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82-002
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SECTION I - RESEARCH PROTOCOL

1) Title: Lay Reporting and DSS "Cause of Death"Forms.

2) Principal Investigators: Dr Stan D'Souza Co-investigator: A. Razzak
Ms. Susan Zimicki

3) Starting Date: March, 1982

4) Completion Date: ~~May~~ July, 1982

5) Total Direct Cost: US $ 1,958

6) Scientific Program Head:

This protocol has been approved by the Community Services Research Working Group.

Signature of Scientific Program Head: _____

Date: 31/12/81

7) Abstract Summary:

The need for updating "cause of death" forms in Matlab DSS is well recognised. Interest in lay-reporting of "causes of death" is now increasing throughout the developing world. This protocol has three aims:

- to document current cause of death reporting
- to experiment with symptom lists and lay reporting procedures
- to recommend changes in the cause of death reporting forms and classification systems.

8) Reviews

(a) Ethical Review Committee: _____

(b) Research Review Committee: _____

(c) Director: _____

(d) BMRC: _____

ABSTRACT SUMMARY - PARTICULAR ITEMS

1. Not applicable.

2. No risks; not applicable.

3. Not applicable.

4. Data will be analysed and published in aggregate and there is no possibility of identifying individuals.

5. A verbal consent form will be approved by the head of household before starting interviewing.

6. Interview will take place at respondents house and questions on cause of death variables will be asked and it will take half an hour.

7. No direct benefits to individual, will provide a better understanding of cause of death which may be an aid to the planners for a better health planning.

8. Use of death records only, and previous census and DSS records.

STATEMENT ABOUT CONFIDENTIALITY

The Cause of death forms are part of the questionnaires used for the DSS protocol (80-035). Similar procedures will be used for this experimental work on forms. (extract from DSS protocol 80-035).

Verbal consent will be obtained from the adult subject in each household - who will be answering the questions. Implied consent will be assumed for other family members.

Identifying information (name, census number) appears on the questionnaire forms (see appendices). Because it is necessary to link events using this information it cannot be deleted. However, the staff who have access to these questionnaires is trained and aware of their confidential nature.

After the data is linked, all analysis is done using aggregate information. There is no way individuals can be identified.

SECTION II - RESEARCH PLAN

A. INTRODUCTION

Health information systems include vital registration, mortality and morbidity surveillance and monitoring of health interventions. In large areas of the world access to health care provided by medically qualified personnel is limited. Estimated levels of mortality and morbidity remain imprecise as vital registration and other health-related data are practically non-existent. Thus, especially in rural areas, it is urgently necessary to implement information systems in which health information is collected by non-specialised persons. The term "lay reporting" has been used to describe such systems (WHO 1978).

WHO interest in lay reporting of health data is first evidenced in a paper by Biraud (1956). Since then several meetings and working groups have been assembled to develop a feasible system of lay reporting for developing countries. At a WHO regional office meeting in Delhi (SEARO) held in November 1976, minimal morbidity and mortality lists were produced for use in the region by primary health service personnel. Field trials were carried out and a list of symptom associations was developed. More recently, in September 1981, a meeting was held in Nairobi to initiate and promote the use of lay reporting in African countries "for the planning monitoring and evaluation of community and health services" (WHO/UNEP 1981).

Most recently (October,1981)a working group spomsored jointly by the UN Population Division and the WHO met in Bangkok to consider data base for the measurement of "levels, trends and differentials in mortality." One of the invited papers for the meeting was on the Matlab and Companiganj projects (D'Souza 1981). The role of lay informants was discussed in this paper. Among recommendations of the Working Group was the following: "Therefore, the Working Group recommends that additional studies be undertaken on ways and means of obtaining cause of death information by lay informants and on providing a suitable classification of causes of death for the developing countries, using the International Classification of Diseases as a base as far as possible. A system of reporting of causes of death by lay informants should be considered for adoption, whenever civil registration or alternative systems are inadequate." (UN/WHO Working Group, Bangkok, Oct. 1981).

Documentation of causes of death allows an evaluation of the health level of a community, assignment of priorities to health interventions and as assessment of their efficacy. There are, however, important conceptual problems related to classification: Cause of death classifications are generally based on western medical models of disease and pathology, and systems such as the International Classification of Disease reflect this bias, being organized primarily by type of

etiologic agent and organ system. In countries where nearly every death is attended by a trained physician, the person determines the cause of death. Review of death certificates after autopsy has shown that there may be misclassification in as much as 30% of the cases( ). In addition, a major theoretical issue with assignment of cause of death is differentiating between direct causes, antecedent causes and contributing conditions (Ibid, pp. 416-426), as for example cerebral hemmorrhage and hypertension (respectively direct and antecedent). Death is multicausal.

