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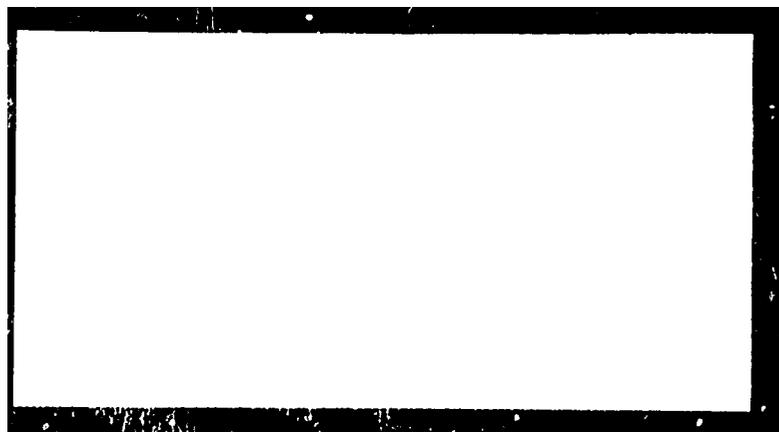
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Project Honduras - AID
SUMMARY OF RECOMMENDATIONS

A Report Prepared By:
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I. EPIDEMIOLOGICAL SURVEILLANCE

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Background

The present epidemiological surveillance system uses data reported weekly by telegram and monthly in a communicable diseases questionnaire. The data are analyzed and the findings reported in a monthly bulletin. In addition, up-to-date graphs comparing the number of reported cases with averages for previous years are plotted and filed.

Limitations of the System

Although the system provides useful, current information, the report on the results of a study of Epidemiology Department programs revealed serious limitations that reduce the system's effectiveness. Among the weaknesses were poor quality and insufficient data; inexpert staff; shortages of personnel and equipment; and failure to coordinate activities. More specifically, the report revealed that on average, only 50 (or 55 percent) of the health posts report their figures weekly by telegram; the percentage in certain regions is considerably lower.

Poor data coverage is one consequence of the limited reach of Ministry of Public Health and Social Welfare services and of the failure of private health organizations to furnish data consistently.

Proposed Strategy

The proposed strategy is designed to overcome these problems. It requires the appointment of regional teams to supervise data collection, maintain surveillance of disease patterns, and when an outbreak occurs, coordinate control measures.

The strategy also includes activities that will improve the quality of Health Service information by increasing the number of local staff, upgrading staff skills, and further training Health Service branch personnel. Coordination between local sources of data and regional- and central-level groups that use that data will be improved, as will communications between regional laboratories, the central laboratory, and the epidemiological surveillance unit.

Recommendations

Given present limitations and the proposed strategy, the following recommendations are most appropriate.

A. Improve Quality and Coverage of Sources of Information

Since the epidemiological surveillance system depends on the quality of the data sources used, the first priority should be to improve information collection by health units. The following measures are recommended:

1. Extend coverage by increasing the number of community health posts.
2. Upgrade the skills of personnel by providing better initial training and stricter, ongoing supervision. Trainees must learn not only how to gather data routinely, but also how to use and report that data. The careful reporting of data should be stressed.
3. Attract the most suitable personnel by upgrading salary scales and improving working conditions. This must be done to reduce the number of retirements and resignations.

B. Define Functions and Establish Network of Regional Epidemiological Surveillance Units

A well defined organization with adequate resources and a sufficient number of full-time personnel is needed to ensure that data collection is supervised, outbreaks investigated properly, and control measures coordinated. The proposed network of epidemiological surveillance units could assume responsibility for these essential activities. To ensure the units' success, the following action must be taken:

1. The organization as a whole must be defined and the activities of the various surveillance units coordinated.
2. Strongly motivated personnel must be recruited and trained to work full-time in surveillance.
3. Adequate ongoing training must be provided.
4. Adequate staff resources, equipment, and transportation must be provided.

C. Set-up Communication and Routine Data Transfer Mechanisms for Laboratories and Surveillance Team

Laboratories are essential to the identification and investigation of epidemics. But they must be able to report and share required data. There are no channels facilitating routine communication between the regional laboratories, the central laboratory, and the epidemiological surveillance team. A mechanism to transmit information on the cases of reportable identified diseases is needed. A form should be devised to facilitate the weekly reporting of cases detected by both government and private laboratories; it should provide space for a description of the symptoms diagnosed, the sick person's name and address, and the date the sample or specimen was taken. Every laboratory should be required to report weekly every case of reportable disease it detects.

