for long be remembered. We have also experienced sporadic outbreaks of cholera. (See the Figure entitled "States Reporting Cholera, 1989").

In the last five years three serious Yellow Fever epidemics have occurred in Nigeria. In Oyo State alone, hundreds of lives were lost during the 1986/87 Yellow Fever epidemic before it spread to other states in the country. See the Figure entitled "States Reporting at Least One Case of Yellow Fever, 1987 - 1990" (next page). The 1990 map reflects reports received up to 5th February, 1991.

The Figure entitled *Vaccine Distribution* (page 5) shows the doses of Yellow Fever and CSM Vaccine supplied to the States in 1990.

Each epidemic outbreak obeys its own dynamics, governed by the nature of the disease, the mode of transmission and the environment. But all epidemics are expensive in terms of human and material resources. An epidemic places an additional burden on health facilities, it threatens people's health and lives and disrupts the socio-economic fabric of the affected community and the nation.

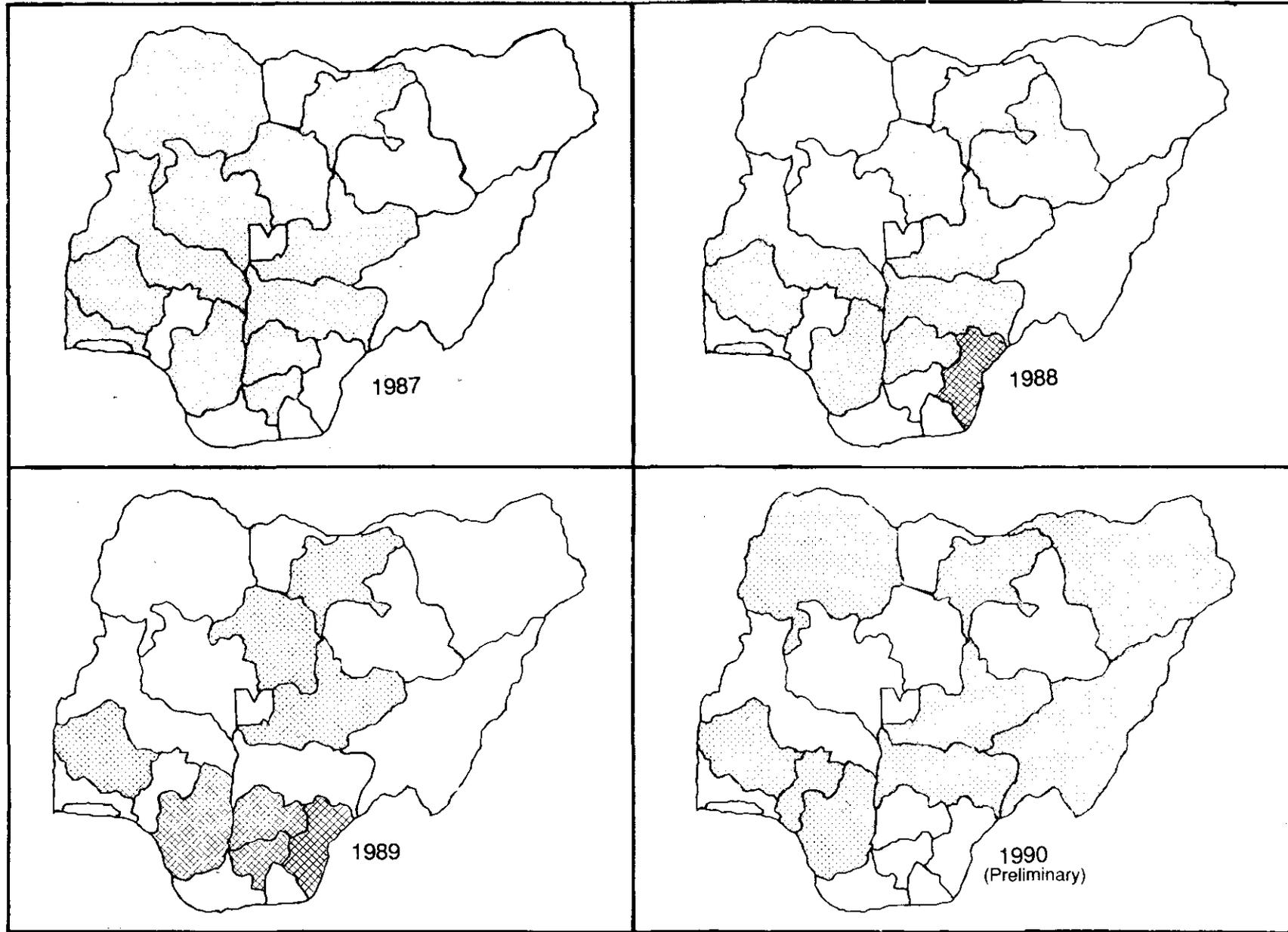
To minimize these effects there must be quick intervention aimed at providing medical care for the affected persons and containing the outbreak. Available infrastructures must be improved so that any outbreaks will be quickly recognized and



States Reporting Cholera, 1989

controlled. The role of an effective surveillance system backed by adequate laboratory facilities must constantly be emphasized.

Epidemics often occur suddenly. We must have surveillance systems and control measures in place. We have put into operation the guidelines provided by the National Council on Health, but success depends largely on the alertness, commitment and dedication of people entrusted with making the system work. Health personnel in the state epidemiological units and in the LGAs have a very important role to play.



States reporting at least one case of Yellow Fever, 1987 - 1990

STATE	Doses YF Vaccine Supplied	Doses CSM Vaccine Supplied
Abuja	130,000	0
Akwa-Ibom	120,000	0
Anambra	250,000	35,000
Bauchi	310,000	50,000
Bendel	250,000	0
Benue	50,000	0
Borno	550,000	130,000
Cross River	110,000	0
Gongola	300,000	0
Imo	450,000	90,000
Kaduna	200,000	0
Katsina	150,000	0
Kano	120,000	110,000
Kwara	100,000	0
Lagos	180,000	75,500
Niger	80,000	138,000
Ogun	0	2,000
Ondo	100,000	0
Oyo	150,000	75,000
Plateau	210,000	0
Rivers	100,000	0
Sokoto	270,000	150,000
Other-Armed Forces, etc	78,950	0
TOTAL	4,258,950	855,500

Vaccine Distribution to the States

Acute Renal Failure Secondary to Ingestion of Adulterated Paracetamol Syrup, Plateau and Oyo States, June - September 1990

Between June and September 1990, at least 111 children died of acute renal failure after ingesting paracetamol syrup, containing the potent toxin, diethylene glycol. Diethylene glycol was used as a solvent in the preparation of the paracetamol syrup, rather than the proper ingredient, propylene glycol. Cases of renal failure occurred in Oyo and Plateau States, involving children between six

months and six years of age (See *Epidemic Curve* on page 6).

Acute renal failure occurred in children who had been given paracetamol syrup prepared at two hospital pharmacies, under the supervision of qualified pharmacists.

All affected children had a history of a previous minor illness which was treated with paracetamol syrup. In both Plateau and Oyo states, cases of renal failure were seen soon after the involved hospital pharmacies began to dispense newly prepared paracetamol syrup.