There is evidence that in many developing countries the local system of disease classification and even the concept of organization of the body is quite different from that used by physicians trained in the traditional western system. In this context, it must be noted that the International Cause of Death Classification, while useful for selecting medical interventions and evaluating them, may not be helpful in planning health education interventions, for which the local classification system is much more important. On the other hand, the local system may not be adequate in terms of specificity and coverage. Further, it may be innacurate. Thus a basic problem in lay reporting is to develop a fairly simple series of questions to allow meaningful intersection

between two classification systems. One way of doing this though not possible in all cases (London, 1976) is by asking about symptoms, which can be used to define complexes that have a high probability of indicating the cause of death that would be diagnosed by a physician. Ascertainment of cause of death can be viewed as a two-step process; the first step is collecting the information regarding the event and the second step is using this information according to set algorithms (in practice, usually implicit) to decide what should be coded as the cause of death.

Five ways of collecting retrospective information about deaths and classifying it into categories are listed below:

1. Verbal autopsy. Physicians elicit information about the dead person's state of health prior to death in an interview resembling those used with patients. The diagnostic algonthms used are implicit and dependent on the physician's training.

2. Open-ended interview. Trained lay workers elicit information through a series of probes, either in terms of time or structured according to body system or according to another logical system. This approach is used in Teknaf, where the recorded information is reviewed by one or several physicians, who decided on the cause of death. A similar system was used to reinvestigate 23 deaths in Matlab (Claquin and Aman); and a variant of this system was used in Companiganj, based mainly on an interview, but also including a checklist of symptoms.

There are a number of problems with these methods including calibration and reproducibility. If there is any interest in contributory conditions or underlying states of health (e.g. malnutrition; diarrhoea; measles in pneumonia or dysentry deaths) there is no way to ensure that questions about these conditions have been asked. The interviews tend to take a long time--at least an hour. An additional drawback, especially in developing countries, is the cost, both direct and indirect, of using physicians for this kind of activity, rather than preventive or curative medicine.

3. Diagnostic algorithms. Originally developed to allow paramedical workers to diagnose health problems in patients in rural outpatient clinics, flow charts such as those developed by Essex (See Appendix 1.1; Essex 1977) and variations of them can be adapted for use by lay workers in retrospectively diagnosing cause of death. The charts both indicate the next question to be asked and provide a diagnosis at the end of the pathway,thus combing the collecting and classifying processes. One drawback associated with these flowcharts is the large number that are required (Essex has 53) and the dangers of missing important information and if a wrong logical branch is chosen early in the diagnostic process.

4. Standardized questionnaire. This possibility, a questionnaire covering all symptoms and conditions of interest, overcomes the difficulty of wrong choice of logical pathways by separating the collection and classification steps entirely. This is the system which WHO is advocating (WHO, 1978;

Appendix 1.2.). This approach requires less training of workers who collect information, but also involves training the same or other workers to classify the symptoms into cause of death categories, as exemplified in Appendix 1.3. One variation of this approach is a symptom/conditions checklist, which was used successfully as part of the Companiganj form (Appendix 1.4). Using a standardized form increases reproductibility; the major drawback is that it may leave a little scope for times when information might be lost because of restriction of certain categories. However, this is probably the best choice for a lay reporting system.

5. Local classification. This method involves simply recording the responses to the question "what was the cause of death". This is the easiest and most time-efficient of the methods, but has the disadvantage of the possibility large-scale misclassification if there is not one-to-one correspondence between the local and medical classification systems. In large part this is the method used in Matlab (Appendix 1.5); only if the cause is not one of the precoded ones do the fieldworkers ask questions about symptoms.

The Matlab System

The Matlab death reporting system, which has been operating for at least 15 years, is essentially an international system. As of 1966 (the first year for which the Data Management Branch has documentation) deaths were classified in 22 categories (Table 1). Those categories were reduced to eight in 1968, and the list was expanded to 27 categories in 1974. In 1980 smallpox was dropped. (A separate protocol will deal with apparent trends in cause of death over this period and attempt to sort out true trends from reporting artefacts.)

Currently the cause list contains 4 kinds of classification: specific diseases, associated circumstances, major symptom, and cause organ system affected, as well as "other", meaning that a specific cause can be assigned but the death doesn't fit into one of the coded categories (e.g. cancer), and "unknown" (Table 2). Eleven causes and "other" are now listed on the death report form (Appendix 1.5). The field worker marks the appropriate box and also has space to write a description of symptoms leading up to death. Inthe Dacca office this information is used to check the field coding and categorize death marked as "other". This can be difficult, particularly since there is no set manner of probing for symptoms. In addition, since the cause list is based on more than one type of classification, as well as because death is often not monocausal, there are times when two codes are equally valid (e.g., liver diseases and jaundice; dysentry and dropsy).

A review of the 1980 death records from 3 villages (information collected by 2 field workers) reveals some problem areas in the current system: (1) inconsistent classification; (2) improbable diagnoses; (3) vague, non-specific causes; and (4) variation between field workers. Details are to be found in Appendix 2.

Problems in the cause of death forms used in Matlab have long been recognised. The Research Review Committee report on the DSS protocol (80-035) requested an immediate revision (Aziz to D'Souza, August 28,1980). It is clear that the Matlab "Cause of Death" classification system can be improved. However, it is important that changes be made only after prior experimentation and that continuity with past records is maintained.

