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ANNUAL REPORT
OF
STATISTICS UNIT
FOR
1983

BLUE NILE HEALTH PROJECT
RESEARCH & TRAINING UNIT
KHARTOUM

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Contract # AFR-0408.2-S-00-2056-00

Project Title: Health Constraints to Rural
Production.

Project # 698-0408.2 (USAID/SUDAN)

The USAID Project is an attempt to conduct research to develop new methodologies and to improve existing techniques for obtaining a data base upon which an integrated control program may be mounted against schistosomiasis. It is anticipated that the development of such a system will be transferable from the study zone (blocks 26 and 27) to the entire Blue Nile Health Project (BNHP).

GOALS & OBJECTIVES

The control of schistosomiasis requires an intimate knowledge of the factors which may influence the epidemiology and transmission of the disease in a particular environment, including the biological attributes and the snail intermediary hosts and the cultural attitudes which contribute to water-contact. To this end, the project proposes to initiate a research and training program oriented towards obtaining such information and to the establishment of an integrated data collection system necessary for disease surveillance and for evaluating economic impact and cost-efficiency of economic impact and cost-efficiency of anticipated interventions. The Statistics Unit was instituted to fulfill the above objectives as a part of the USAID Project "Health Constraints to Rural Production (Number 698-0408.2).

Study Zone

The Study Zone is comprized of two agricultural blocks 26 and 27 in the Gezira scheme along the Blue Nile River near Hassaheisa. These 2 blocks are divided into 31 villages which are the basic social, agricultural and epidemiological units. Of the above villages, 3 villages (Iayiba, Dolga, and Gad El Ein/AY) were selected as intensive villages and 18 other villages were selected as monitor villages. The entire population of intensive villages and 20% population of 18 monitor villages were included in the data base.

Egypt.

Two other technicians were also trained during October to continue input of data in the absence of four statistical staff who proceeded abroad for further training.

By the end of this year, about 10 persons were given intensive training for the independent operation of computer and peripherals.

EQUIPMENT:

A) Hardware (Hewlett Packard)

SUPPLIED IN MARCH 1983.

- 1) HP Computer Model 87 XM (with 128 K)
- 2) HP-9895 Dual Disc Drives 8" (2.3M Bytes)
- 3) HP-82902 M/S Single Disc Drive (5 1/4") (270K Bytes)
- 4) HP-7470 A Graphics Plotter (2 pens)
- 5) HP-2601 A Daisywheel Printer.

All the above were installed by Biostatistician except the printer which did not respond in the beginning. It was fixed in HP Geneva and is now working well.

SUPPLIED IN NOVEMBER 1983

1. Impact Printer. (HP-82905B)
2. Uninterruptible Power Supply
3. Printer Stand
4. Extra Memory for Computer (384K)
5. Consumables (50 Items)
6. Generator for Power

(B) SOFTWARE

1. The necessary software was developed by the Biostatistician and all the hardware installed by Biostatistician have all functioned quite well during the period of the report.

2. We have received statistical analysis pack from Hewlett packard Basic statistics and data manipulation, General Statistics and Regression analysis The BSDM program although gave problems initially, is now working satisfactorily.

3. Visicalc - plus program for evaluating alternative control measures.

4. Other software supplied in Nov. 1983.

a) File 80

b) Word 80

c) Linear Programming

d) Math Pac

e) Basic Training

f) Multiple indexed keyed sequential Access Method

(MIKSAM) ROM. This allows 12 key files to be open

simultaneously. This will be used to integrate data on humans, snails and environment

g) UCSD p - system/fortran - 77

h) UCSD pascal (add on Pascal computer).

DATA FORMS IN THE STUDY ZONE

1. Census (Demographic) all 31 villages
2. Annual Parasite surveys - 21 villages
3. Snail surveys - 21 "
4. Sociology - 3 "
5. Water Supply - 19 "
6. Flow in minor canals - 41 canals
7. Rainfall - 3 gauges
8. Diagnostic labs - 6 villages

9. Patient lists - 19 health centers
10. Cost of control - 4 Project units
11. Treatment

Of the above forms complete data on forms 1, 2 and 11 were supplied for all villages and the processing of all data was completed by the end of the year.

The computer programs for (i) input, (ii) display/print and (iii) Edit were developed for the above 3 forms. So far data on 10,000 persons were input and stored on discs for ready retrieval. Plans for detailed analysis were also finalized during the year. Tables 1 and 2 are from the preliminary analysis done using the computer.