The "propylene glycol" was obtained from local chemist shops, which had got their supply from shops in Onitsha, Anambra State. The substance sold by the Onitsha traders as "propylene glycol" was in fact diethylene glycol, which had been diverted from oil drilling sites, run by multi-national companies. These companies had legally imported diethylene glycol for their legitimate drilling operations.

Laboratory analysis showed that diethylene glycol was present in the syrup remaining in bottles given to children who died, in samples of "propylene glycol" from the hospital pharmacies, and in material seized from traders in Onitsha by the Task Force on Fake and Counterfeit Drugs, Food and Drug Administration and Control, FMOH.

Response to the Outbreak:

The FMOH acted to control the outbreak by:

- banning the use of paracetamol syrups
- surveillance to identify new cases
- community outreach to remove unused medications from homes
- investigating and tracing the source of the toxin
- seizure of 348 gallons of diethylene glycol, which could have been used for future batches of the paracetamol syrup.
- arrest of persons in Onitsha and Port Harcourt for involvement in the sale of diethylene glycol

requiring that manufacturers demonstrate that propylene glycol used by them is genuine

Discussion

It is clear that in Nigeria the sale of chemicals, including poisons, is not adequately monitored or controlled. Nor is there adequate control and supervision of personnel in some of the places where pharmaceutical products are prepared, and are sold.

Because fake drugs are easily available, and are invariably cheaper than genuine ones, they appeal to the public.

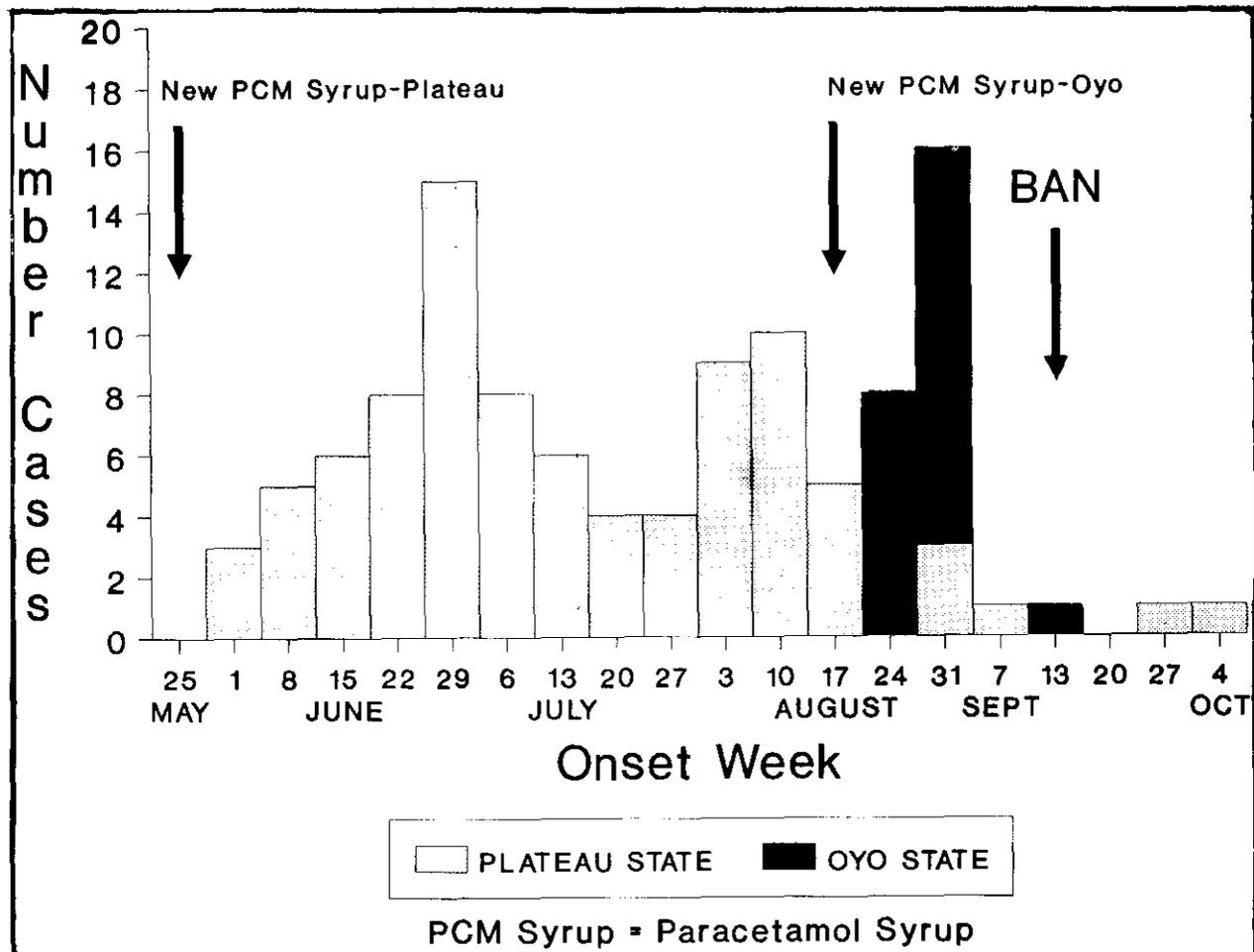
Furthermore, the oil companies apparently do not have adequate security on their premises to

ensure dangerous chemicals do not get into the wrong hands. In fact, there is presently nothing to prevent incidents like this occurring in the future.

The only other large outbreak of diethylene glycol poisoning occurred in 1937 in the United States, when it was also used to prepare a commonly used medicine.

Geiling and Cannon, investigators of that outbreak, wrote:

"There is no short cut from the chemical laboratory to clinic, except one that passes too close to the morgue. Human lives have been sacrificed by the failure to meet standards of preliminary tests and many more lives will be sacrificed if such standards are not put into effect."



Cases of Acute Renal Failure, by Week of Onset of Anuria Plateau and Oyo States, May to September 1990