Top priority should be given to the establishment of effective communications between the laboratories and the epidemiological surveillance unit. The effort to upgrade the quality of staff and equipment at local and regional laboratories should be assigned the next highest priority.

D. Tabulate Epidemiological Surveillance Data as Percentage of Cases Examined

At present, routine surveillance data are tabulated in numbers of cases per week; this facilitates the comparison of figures for a particular region in different years. It is difficult to compare regions or areas whose health services use rates differ; in some instances, although few cases of a disease may be reported, the real incidence level may be high.

To bring data from different sources into line and to facilitate comparison, the number of cases should be recorded as the basic indicator and the percentage of first-visit patients in the same age group who are diagnosed as having a particular disease should be computed. (For example, if a region or area reports a weekly total of 100 new patients aged 1-4, 20 of whom are diagnosed as suffering from diarrhea, then the incidence rate of diarrhea would be 20 percent.) This procedure will allow comparisons among areas or regions in which the rates differ.

Implementation of Recommendations

Major recommendations cannot be implemented until certain necessary or advisable actions are taken. These next steps are described below.

A. Actions to Improve Data Quality

1. Supervision: Intensified supervision would be the most effective way to upgrade data quality. It would entail stricter control of the flow of information received so that health posts which are lax in reporting can be identified. The forms included in Appendix A would be very useful.
2. Failure to Report: Posts that fail to report data should be identified and asked to explain their procedures. Corrective measures should be taken. Local inquiries would most effectively demonstrate interest in the data and the importance of proper reporting.
3. Promotion: Ongoing training can be provided at the monthly area and regional meetings. These in-service sessions would be an incentive for personnel to send in data promptly.
4. Channels of Communication: Central-level communications with and supervision of regional and local units should be improved. To improve communications and supervision, central office staff should:
 - a. Visit regularly the regions to promote data collection and reporting.
 - b. Broaden the information included in the surveillance bulletin. Obviously, information on outbreaks and control measures is needed, but the results of studies or programs on various aspects of public health (e.g., the importance of oral rehydration in cases of diarrhea; the prevalence of malnutrition; demographic data, etc.) should also be emphasized.

B. Measures to Establish Network of Regional Epidemiological Units

1. Design of the System: A broad, detailed system design should be prepared. It should include a description of staffing and training requirements, a description of specific supervision and coordination procedures, an estimate of the financial resources needed, and a practical implementation schedule.

2. Staffing: The type of regional epidemiological unit proposed would need:

- an epidemiologist;
- a statistics clerk; and,
- a laboratory technician.

In addition, an assistant in epidemiological surveillance should be appointed. This person would report directly to the director of the surveillance program. The assistant would:

- serve as the permanent liaison between the central level and regional and local units that collect data;
- assist in investigating and correcting the causes of faulty reporting; and,
- help train and motivate health workers to collect the most useful data.

An ideal recruit for this post would be a well motivated individual with a degree in public health. The person need not be a qualified nurse or doctor.

3. Training: Regional epidemiological staff should receive specific instruction in:

- the principles of epidemiology;
- applied bio-statistics;
- methods of investigating outbreaks of disease; and,
- methods of control and prevention.

The CDC offers each year a three- to four-week course that covers these subjects. The course is given in English, however. A similar course of the same length should be offered in Spanish in Honduras.

II. DATA ON BIRTH AND DEATH RATES

II. DATA ON BIRTH AND DEATH RATES

Background

The collection of data on birth and death rates was reviewed in the Report on Epidemiology Department Programs (see pages 72-76) and in the Health Sector Review.

Two parallel systems are now used. The first, based on the Civil Register, provides official data analyzed and tabulated by the Directorate-General of Statistics and Census. The second, operated by the Ministry of Public Health and Social Welfare, collates and analyzes data contained in the reports submitted by community health workers and auxiliary nurses. The two systems are not coordinated.