Also extensive analysis of data on the project activities was presented in the annual reports of the project for 1981 and 1982.

The changes in response rates and interpretation of various control activities could be explained by cross tabulations which will be generated by computer during early January 1984. It is anticipated that changes in the control measures could thus be introduced on a timely basis. Some of the tabulations will be comparable to the results from Lake Volta Project in Ghana.

PLANNED ACTIVITIES

1. Developing systems to integrate data collected by all the forms
2. Feed back of processed information to project staff.
3. Stationing statistical technicians in the hospitals Wad Medani at Abu Usher/Hassaheisa and Rahad to collect data on schistosomiasis patients so that these persons could be linked with the project data base.
4. Developing schistosomiasis surveillance system in the study zone so that persons from study zone could be traced whenever diagnosed and or

treated for schistosomiasis.

5. Developing an integrated data base incorporating data on humans, snails and environment. The comprehensive cross-tabulations of data from various disciplines and control activities will be useful for better understanding of persons at high risk of infection, identification of transmission foci, seasonality and agriculturally dependent transmission dynamics, water contact, occupation, human behavior and efficacy of control measures.
6. Introductory course on the Application of Biostatistics in Health Reasoning.
7. Hands on training course for Senior Project Staff featuring data input, editing, processing, retrieval, analysis, interpretation and subsequent dissemination of information(February 1984)
8. Developing simple mathematical models of intervention and testing the models against the data base, in cooperation with senior scientists.
9. Coordination of one symposium with international invitees to be held in Khartoum for the Sudanese staff to present papers(May 1984).
10. Develop a case-control study on the epidemiology of Schistosomiasis to determine the characteristics and behavioral patterns precipitating the severe clinical manifestations of S. Mansoni in the age group 19-40 years.

EVALUATION:

The project was evaluated by a seven member USAID evaluation team in April 1983 and the final report contained more detailed information and rationale for some of the above planned activities.

SUMMARY:

During 1983 the Statistics Unit was organized to be a well equipped Computer center with latest and reliable computer and peripherals. All the data available from 1981 were processed using easy-to-read computer programs. In addition, adequate staff were also trained for continuing the project work after the return of the present US Biostatistician who will be completing two years service in 1984.

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TABLE A1CENSUS POPULATION IN 1981 and EPIDEMIOLOGICAL SURVEYS RESULTS FOR
SCHISTOSOMIASIS IN 1981, 1982 and 1983 IN THE STUDY ZONE.

PREVALENCE

VILLAGE	JAN 1981 (SURVEY 1)					JUNE 1982 (SURVEY 2)			
	CENSUS	EXAMINED		POSITIVE		EXAMINED		POSITIVE	
	NO.	NO.	%	NO.	%	NO.	%	NO.	%
Tayiba	2810	2054	73.1	891	43.4	1915	68.1	967	50.5
Gad El Ein/AY	1162	797	68.6	451	56.6	635	54.6	334	52.6
Dolga	1144	797	69.7	386	48.4	750	65.6	375	50.0
Total	5116	3648	71.3	1728	47.4	3300	64.5	1676	50.8

VILLAGE	DEC 1982 (SURVEY 3)				AUG 1983 (SURVEY 4)			
	EXAMINED		POSITIVE		EXAMINED		POSITIVE	
	NO.	%	NO.	%	NO.	%	NO.	%
Tayiba	1464	52.1	210	14.3	1424	50.7	122	8.6
Gad El Ein/AY	477	41.0	163	34.1	651	56.1	72	11.1
Dolga	563	49.2	71	12.6	713	62.3	48	6.7
Total	2504	48.9	444	17.7	2788	54.5	242	8.7

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TABLE A2

Incidence of Schistosomiasis in June 1982, Dec 1982
and Aug 1983 in the Study Zone Villages.

Village	Negatives in Jan 1981*	(Incidence) Positive in June 1982		Negative in June 1982*	(Incidence) Positive in Dec 1982	
		No	%		No	%
Tayiba	939	201	21.4	605	33	5.5
Gadalain	203	56	27.6	158	54	34.2
Dolga	318	79	24.8	191	15	7.9
Total	1460	336	23.0	954	102	10.7

Village	Negative in Dec 1982*	(Incidence) Positive in Aug 1983	
		No	%
Tayiba	845	47	5.6
Gadalain	219	14	6.4
Dolga	334	12	3.6
Total	1398	73	5.2

* Adjusted for persons who did not come for the recent test.