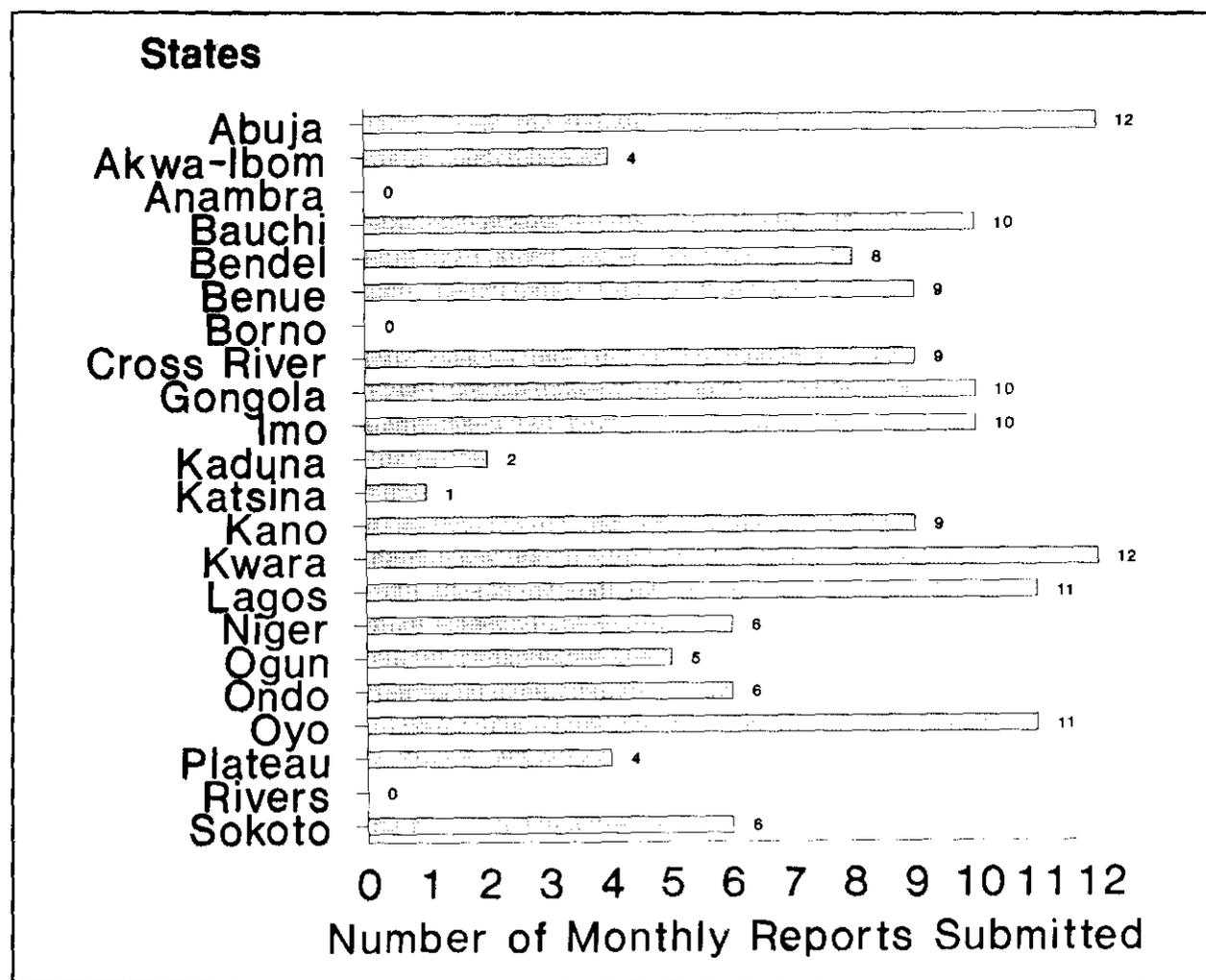
Geiling, E.M.K.; Cannon, P.R. "Pathologic Effect of Elixir of Sulfonamide (diethylene glycol) Poisoning: A Clinical and Experimental Correlation" *Journal of the American Medical Association* **111** (919-926) 1938.

Reported by Epidemiological Division, Disease Control and International Health Department and the Task Force on Fake and Counterfeit Drugs, Food and Drug and Administration and Control, FMOH; Departments of Virology and Preventive and Social Medicine, University of Ibadan; Combatting Childhood Communicable Diseases Project (CCCDI/USAID), University of Jos Teaching Hospital and Plateau State Ministry of Health, Jos.

Disease Surveillance and Notification

In the wake of the 1986/87 outbreak of Yellow Fever, and in pursuance of the Federal Government's determination to combat the spread of all communicable diseases, the Honourable Minister of Health, Professor Olikoye Ransome-Kuti set up a National Task Force on Epidemic Diseases.

Early on, the Task Force realized that poor disease surveillance and notification hinder efforts to control epidemics. In the past, routine reporting by some States has not been complete, or timely. The Figure "Notifiable Disease Reporting, 1990" shows the number of reports submitted by each state in the Federation in 1990.



Notifiable Disease Reporting, 1990, by State (as of 1st February, 1991)

A National Workshop on Disease Surveillance was held in January 1988. Top professionals from the Ministries of Health and State Hospitals/Health Management Boards from the 21 States of the Federation and the Federal Capital Territory, Abuja, representatives of Teaching Hospitals, of the Army, the Police, the Navy, the Air Force, international agencies and the Federal Ministry of Health met in Lagos in 1989 and recommended a new system of disease notification. The National Council on Health approved the system in 1989.

Selected Federal, State and Local Government officials were trained at zonal workshops on the philosophy and operation of the new system. The training of responsible officers in each State and Local Government Area is ongoing.

New System for Disease Notification

The new system relies on routine reports which are sent in every month, using Form DSN-002 (See Figure entitled Form DSN-002) and on emergency notification, in the case of epidemics, using Form DSN-001 (See Figure entitled Form DSN-001). The flow of information from health facility to the Federal level is seen in the Figure entitled *Flow of Information from Health Facility to Federal Level*.

Routine or Regular Monthly Notification

There are forty "Notifiable Diseases". Some of these diseases were selected because they can pose an immediate threat to the health of the population. Others were selected because they are being addressed by Control Programmes and their incidence needs to be monitored to evaluate the impact of the Control Programme. Cases and deaths from these diseases should be reported every month using the notification form DSN-002. This replaces the previous weekly reports.

All health institutions should have completed this form by the end of the first week of the month after the month being reported on. That is, the report of cases from January should be completed by the first week of February.

The Local Government Area (LGA) Health office is responsible for collecting the completed

form each month, if it has not already been sent by the health facilities and institutions.

Each LGA Health Office will collate data from all health institutions in that LGA using DSN-002. The LGA makes two copies. One remains at the LGA and the second is sent to the State Ministry of Health (Epidemiological Unit) before or by the end of the 4th week after the month being reported on. Thus, the report of January cases should arrive at the State level by the last week of February.

In turn, the Epidemiological Unit of the State Ministry of Health prepares returns for the state as a whole. Four copies are made - two should reach the Federal Ministry of Health (Epidemiological Division) by the end of the sixth week after the month being reported on (e.g. mid-March for January data); the third copy is sent to the Statistics Division of the State Ministry of Health. The State Epidemiological Unit retains the fourth copy.

At the national level, the Epidemiological Department keeps one copy of each state's report for its own records, for analysis, and any needed action. The second copy goes to the Planning Research and Statistics Division of the Federal Ministry of Health.