Functioning and Limitations of the Two Systems

The data obtained from the Civil Register indicate serious shortcomings. Ten percent to 12 percent of all health posts fail to report births, and over 40 percent fail to report deaths. The low under-registration of births is attributed to the need to retain official birth certificates until identification cards are obtained. Given the lack of motivation to report deaths, the rate of under-registration is particularly high. An analysis of under-registration by age group (see Table 1) shows that the deaths of adults are reported more often than the deaths of children.

There is a lack of reliable information on the cause(s) of death. Only 13 percent of all registered deaths are certified by a physician. In most cases, other, often unqualified persons cite the cause of death; sometimes, no specific cause is noted. Errors and omissions in mortality data are common, and in some cases, the receipt and tabulation of data may be delayed more than a year.

Ministry of Public Health data on birth and death rates are not entirely reliable. Coverage extends only to communities with a health worker or auxiliary nurse, and even these communities may fail to report data. The stated cause of death may or may not be correct, depending on the health worker's ability to correctly diagnose each case. Data are often incomplete.

Recommendations

A. Civil Register Data

A Directorate-General of Registry will be set up within the Ministry of the Interior in 1980, using United Nations funding. This action is designed to remedy defects in the Civil Register. A representative with

Table 1
 PERCENTAGE UNDER-REGISTRATION OF DEATHS
 (DISEASE RATE PER 1,000 INHABITANTS)

<u>Age Group</u>	<u>1972 Mayors' Offices</u>	<u>1970-1971 Official</u>	<u>Percent of Under- Registration</u>
1 - 4	19.3	9.6	50.3
5 - 9	4.8	3.6	25.0
10-14	3.0	1.8	40.0
15-44	4.33	4.1	5.3
45-69	18.36	18.1	1.4
70 and over	74.4	85.9	-
AVERAGE	14.2	8.0	43.7

Sources:

Wilkie, J.W. (Ed.), Statistical Abstract for Latin America, Vol. 18 (1977), UCLA Latin American Center publication, Los Angeles, California, page 105.

Ortega, A. and Rincon, N., "Mortality," Centro Latinoamericano de Demografia and Direccion General de Estadistica y Censos, Santiago, Chile, 1975, page 26.

USAID Health Sector Review, September 1979, page 46.

specific responsibility for Civil Register matters will be assigned to each mayor's office; improved supervision will result. Although this reorganization effort will ensure reporting of more detailed data, the under-registration rate may not be affected. To promote the reporting of births and deaths, the following action should be taken:

1. The training given to health workers and promoters and to auxiliary nurses should emphasize the importance of reporting births and deaths so that the idea will gain acceptance in their own communities.
2. A procedure should be introduced so that health centers can forward information on births and deaths to the local mayor's office, which would then register the information. (This is particularly important because another source may fail to report the same data.) Copies of birth- and death-report forms could be sent from the centers to the mayor's office. Some incentive (e.g., reimbursing each month the expenses the health worker or nurse incurs in submitting report forms) should be provided.

B. Ministry of Public Health and Social Welfare Data

To improve both reporting percentages and data quality, the following actions should be taken:

1. Increase the number of communities with a health worker to expand reporting coverage.
2. Reinforce health worker training and supervision by stressing the importance of birth and death statistics and of correct statements on the cause(s) of deaths.
3. Define a procedure for routine review, by district nurses, of reported causes of death. (This will improve data quality control.)

III. NUTRITION SURVEILLANCE IN THE HEALTH SECTOR

III. NUTRITION SURVEILLANCE IN THE HEALTH SECTOR

Background

The SAPLAN Food and Nutrition Surveillance System has been operating in the Danli and El Paraiso districts for the last 18 months and has begun to generate data on birth weights, infant mortality, and malnutrition and diarrheal diseases that indicate health and nutritional status. The use and expanded collection of such nutrition data are described below.

Present Situation

Data on birth weights, infant mortality, and nutrition diseases in the Danli and El Paraiso districts have been tabulated. Although definitive conclusions are impossible because the period covered was too short, the data have interesting implications for evaluations of nutrition status and underscore several major defects in data collection and analysis. For instance, birth weight data show that only 1 percent to 5 percent of all infants are born underweight, which gives the impression that mothers are generally in a good state of nutritional health. (See Appendix B.) Given the lack of training for midwives and of equipment, the data may be erroneous and should be reviewed carefully. To ensure the reliability of these data, midwives who report such data must be well trained and supervised. They must know how to determine nutrition status, measure weights, and record data.