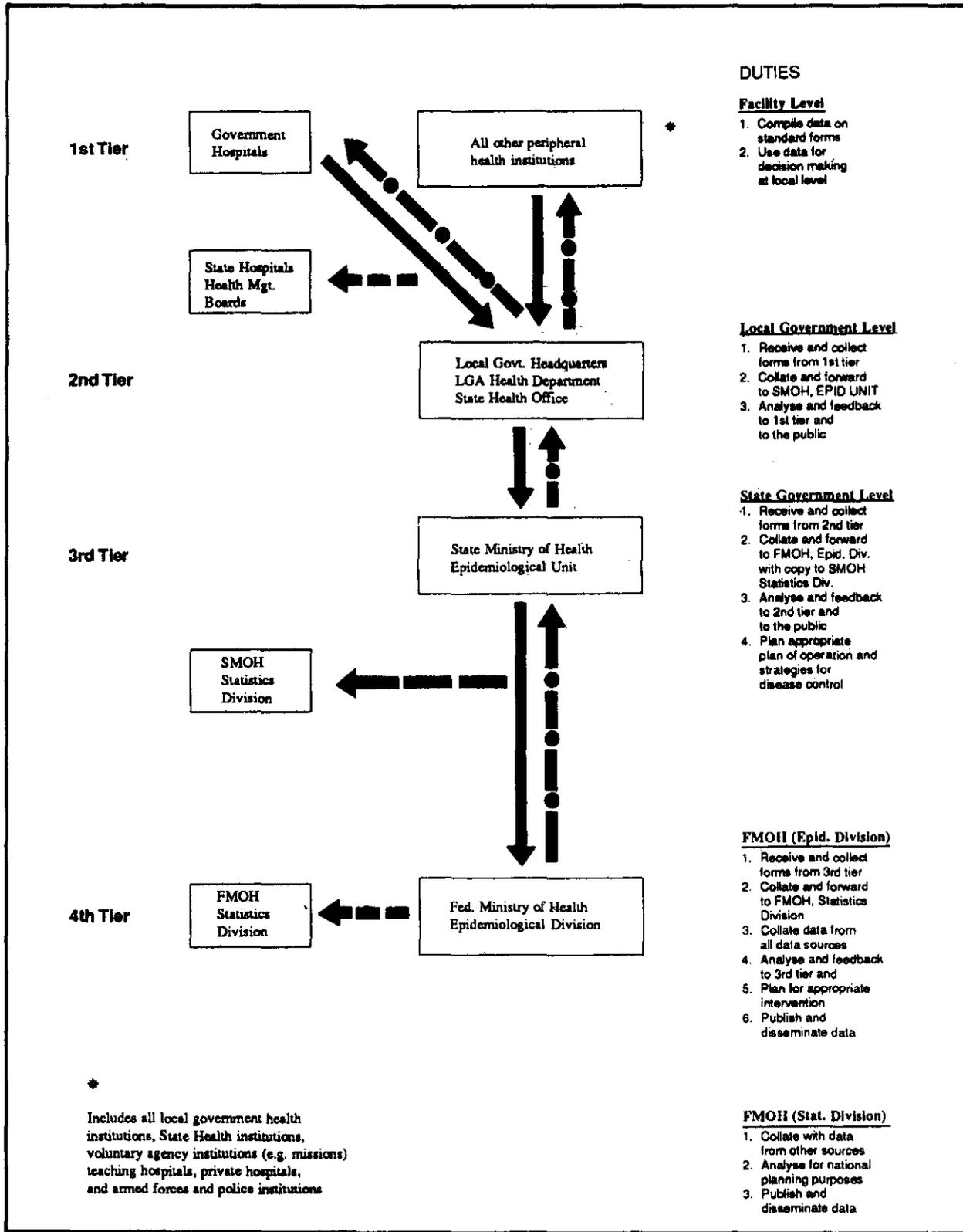
Routine notification data from health facilities should reach the Federal level in six weeks. For example, returns in respect of the month of June 1990 should have reached the LGA Health office by mid-July 1990, the State Ministry by the end of July 1990 and the Federal Ministry by mid-August 1990.

Emergency Notification

Immediate or Emergency Notification is required in two situations:

1. when any case or death due to any one of the following nine diseases is suspected: AIDS, Human Anthrax, Cerebro-spinal Meningitis, Cholera, Plague, Human Rabies, "Smallpox", Typhoid and Paratyphoid Fevers, and Yellow Fever.

FLOW OF INFORMATION FOR DISEASE NOTIFICATION



DUTIES

Facility Level

1. Compile data on standard forms
2. Use data for decision making at local level

Local Government Level

1. Receive and collect forms from 1st tier
2. Collate and forward to SMOH, EPID UNIT
3. Analyse and feedback to 1st tier and to the public

State Government Level

1. Receive and collect forms from 2nd tier
2. Collate and forward to FMOH, Epid. Div. with copy to SMOH Statistics Div.
3. Analyse and feedback to 2nd tier and to the public
4. Plan appropriate plan of operation and strategies for disease control

FMOH (Epid. Division)

1. Receive and collect forms from 3rd tier
2. Collate and forward to FMOH, Statistics Division
3. Collate data from all data sources
4. Analyse and feedback to 3rd tier and
5. Plan for appropriate intervention
6. Publish and disseminate data

FMOH (Stat. Division)

1. Collate with data from other sources
2. Analyse for national planning purposes
3. Publish and disseminate data

* Includes all local government health institutions, State Health institutions, voluntary agency institutions (e.g. missions) teaching hospitals, private hospitals, and armed forces and police institutions

2. when an epidemic of any disease or condition occurs. An epidemic is defined as:

"the occurrence of a number of cases of the disease or condition that is unusually large or unexpected for the given place and/or time."

REPORT IMMEDIATELY	
(1) Suspected cases or deaths from:	
- AIDS	- Anthrax
- CSM	- Cholera
- Plague	- Human Rabies
- Yellow Fever	
- Typhoid & Paratyphoid	
- "Smallpox"	
(2) An unusually large number of cases of a disease or condition.	

Use Form DSN-001 for emergency notification, and send the information by the fastest means available. This might be by telephone, telex, radio- phone, courier and so forth. Send in Form DSN-001 as well. Sending the information in by tele- phone, telex or courier is not a substitute for filling and sending in Form DSN-001.

Then send weekly follow-up reports on the progress of epidemic (or diseases listed above) until there have been three consecutive weeks with "nil" cases reported.

PROGRESS

The Federal Ministry of Health printed and distributed forms DSN-001 and DSN-002 to States, to LGAs and to Federal health institutions. It is proposed that the FMOH continue print these forms, and to review and modify them when and as necessary. The system became operational in January 1990.

Disease notification has already improved. Routine returns have increased from about 30% to over 80% by the first half of 1990, and reports being received by the Federal Ministry of Health are more comprehensive than before. Immediate notification has improved even more significantly.

This has helped the FMOH take quicker action to monitor and control epidemics. Monthly Disease Notification Reports from the States, for January through December 1989 are seen on page 14.

PROBLEMS

- Not using the new system. Some States like Imo, Benue, Ogun and Ondo do not use the new forms, although their representatives attended the National Workshop and collected the new forms.
- Late reporting. States like Cross Rivers, Kaduna, Akwa Ibom, Katsina and Rivers did not forward the reports for January - December, 1989 until July 1990. A delay of four months is common - e.g. report for January not sent until April.
- Reports not properly compiled. States like Sokoto, Kano, and Cross River send one report from each and every Local Government in their States instead of collating all reports from LGAs before forwarding them.
- Not including outbreak figures in routine monthly reporting. Imo and Bendel States, for example, did not report cases of Lassa Fever in their monthly notification forms.

The confident hope is that these and other problems will be surmounted with time as the benefits of the new system become increasingly clear, and as more health staff, particularly at LGA level, acquire proficiency in its operation. Regular training workshops for staff at health institution and LGA levels should facilitate this process.