Infant mortality data show an average rate of 59.1 deaths per 1,000 live births. (See Appendix B.) In 1972, CELADE calculated that the rate was 117 deaths per 1,000 live births. Given this unfavorable comparison, one can conclude that these data are not reliable, although they may indicate a trend in mortality. Again, only the serious training, supervision, and motivation of health workers will ensure the collection and reporting of accurate data.

Data on the general incidence of nutrition diseases (clinical malnutrition and diarrhea) are useful indicators of the prevalence of malnutrition among children. Between 10 percent and 51 percent of all children under age 5 who were attended were suffering from malnutrition, between 13 percent and 28 percent from diarrhea. (See Appendix B.) Data vary markedly from center to center, indicating variations in the diagnoses of attending nurses and doctors. These variations make strict comparison difficult. Furthermore, data coverage is low, restricted to those infants attending health centers.

Reporting of figures on malnutrition has improved noticeably in the SAPLAN area. There, the goal is to report the nutrition status of all children under age 5. (Status is categorized as "normal," "I," "II," or "III.") Nonetheless, a number of centers (e.g., CHE in the Danli District) do not report regularly. Outside the SAPLAN area, the weights and heights of children are invariably recorded, and in most cases, their nutrition status as well. However, data are actually reported only for severely malnourished children and children in the growth and development control program.

Conclusions

Health sector data on malnutrition, particularly outside the SAPLAN area, appear to be quite limited. The procedure for reporting communicable diseases could be but has not been adopted. Weekly and monthly reports on identified cases of malnutrition are rarely submitted. (See Appendix A.) Data that are reported are not representative because they mainly concern healthy children in the growth and development control program and children clinically diagnosed as malnourished. There is no information on the number of children with "o" (i.e., "normal") nutrition status. The need to report this information has never been stressed, and the weekly and monthly report forms make no specific reference to it.

Although SAPLAN data are more detailed, the reported information is not always complete--an indication of the difficulties in training and motivating all health center personnel to collect and record data. Nurses and physicians who understand the importance of and need for better nutrition data do not object to calculating and recording the nutritional condition of all children under age 5.

The advantages of recording the nutrition status of all children under 5 are:

1. Each health center is better able to identify the most serious cases of sub-clinical malnutrition.
2. Broader-based nutrition information is available for evaluation and planning at regional and central levels.

Recommendations

To upgrade and expand the collection, analysis, and use of health data the following recommendations should be implemented:

- o Require all health centers maintained by the Ministry of Public Health to calculate and record the nutrition status of all children under age 5 seen in outpatient clinics.
- o Instruct all physicians and nurses to record nutritional status (including the "normal" rating) whenever they record a diagnosis. Add to the consultation report form a column, adjacent to the diagnostic column, in which to record nutritional ratings. (See Appendix A.)

- o Train staff to report nutrition status. (The district nurse could provide this instruction.)
- o Consider introducing a new growth and development control form in districts outside the SAPLAN area. (See Appendix A.)
- o Use nutrition data recorded in weekly and monthly reports to prepare monthly tabulations on the percentages of children in each nutrition status group in each area and region. (The Ministry of Public Health will be responsible for calculating these percentages. The information will facilitate the surveillance of general nutritional health.)
- o In cooperation with SAPLAN staff, prepare periodically summaries of nutrition data generated at regional and local levels.
- o Periodically review with SAPLAN staff data on infant mortality and birth weight. Consider collecting and reviewing data on other areas, if review activities in the SAPLAN test area are successful.

APPENDICES

Appendix A
SAMPLE INFORMATION RECORDS

RECORD DE INFORMACION

REGION SANITARIA No. 2

AREA: _____ CESAR O CESANO: _____ MES _____ AÑO _____

M E S E S	INFORMACION MENSUAL										TELEGRAMA EPIDEMIOLOGICO SEMANAL.				
	AT-E	CER-4	BORD.	AT-M	CER-5, 1	CER-6	CER-7	0 2	LABORATORIO SANEAMIENTO CASTRO	COM-4	COM-5	1	2	3	4
ENERO											1	2	3	4	5
FEBRERO											6	7	8	9	
MARZO											10	11	12	13	
ABRIL											14	15	16	17	
MAYO											18	19	20	21	2
JUNIO											22	23	24	25	26
JULIO											27	28	29	30	
AGOSTO											31	32	33	34	3
SEPTIEMBRE											35	36	37	38	39
OCTUBRE											40	41	42	43	44
NOVIEMBRE											45	46	47	48	49
DICIEMBRE											50	51	52		

GCH/ama

✓ = INFORM
 ○ = INFORM ATRASADO
 ⊘ = NO INFORM

FICHA INFANTIL

Establecimiento _____ Carpeta familiar _____
IDENTIFICACION Fecha: _____
 Nombre del niño _____ Sexo _____ Edad: _____ meses
 Fecha y lugar de nacimiento: _____ Hogar _____ Hospital _____
 Peso al nacer _____ lbs.
 Antecedentes del embarazo: _____
 Nacimiento normal: Si ___ No ___ Especificar: _____
 Nombre del padre: _____ Edad: _____ años
 Nombre de la madre: _____ Edad: _____ años
 Número de hermanos: Total _____ Menores de 5 años: _____
 Antecedentes familiares: Sífilis _____ Diabetes _____ Tuberculosis _____ Cáncer _____ Epilepsia _____ Hipertensión _____ Enf. mental _____ Mongolismo _____
 Domicilio: _____

CONTROL DE VACUNAS

VACUNAS	FECHAS				
	1a. Dosis	2a. Dosis	3a. Dosis	Refuerzo	Observaciones
BCG					
SABIN					
DPT					
Sarampión					
Otra					

EXAMEN FISICO

Cabeza: Perímetro cefálico _____ cms. Cabello: _____
 Fontanelas: anterior _____ posterior _____ Ojos _____ Oídos _____ Nariz _____
 Dientes _____ Visión _____ Audición _____
 Cuello: ganglios _____ Tórax: pericardio _____ cm. Pulmones _____
 Abdomen: _____ Genitales: _____ (torso columna) _____
 Extremidades: superiores: _____ inferiores: _____
 Caderas: _____ Pies _____ Piel _____
 Neuro muscular: equilibrio _____ marcha _____
 Reflejos: moro _____ succión _____ Babinski _____

Appendix B

**STATISTICS ON BIRTH AND DEATH RATES
AND ON THE INCIDENCE OF DIARRHEA AND
MALNUTRITION**

NACIDOS CON BAJO PESO, POR UNIDAD LOCAL DEL SVAN

(Julio 1978 - Sept. 1979)

Lugar	Nacidos vivos	Nacidos \bar{x} Bajo Peso	
Chichicaste	68	-	-
Sta. María	139	6	4.3
Zapotillo	239	15	5.4
Jutiapa	114	2	1.8
El Paraiso	258	9	3.5
Jacaleapa	67	-	-
S. Matías	69	-	-
Teupasenti	685	11	1.6

MORTALIDAD INFANTIL, POR UNIDAD LOCAL EN EL AREA DEL SVAN

(Julio 1978 - Septiembre 1979)

Lugar	Nac.Vivos	Muertes < 1 año	Muertes totales	TASA *	PROPORCION **
Chichicaste (15)	92	9	17	97.8	52.0
Sta. María (15)	133	16	40	120.5	40.0
Zapotillo (13)	259	7	23	29.2	50.4
Jutiapa (11)	114	5	15	26.3	20.0
El Paraiso (15)	258	35	131	135.6	26.7
Jacaleapa (12)	67	1	11	14.9	9.0
S. Matías (12)	69	6	17	87.0	35.5
Teupasenti (10)	685	21	52	30.6	40.4

NOTAS: Entre paréntesis número de meses incluidos

* TASA = (No. Muertes en < 1 año / No. nacidos vivos) x 1000

** PROPORCION = No. muertes en < 1 año / No. muertes totales

ATENCIÓNES POR DIARREA Y POR DESNUTRICIÓN EN MENORES DE 5 AÑOS, POR UNIDAD LOCAL EN EL
 AREA DEL SVAN

(Julio 1978 - Septiembre 1979)

Lugar	Atenciones totales *	Atenciones por diarrea No.	%	Atenciones por desnutrición No.	%
Chichicaste (15)	1355	345	25.5	190	14.0
Sta. María (15)	1123	316	28.1	178	15.8
Zapotillo (13)	1942	415	21.4	996	51.5
Jutiapa (11)	1107	145	13.1	117	10.6
El Paraiso (15)	2775	643	23.2	449	16.2
Jacaleapa (12)	405	103	25.4	75	18.5
S. Matías (12)	650	101	16.0	268	42.5
Teupasenti (12)	1104	237	21.5	267	24.2

NOTA: Entre paréntesis número de meses incluidos

* Incluye atenciones por morbilidad y por control.