Reported by Epidemiological Division, FMOH, Lagos

**MONTHLY DISEASE NOTIFICATION REPORTS FROM STATES
JANUARY - DECEMBER 1989.**

<u>DISEASES</u>	<u>Cases</u>	<u>Deaths</u>	<u>CFR-*</u>	<u>DISEASE</u>	<u>Cases</u>	<u>Deaths</u>	<u>CFR-*</u>
AIDS	38	14	36.8%	ONCHOCERCIASIS (RB)	3,687	12	0.3%
ANTHRAX (HUMAN)	1	0	0.0%	OPHTHALMIA NEONATORUM	6,546	30	0.5%
BRUCELLOSIS (HUMAN)	0	0	0.0%	PERTUSIS Whooping Cough	21,789	39	0.2%
CEREBRO-SPINAL MENINGITIS	6,842	968	14.1%	PLAGUE	0	0	0.0%
CHICKEN POX	13,429	61	0.5%	PNEUMONIA	111,713	359	0.3%
CHOLERA	1,059	60	5.7%	POLIO	455	9	2.0%
DIARRHOEA (SIMPLE)	65,588	132	0.2%	RABIES (HUMAN)	198	N/A	
DIARRHOEA (WITH BLOOD)	148,050	723	0.5%	SCHISTOSOMIASIS	11,830	7	0.1%
DIPHTHERIA	5,039	5	0.1%	SMALL POX	0	0	0.0%
DRACUNCULIASIS Guinea Worm	244	0	0.0%	SYPHILIS	1,579	0	0.0%
FILARIASIS	6,020	3	0.0%	STD (Not syphilis)	1,111	0	0.0%
FOOD POISONING	3,920	26	0.7%	TETANUS (NEONATAL)	498	91	18.3%
GONORRHOEA	30,749	10	0.0%	TETANUS (OTHER)	2,015	121	6.0%
HEPATITIS	2,911	21	0.7%	TRACHOMA	3,324	3	0.1%
LASSA FEVER	56	22	39.3%	TRYPANOSOMIASIS	1,482	7	0.5%
LEPROSY	11,353	27	0.2%	TUBERCULOSIS	13,342	324	2.4%
LOUSE BORNE Relapsing Fever	13,758	20	0.1%	TYPHOID AND PARATYPHOID	4,280	49	1.1%
LOUSE BORNE Typhus Fever	218	4	1.8%	VIRAL INFLUENZA	2,675	4	0.1%
MALARIA	984,983	1,423	0.1%	YAWS	478	0	0.0%
MEASLES	33,678	331	1.0%	YELLOW FEVER	2,092	406	19.4%

N/A - Not Available

CFR-* = Case Fatality Ratio

IMMUNIZATION SCHEDULE

TYPES OF VACCINE	AGAINST WHAT DISEASES	AGE GIVEN	DOSAGE	No. OF DOSES REQUIRED	MINIMUM INTERVAL	HOW GIVEN
BCG	TUBERCULOSIS	AT BIRTH 0-11 MONTHS	0.05 ML	1 DOSE	INTRADERMAL
DPT	DIPHThERIA } WHOOPING COUGH } TETANUS }	6 WEEKS 10 WEEKS 14 WEEKS	0.5 ML PER DOSE	3 DOSES	4 WEEKS	INTRAMUSCULAR
ORAL POLIO	POLIOMYELITIS	AT BIRTH 6 WEEKS 10 WEEKS 14 WEEKS	2 OR 3 DROPS PER DOSE	4 DOSES	4 WEEKS	ORAL
MEASLES	MEASLES	9 MONTHS	0.5 ML	1 DOSE	SUBCUTANEOUS
TETANUS TOXOID	TETANUS	TT-1 At first contact or as early possible. TT-2 At least four weeks after TT-1 TT-3 At least 6 months after TT-2 or during subsequent pregnancy. TT-4 At least one year after TT-3 or during subsequent pregnancy. TT-5 At least one year after TT-4 or during subsequent pregnancy.	0.5 ML PER DOSE	5 DOSES	4 WEEKS	INTRAMUSCULAR

New Immunization Policy

The National Council of Health adopted new immunization policies for Polio and Tetanus Toxoid, following the National In-Depth Review of EPI/CDD Programmes in November 1989. The policies are consistent with those of other countries in the WHO AFRO Region.

Polio at Birth

Give a dose of Oral Polio Vaccine at birth, at the same time as BCG. This dose, designated OPV 0 ("Polio-zero"), will be monitored as OPV 0. Record OPV 0 on the infant's Road to Health Card or vaccine card, and in the vaccine register.

Continue the present three doses of OPV as before: namely, OPV 1 at six weeks, OPV 2 at ten weeks and OPV 3 at fourteen weeks of age.

ORAL POLIO

- OPV 0 - at birth
- OPV 1 - at six weeks
- OPV 2 - at ten weeks
- OPV 3 - at fourteen weeks

Tetanus Toxoid Five Dose Schedule

The tetanus toxoid immunization schedule for pregnant women and women of child bearing age

was modified to include five doses in women of child bearing age, as opposed to two doses for pregnant women.

Immunization posters with the changes are available from the EPI Programme Office, Primary Health Care Department, Onikan Health Centre, Lagos.

The Nigeria Immunization Coverage Survey took place in February 1991 and the results will be reported in a future of the *Nigeria Bulletin of Epidemiology*.

TETANUS TOXOID FIVE DOSE SCHEDULE

- TT 1 = at 1st contact and as early as possible in pregnancy
- TT 2 = at least 4 weeks after TT 1
- TT 3 = at least 6 months after TT 2
- TT 4 = at least 1 year after TT 3
- TT 5 = at least 1 year after TT 4

Reported by EPI Programme, PHC Department, FMOH, Lagos

Primary Health Care Conference Highlights

International Conference on Primary Health Care, Abuja, Nigeria 19-25 August 1990

An International Conference on Primary Health Care was held in Abuja in August 1990. Over 400 invited experts and practitioners of Primary Health Care (PHC) attended.

The Conference commended the government for adopting a National Health Policy based on PHC and for its commitment to the pursuit of Health for All by the Year 2000.

The Conference called on all countries to implement PHC, using appropriate political and administrative means to direct resources to areas of greatest need.

KEY ISSUES AND RECOMMENDATIONS

Key issues brought out during the Conference included the need to:

Establish a National Commission for PHC in order to guarantee the position of PHC in the

health system and to assure adequate financial resources.

- Work toward equity and social justice in the organization of health care services. Achieve them through participatory, bottom-up community-based health planning, and equitable resource allocation.
- Re-orientate the existing health system according to principles of PHC.
- Use surveillance to identify families in greatest need and target services to meet their needs.
- Promote horizontal and vertical integration of services. Encourage integration by strong leadership, team spirit, and cooperation

among decision makers, sectoral heads and donor agencies.

- Include knowledge and skills for PHC in the training of all cadres of health workers.
- Train key LGA staff in supervisory and management skills.
- Establish sound management so PHC services will respond to needs and make the best use of resources. LGAs will be responsible for Primary Health Care in their areas, and will need financial and technical assistance. Better logistic support for PHC at Village, District, Local Government headquarter level is vital.
- Emphasize that a country must define its own health needs and priorities in order to coor-

TOPIC	INDICATOR
EPI Coverage	Percent of Children Fully Immunized at One Year of Age
Ante-Natal Care	Percent of Pregnant Women fully Immunized with Tetanus Toxoid by 8th Month of Pregnancy
Nutrition - Pregnant Women	Percent of Newborns weighing more than 2500 grammes
Nutrition - Children 0-3 Years Old	Percent of Children 0-3 Years Old, weighing above the Third Percentile
Health Care Coverage Pregnant Women	Percent of Deliveries Attended by a trained Health Worker or TBA
Family Planning	Percent of Women of Reproductive Age Using a Modern Method of Family Planning
Access to Health Services	Percent of the Population living within 5 kms or 1/2 Hour of a Health Facility or Village Health Worker
Potable Water	Percent of the Population living within 200 meters of a Source of Potable Water
Latrines	Percent of the Population living within 50 meters of a pit latrine or toilet
Essential Drugs	Percent of Village Health Workers / Health Facilities with Drugs Continuously Available

Priority PHC Topics and National Indicators

dinate the activities of international organizations and bilateral agencies.

Focus on PHC Information System

A Health Information System (HIS) is an indispensable tool for monitoring the implementation of PHC. Information collected must be clearly stated and be relevant to PHC objectives and indicators.

Information needed to monitor PHC has been adapted to the level of Local Health Workers, and it is a priority to train LGA (and other) staff to collect and use the information. Decisions at all levels should be based on data. (Priority Primary Health Care Topics and Indicators are seen in the Figure "Priority PHC Topics and National Indicators".

Reported by Department of Primary Health Care, FMOH, Lagos

Guinea Worm Eradication Target: 1995

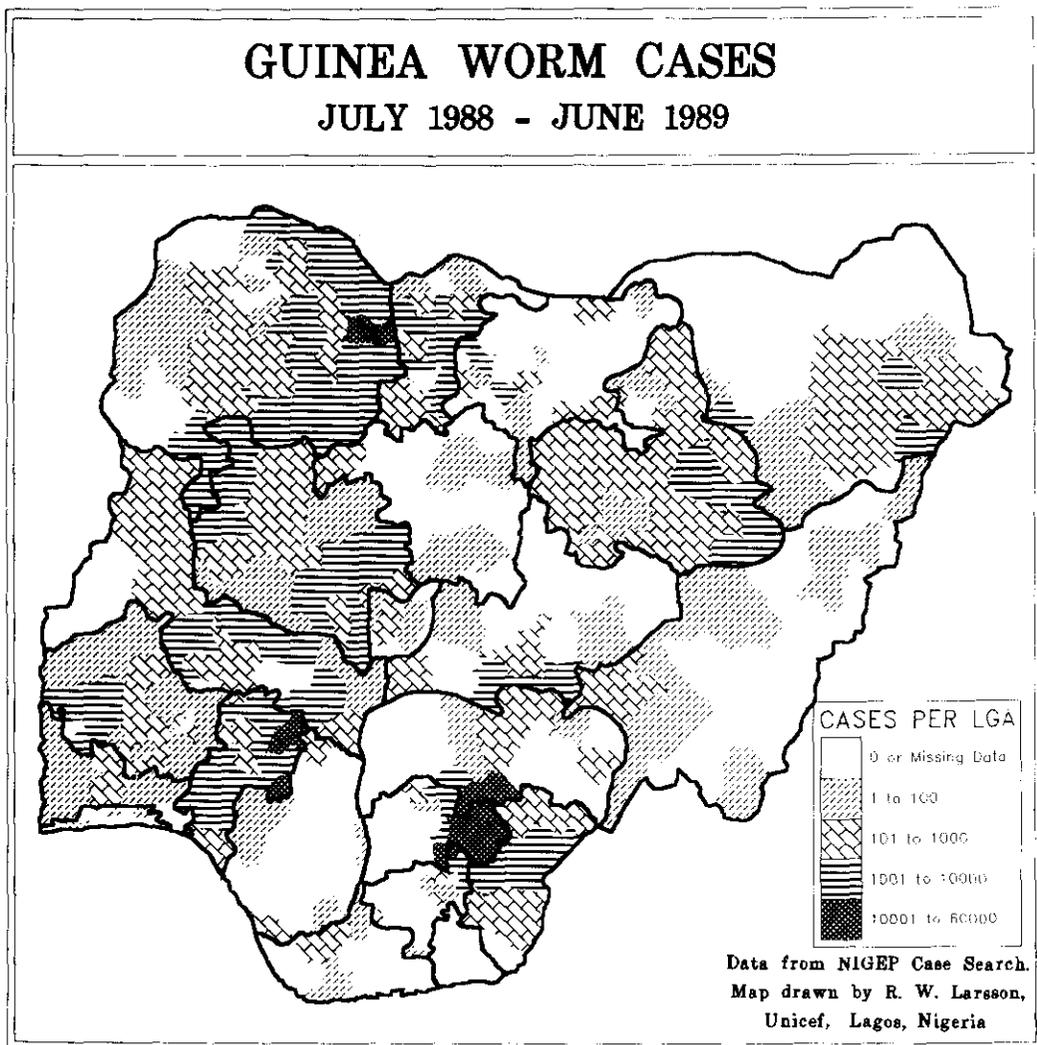
Guinea Worm disease (Dracunculiasis) is a painful, debilitating disease. It can incapacitate an affected person for up to twelve weeks, with serious consequences for agricultural productivity, school attendance, and a mother's ability to care for her children.

The Nigerian Federal Ministry of Health and Global 2000 established a Federal Secretariat in 1988 to coordinate the Nigeria Guinea Worm Eradication Programme (NIGEP). The goal of the programme is to eradicate Guinea Worm disease by 1995. Initial efforts have included establishing a National Task force and coordinating national activities with State and Local Government Areas (LGA) task forces and coordinators.

NIGEP has conducted two nationwide surveys to search for active dracunculiasis cases, to identify all villages affected, and to define the extent of the problems in these villages. These searches were

STATE	No of Endemic LGA's	Total No of LGA's Surveyed	No of Infected Villages 87-88	No of Infected Villages 88-89	No of Cases 87-88	No of Cases 88-89
Abuja	6	9	36	21	1,405	779
Akwa Ibom	0	20	0	1	0	6
Anambra	10	29	872	1,185	175,432	233,278
Bauchi	20	20	537	440	13,197	27,131
Bendel	6	20	19	31	218	572
Benue	8	19	146	245	38,317	41,337
Borno	12	24	188	162	5,246	9,374
Cross River	6	8	71	76	10,959	6,700
Gongola	12	21	59	37	319	269
Imo	10	31	262	190	53,668	31,726
Kaduna	7	13	76	60	211	352
Kano	34	46	338	84	12,987	5,630
Katsina	20	20	182	373	12,018	24,716
Kwara	14	14	1,005	558	50,356	15,798
Lagos	9	12	14	9	41	35
Niger	10	10	336	274	16,812	18,050
Ogun	11	12	226	140	2,993	1,238
Ondo	22	22	308	610	197,391	148,730
Oyo	38	42	632	538	16,576	14,169
Plateau	5	16	67	40	11,813	5,627
Rivers	4	10	23	23	295	295
Sokoto	35	37	482	673	33,366	57,953
TOTAL	299	455	5,879	5,770	653,620	643,765

Cases of Active Guinea Worm Disease & Endemic Villages, by State July 1987 - June 1988 and July 1988 - June 1989



Guinea Worm Disease Cases July 1988 - June 1989

done in late 1988 and in 1989. A third is now being completed. These surveys also address the data needs of the various water projects. This was in support of the national directive that all water projects should make endemic villages a priority for water supply.