Appendix C

DESCRIPTION OF TRAINING PROGRAM IN EPIDEMIOLOGY

Appendix C

TRAINING PROGRAM IN EPIDEMIOLOGY: AN OUTLINE OF OBJECTIVES, METHODS, SCHEDULE AND COSTS

A. Objectives

Phase I: 2-week Training Seminar

- o To provide regional epidemiologists and central Department of Epidemiology staff with a review of epidemiologic principles, surveillance techniques, and methods to investigate disease outbreak.
- o To define clearly the role of the regional epidemiologists in communicable disease surveillance, investigation, and control.
- o To review and discuss practical examples of disease outbreaks in Honduras--how they are investigated, what results are achieved, and how the process and results can be improved.

Phase II: Program of Continuing Education

- o To provide on-site experience in epidemiologic techniques. (See program description.)

B. Methods

1. The seminar would be organized and directed by Latin American (preferably Central American) epidemiologists with significant practical field experience in disease surveillance, outbreak investigation, and control.
2. The seminar would use a practical "case-study" technique, drawing on examples similar and relevant to Honduran conditions. Some of the examples chosen would illustrate approaches used in other Latin American countries; some could be based on actual Honduran experience.
3. To prepare for the seminar the presenting epidemiologist would visit Honduras for one week to discuss the seminar in detail and design a format adapted to the particular needs of the Department of Epidemiology. The Department of Epidemiology would provide to the epidemiologist information on outbreak investigations and control measures used in Honduras; these will constitute the Honduran "case-study" example(s).

4. After suitable time for preparation of the seminar and case-study examples (three months after the initial visit), the seminar could be presented in Honduras. An alternative would be to hold the seminar in the country of the presenting epidemiologist to permit the observation of functioning epidemiologic activities in that country.
5. The seminar would last approximately two weeks. Some didactic presentations stressing epidemiologic principles would be made, but most time would be devoted to a practical review of case studies and a discussion of their relevance to the Honduran situation.

C. Schedule*

<u>Date</u>	<u>Activity</u>
September - October 1980	Identify possible sources of training Preliminary visits by Ministry of Health officials to country of course epidemiologist to define possibilities
November 1980	Course epidemiologists selected 1-week visit to Honduras
December 1980 - February 1981	Course in preparation
March 1981	Course presented
April - June 1981	Planning for Phase II on-site experience with disease investigation and surveillance
July 1981	Implement Phase II

*Assumes funding by September 1980.

D. Costs for Seminar in Epidemiology**Personnel:**

- | | |
|--|----------|
| 1. Epidemiologists to Present Course | |
| 2 man-mos (@\$24,000/yr) | \$ 4,000 |
| 2. Administrative and Secretarial Assistance | |
| 2 mos (\$6,000/yr) | 1,000 |

Travel:

- | | |
|---|--------------|
| 1. Two trips to Honduras (Air Fare) | 500 |
| Per Diem: 7x\$40 = 280/wk x 3 weeks | 840 |
| 2. Trips to Country x by MOH Officials (to explore possible course offerings) | 500 |
| 1-week Per Diem | 280 |
| 3. Trip by Course Participants to Host Country (if given outside of Honduras) | |
| 10 participants x \$200 air fare | 2,000 |
| 10 participants x \$280/wk x 2 wks | 5,600 |
| Meeting Rooms x 2 weeks \$50/day x 14 | 700 |
| Supplies, Equipment, Miscellaneous | <u>1,000</u> |
| TOTAL | \$16,420 |

Appendix D

LETTER FROM DR. TROWBRIDGE TO DR. HYSLOP

**THE JOHNS HOPKINS UNIVERSITY
SCHOOL OF HYGIENE AND PUBLIC HEALTH**

*Department of International Health
Division of Human Nutrition*

*615 North Wolfe Street
Baltimore, Maryland 21205
TEL: (301) 955-3734*

February 12, 1980

Dr. Thomas Hyslop
USAID
American Embassy
Tegucigalpa, Honduras

Dear Tom:

In this letter I will try to respond to the specific points which you raised in your comments addressed to the CDC consultants. Your first question was in regard to the ability of personnel at the central level of the Division of Epidemiology to investigate epidemics when the region or area cannot do so. Based on my contact with the regional and local level personnel, there is no expertise at that level to conduct epidemic investigations independently. The general pattern is for the Central Division of Epidemiology to send a team to the site to investigate the situation. During my visit there was a outbreak investigation which took Dr. Andino and several others to the area where Mike Levine and Debbie Blum were working on their oral rehydration project. Mike Levine's observations were that they had little idea of how to go about a systematic investigation. It would seem therefore that even at the central level the ability to work up an epidemic is extremely limited. In light of this, it would be appropriate to include training in epidemic investigation in the training recommended for regional and central level epidemiologists.

In response to question number 2, I was told by the people in the epidemiology department that they do, in fact, use most of these listed sources of information. Dr. Andino jokes about the fact that they often learn of the existence of an outbreak first from notices in the press. The routine means by which outbreaks become known is by the observation of the increased number of cases or a generalized increase in number of consults seen by means of the surveillance system, particularly the data that arrives by way of the telegram system.

I do not have specific information, but I doubt that the data such as laborer absenteeism and school absenteeism or the changes that may occur in the levels of medications used would be data that could be gathered and reported and interpreted rapidly enough to be useful. In response to question 3 I believe your presumption is correct that the information on drug usage is principally utilized for ordering more drugs.

Based on my discussions with Dr. Sandoval and others in the Epidemiology Division I am unaware of any surveillance program outside of the surveillance system based on the telegram reporting and the monthly reporting of notifiable diseases. I did not clarify specifically with Sandoval what programs are referred to in the one sentence paragraph under the heading Programas Actuales on page 68 of the report by the Epidemiology Division.

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of training of the local personnel, the lack of supervision at the local and regional level, the under-reporting which occurs in the telegram reporting system and the limited feedback of information from the central level. It has been my understanding that the discussion of the relationship of these recommendations pertaining surveillance to the recommendations of other programmatic areas is to be developed as a second phase of the consultant process. There was a strong consensus at the recent meeting in Atlanta, that extensive detailing of programmatic recommendations would not be a useful exercise until there is substantive feedback from the principal people at the Ministry of Health, including most especially Gustavo Corales, as to which of the general programmatic areas and recommendations are judged by them to be most appropriate and of highest priority. We all felt that there would be little use in spelling out the details of programmatic recommendations in areas which have low priority or which the Ministry felt were not feasible, for reasons that they will be in a much better position to judge.

At the Atlanta meeting George Moore stressed the need to address training requirements as specifically as possible. My report recommends training for the regional epidemiologist as part of the strategy for strengthening the regional epidemiologic units. This recommendation is pertinent to the overall functioning of the epidemiology division of which surveillance is only a part. As I see it, the required training would need to be of an intermediate level. I do not believe that sending the regional epidemiologist away for a MPH would be appropriate since this would require a long period of time and would be costly. Also, returnees from a MPH course would have high expectations for their placement in the Ministry of Health and might not feel inclined to work under a regional director with less preparation than they have themselves. In this way the provision of a high level of training might lead to the loss of the individuals trained to other positions:

Training should certainly be more intensive than that implied by a seminar format. As recommended in the report, I would see a training period of 3-4 weeks of full time work of an intensive nature. The course would be aimed at providing the skills outlined in the report and perhaps equally important, would be aimed at reorienting the regional epidemiologist to his role. The course should conceptualize the work of the regional epidemiologist as a full time undertaking requiring both work in data analysis and surveillance as well as field work to provide supervision and to undertake disease investigation.

In terms of the format of the training, it would seem most practical to provide the training in country. However, in the meeting with Fred Hartman in Atlanta he advocated out of country training in order to remove the students from the distraction of their day to day work and to promote concentration on the subject matter. I certainly have no independent experience in the most effective means of providing this type of training, but my impression is that in country training would be more practical.

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I hope these comments are useful. With best regards.

Sincerely,

Frederick L. Trowbridge, M.D.

FLT/ep