Results of Active Case Search

The survey identified villages with active dracunculiasis cases between July 1987 and June 1988, and between July 1988 and June 1989. Results from the 1989 search show more than 640,000 Guinea Worm cases in about 6,000 villages (See Table).

The disease is present in every state. Ten States showed a decrease in the numbers of cases, and six States showed increases of greater than 3,000 cases compared to a year earlier.

Ondo and Anambra States remain hyperendemic. Eleven other states report some LGAs with greater than 1,000 cases of Guinea Worm disease (See Figure above). Akwa Ibom and Lagos reported fewer than 100 cases.

Intervention Activities

The main interventions used to eliminate Guinea Worm disease are:

- health education to encourage use of safe drinking water
- non-pollution of water supplies
- use of water filters
- provision of safe drinking water on a priority basis for affected villages.

The Guinea Worm Programme works closely with the Primary Health Care Programme in the LGAs to ensure that active cases receive treatment and that an integrated approach to village based interventions is used.

The Nigerian government has directed all water supply agencies to give priority to Guinea Worm endemic villages. All States are complying with this directive, assisted by national and international agencies such as Directorate of Food, Roads and Rural Infrastructure (DFRRI), the United Nations Children's Fund (UNICEF), Japanese International Cooperation Agency (JICA), World Bank / United Nations Development Programme and the Canadian University Service Overseas (CUSO).

Many States are distributing locally manufactured filter cloths and Du Pont, an American company, has donated 130,000 square meters of nylon cloth for distribution in 1991. American Cyanamid has donated 11,000 liters of temephos (Abate), a larvicide used for the treatment of village ponds.

Health Education is an integral part of every intervention and many States have developed their own materials. The Sub-Committee on Health Education of the national Task Force is developing health education materials, such as a flipchart for village health workers, a comic book for primary school children and posters for use in the villages.

1991 NIGEP Activities

The third national case search will be completed in February 1991. A new surveillance system for Guinea Worm should be phased-in beginning in April 1991. Data will be gathered from affected villages every month and specific intervention plans and activities will be initiated at the village level. Data from these village level reports will be compiled to generate an LGA level report for

each State to assist planners and health program personnel to implement interventions.

Focused village based efforts may include:

- Treatment (cleaning and bandaging) for infected persons
- Health education for infected persons
- Health education for communities to support:
 - use of safe drinking water
 - non-pollution of drinking water
 - use of water filters
- Provision of new, safe drinking water sources
- Provision of materials for water filters
- Chemical treatment of water supplies when appropriate

Results from the third case search will be published as they become available together with information on intervention activities.

Reported by: Dr. (Mrs) L.K. Sadiq, Nigeria Guinea Worm Eradication Programme (NIGEP); T. Alakija and P.J. McConnon, Prof. O.O. Kale; Prof. L.D. Edunghola; Dr E.I. Braide; B. Nwobi, Global 2000; R.Larsson, UNICEF

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APPENDIX C

CCCD/NIGERIA OPERATIONAL RESEARCH STUDIES

PROTOCOL NUMBER	TITLE	PRINCIPAL INVESTIGATOR	INSTITUTION(S)	PRECEPTOR	APPROVED LOCAL FUNDS	LOCAL FUNDS ISSUED	DATE APPROVE	STATUS
87/001	Evaluation of Relative Efficacy of Antimalarial Drugs in Children Under Five Years of Age	Dr. A. Sowunmi	University of Ibadan	Mrs. O. Desalu	N. 18,700	N. 18,700	11/87	Completed
87/004	Studies on Cerebral Malaria in Nigeria: Risk Factors and Evaluation of Different Treatment Regimens	Dr. O. Walker	University of Ibadan	Mrs. O. Desalu	N. 19,000	N. 19,000	11/87	Completed 02/90
87/007	Trends in Drug Utilization Pattern for Various Causes of Childhood Morbidity in a General Outpatient Department	Dr. C.O. Oyejide	University of Ibadan	Dr. M.O. Ogun	N. 9,030	N. 9,030	11/87	Completed 03/89
87/009	In Vivo and In Vitro Sensitivity of Plasmodium Falciparum to Pyrimethamine in Pregnant Women in Ilorin	Prof. O. Ogunbode Dr. B.L. Nahlen	University of Ilorin Centers for Disease Control, Atlanta	Prof. L.A. Salak	N. 37,000	N. 37,000	11/87	Completed 06/88
87/010	Incidence of Poliomyelitis and Neonatal Tetanus in Ilorin	Dr. O.A. Babaniyi	Kwara State Ministry of Health	Alhaji Y.M. Ank	N. 16,185	N. 16,185	11/87	Completed 03/88
88/004	Acute Respiratory Infections in Childhood	Dr. D. Fagbule	University of Ilorin	Dr. M.O. Ogun	N. 42,882	N. 42,882	02/88	Data Analysis in progress
88/006	Estimation of Infant and Under Five Year-Old Mortality Rates by Indirect Method	Dr. E.A. Bamgboye	University of Ibadan	Dr. M.O. Ogun	N. 22,000	N. 22,000	05/88	Completed 03/90
88/008	Effect of Malaria Chemoprophylaxis on the Outcome of Pregnancy in Zaria	Prof. Lege-Oguntoye Dr. J.O. Emembolu	Ahmadu Bello University	Prof. L.A. Salak	N. 45,230*	N. 18,367	05/88	Phase I in progress
88/009	Loss of Maternal Measles Antibody During Infancy in Ilorin	Dr. O.A. Babaniyi	Kwara State Ministry of Health	Alhaji Y.M. Ank	N. 37,086	N. 37,086	05/88	Report being written
88/010	Determination of the Plasmodial Rates in Two Communities in Oyo State	Dr. J.K. Ikweke	University of Jos	Prof. L.A. Salak	N. 19,065	N. 19,065	05/88	Completed 03/90
88/016	Evaluation of Home Capacity to Mix and Use Sugar and Salt Solution in a Rural Area, Oyo State	Mr. M.K. Jinadu	Obafemi Awolowo University, Ile-Ife	Dr. M.O. Ogun	N. 16,900	N. 16,900	11/88	Completed 10/89
88/017	Studies of the Effectiveness, Safety, and Acceptability of Fluids Derived from Local Foodstuff in the Prevention and Management of Dehydration Caused by Diarrhoea in Children, Ogun State	Dr. O. Olusanya	Ogun State Teaching Hospital, Sagamu	Dr. M.O. Ogun	N. 35,000*	N. 0	11/88	Being revised
88/023	Otitis Media in Children 0-5 Years of Age in Zaria	Dr. U. Yusuf	Ahmadu Bello University	Alhaji Y.M. Ank	N. 23,100	N. 23,100	11/88	Completed 07/89

PROTOCOL NUMBER	TITLE	PRINCIPAL INVESTIGATOR	INSTITUTION(S)	PRECEPTOR	APPROVED LOCAL FUNDS	LOCAL FUNDS ISSUED	DATE APPROVE	STATUS
88/025	Malaria Morbidity and Mortality Pattern in Children 0-5 Years Old in Dutsin-ma LGA, Katsina State	Mr. D. Abubakar	Katsina State Ministry of Health	Dr. A.M. Yakub	N. 20,250	N. 20,250	11/88	In progress
88/026	Assessment of the Knowledge and Practices Concerning Management of Fevers in Children 0-5 Years Amongst Parents and Drug Sellers in Edu LGA, Kwara State	Dr. A.C. Oyeyipo	Kwara State Ministry of Health	Alhaji Y.M. Ank	N. 25,300	N. 25,300	11/88	Completed 05/90
88/027	Quality Assurance Testing of Chloroquine in Eastern Nigeria	Dr. J.E. Ogbuokiri	University of Nigeria Teaching Hospital,	Prof. L.A. Salak	N. 83,270	N. 83,270	11/88	Completed 10/89
89/002	Community-Based Research on Knowledge, Attitudes, Practices and Media Habits of the People of Ogun State About the Expanded Programme on Immunization	Dr. M.O. Shoremi	Ogun State University, Ago-Iwoye	Mrs. O. Desalu	N. 17,798	N. 17,798	02/89	Completed 03/90
89/004	Audience Knowledge, Attitudes and Practices Research for EPI Communication Strategy Development, Ondo State	Dr. A.A. Ojomo	Ondo State University, Ado-Ekiti	Dr. M.O. Ogun	N. 21,485	N. 21,485	02/89	Report being written Completed
89/006	KAP Study for ORT Promotion, Bendel State	Dr. O. Ogbeide	University of Benin	Mrs. O. Desalu	N. 15,004	N. 15,004	02/89	12/89
89/007	Formative Research on the Knowledge, Attitudes, Practices and Media Habits About EPI of Those Who Have Responsibility for the Care of Children Under 5 Years, Oyo State	Dr. I.O. Adigun	Oyo State Ministry of Health	Dr. M.O. Ogun	N. 15,000	N. 15,000	02/89	Completed 10/89
89/010	Anemia in Under Five Children: A Community-Based Survey in Rural Nigeria (Idere, Oyo State)	Dr. E.A.O. Alikor	University College Hospital, Ibadan	Dr. M.O. Ogun	N. 19,745	N. 19,745	05/89	In progress
89/011	A Community-Based Survey of the Factors Influencing the Acceptability and Utilization of ORT in the Management of Diarrhoea in Children in Lagos	Dr. E.E. Ekanem	University of Lagos	Dr. A.O. Sorun	N. 21,070	N. 21,070	05/89	Report being written
89/015	A Comparison of Two Health Education Methods for Improving Mothers' Ability to Prepare and Administer SSS, Anambra State	Dr. O.C. Nwaorgu	Anambra State University of Technology, Enugu	Mrs. O. Ossai	N. 33,594	N. 33,594	05/89	In progress
89/003	Community Knowledge, Attitude, and Practices of ORT in Lagos State	Dr. R.A. Akinfeleye	Lagos State Ministry of Health	Mrs. O. Desalu	N. 15,004	N. 15,004	09/89	Completed 02/90
89/008	Identifying the Parental and Childhood Factors that Tend to Militate Against Effective Chemotherapy with Antimalarial Agents, Kano State	Prof. A. Olatunde	Bayero University, Kano	Dr. S. Mahdi	N. 33,000	N. 33,000	09/89	Suspended; funds being returned

PROTOCOL NUMBER	TITLE	PRINCIPAL INVESTIGATOR	INSTITUTION(S)	PRECEPTOR	APPROVED LOCAL FUNDS	LOCAL FUNDS ISSUED	DATE APPROVE	STATUS
89/018	In Vivo Study of the Sensitivity of Plasmodium falciparum to Pyrimethamine in Pregnant Women in Enugu	Dr. G.C. Iloabachie	University of Nigeria Teaching Hospital, Enugu	Mrs. O. Ossai	N. 35,000	N. 35,000	09/89	Being planned
89/019	Evaluation of the Efficacy and Acceptability of Akamu/Cowpea Mixture in the Management of Persistent Diarrhoea in Children Admitted at the University of Nigeria Teaching Hospital, Enugu	Mrs. C.I. Ndiokwelu	University of Nigeria Teaching Hospital, Enugu	Mrs. O. Ossai	N. 35,000*	N. 0	09/89	Being revised
89/020	Incidence of Neonatal Tetanus and the Impact of Preventive Measures on Neonatal Tetanus in Ife Central Local Govern Oyo State	Dr. J.A. Owa	Obafemi Awolowo University, Ile-Ife	Dr. M.O. Ogun	N. 35,000	N. 35,000	11/89	In progress
89/024	Incidence of Acute Lower Respiratory Infections in 0-5 Year Old Children at ABU Teaching Hospital, Zaria	Dr. P.D.B. Inusa	ABU Teaching Hospital, Zaria	Alhaji Y.M. Ank	N. 32,810	N. 32,810	11/89	In progress
90/003	Community-Based Research to Improve Coverage of Tetanus Toxoid Immunization in Kaduna Local Government	Mrs. R. K. Binchan	ABU Teaching Hospital, Kaduna	Dr. A.O. Sorun	N. 29,590	N. 29,590	02/90	In progress
90/004	Quality Assurance Testing of Chloroquine Tablets in Northern Nigeria	Mr. T.A.S. Midala	Ahmadu Bello University, Zaria	Prof. L.A. Salak	N. 35,000	N. 35,000	02/90	Being revised
90/007	Cluster Survey on Neonatal Tetanus: The Magnitude and Epidemiology in Kano Metropolis, Northern Nigeria	Dr. C. O. Eregie	Bayero University	Dr. S. Mahdi	N. 27,886	N. 27,886	05/90	Completed
90/009	Evaluation of Factors Affecting the Adoption and Use of Sugar Salt Solution in the Home in Ibadan	Dr. O. Oladepo	University of Ibadan	-	N. 17,077*	N. 0	05/90	Being revised
90/010	Malaria Chemoprophylaxis in Children with Sickle Cell Anaemia, Port Harcourt	Dr. F. Eke	University of Port Harcourt	-	N. 30,000*	N. 0	05/90	Being revised
90/012	Acute Lower Respiratory Infections in Pre-School children : It's relationship to pre-school attendance and other Risk factors	Dr. F.S. Bondi	Bayero University, Kano	-	N. 40,050*	N. 0	08/90	Being revised
90/018	Persistent Diarrhoea in Children 2 - 35 months of age at ABU Teaching Hospital, Zaria	Dr. Jonathan Kefas	ABU Teaching Hospital, Zaria	Dr. Yakubu	N. 20,405*	N. 0	08/90	In progress

* Pending