Much valuable information has been generated by the system to date. Tabulations of deaths by causes are available in DSS reports for 1974 through 1978 (see reference list); 1979, 80 and 81 will be available in the near future. Based on an analysis of 1975-1977 data, Chen et al (1980) reported that tetanus neonatorum accounts for 38.4% of all infant deaths in Matlab. After adjusting for the effect of a diarrhoea treatment centre they concluded that deaths due to diarrhoea (19.6%), respiratory diseases (10.4%) and fever (7.3%) are the other major causes of infant death. However, a large proportion of the causes of infant death (62.2%) are due to other causes as well as unknown causes. In the case of child deaths, diarrhoea(15.1%) and measles (4.5%) were concluded to be the most important reported causes of death in the absence of health interventions. Another study from the Matlab

area has provided valuable insight into the coincidence between the clinical syndrome of neonatal tetanus and the local classifications of alga, dhanustonkar and takuria, demonstrating that not all alga, dhanustonkar or takuria deaths could be attributed to neonatal tetanus (Rahman et al. 1981).

The reporting of causes of death have been done in only a few other parts of Bangladesh, in special project areas. Reports exist for Sylhet (McKay 1962, and 1973), Teknaf (M. Rahaman et al, 1979) and Shariakundi (Blondeaux, 1979). In the Companiganj area, causes of death were determined retrospectively by family interviews which were reviewed by a committee of physicians. Immediate and underlying causes of death were recorded. Where some doubts remained, a physician was sent to interview the family. As field investigators became more proficient, fewer visits by physicians were necessary--the percentages of such visits required for the years 1975, 1976, 1977 and 1978 were 78, 62, 37 and 25 respectively (Chowdhury S.A. and Khan, A.H. 1980). Verbal autopsy by physicians will not be within the purview of this protocol; it will be treated in a separate protocol.

Thus because of the great resource which the Matlab cause of death data represents, before any change is made it is vital to document what the current coded causes, particularly those such as dropsy and rheumatism, represent, how symptoms are selected for recording and what classifying algorithms are used. This protocol is being undertaken to document current causes of

death procedures, experiment with various forms utilising symptom lists, and prepare recommendations for overall changes in the Matlab cause of death forms.

B. SPECIFIC AIMS

1. (Documenting current cause of death reporting)

   a. To document how the field workers currently elicit information about deaths, and if possible, to detect current reporting bias.

   b. To document how information is classified into death categories used by the Matlab DSS system and if possible, to detect current classification bias.

   c. To tabulate and review cause-specific death rates for Matlab for the past 5 years:

      i. To determine the major causes of death for various age-sex categories and compare the ranking and rates with data from various other areas. and,

      ii. To detect and document any time trends in cause-specific rates and determine, if possible, if they are true or artefactual.

   d. To ascertain the variety of known causes that are currently tabulated as "other".

2. (Experiment with symptom list)

   a. To develop and test a symptom list questionnaire that will enable lay reporters to collect useful, accurate, and reproducible information about state of health prior to death.

b. To document symptoms and conditions associated with current Matlab DSS and local categories.

c. To develop and test algorithms to enable lay classifiers to categorize deaths using the symptom list information.

3. (Recommended changes in causes of death reporting--forms and classification system)

a. To provide specific changes with regard to format of death report forms.

b. To provide documentation for the use of the new forms, including symptoms and conditions and special requirements for workers, if any. Care will be taken to maintain continuity with the past.

c. To provide a category or categories (at least one set ICD-compatible) into which deaths can be classified using algorithms developed in this study.

C. METHODS OF PROCEDURE

1. Documenting current cause of death reporting procedures

Determining how field workers currently elicit information about deaths will be carried out by observation of field workers collecting death reports and by interviews with the personnel involved and their supervisors. Additional information will be obtained by comparing the results of the symptoms check list with the death report forms.

In a similar manner, observation and interviews will be used to discuss the classification method currently used. Additional information for this aspect of the study will be provided by comparison of the information written on the death report with the classification assigned. (A brief example of this can be found in Appendix 2.)

To provide five years of time depth for our review of the current system, cause-specific death rates will be tabulated for 1977 through 1981 in the format presented in dummy tables 3 through 6. The age groups are those recommended by WHO (1978); and will allow easy comparison with the rates found in Companiganj (Chowdhury and Khan, 1980). All the data has been collected as part of the regular DSS system and is available on institutional tapes of death records. Most has been or will soon be published in tabulated form in the DSS yearbooks the exceptions being some specific age classification (<7 days, 1,2,3,4 years), MCH-FP and comparison area data for 1977, and all cause-specific monthwise data. Tabulations will be prepared by the Data Management Branch under the DSS budget. The descriptive information generated will be examined to see if it is consistent with what is generally known about certain causes (e.g. age-specificity and seasonality of measkes; age and sex specificity of tetanus; and rates determined elsewhere). In addition all cause-specific rates will be tested for seasonality and various hypotheses will be tested, including

1. There is no difference in age, sex, and cause-specific rates by year.
2. For any particular year, there is no difference in MCH-FP and comparison area rates, either overall or for particular causes.

3. There is no year-to-year difference in cause-specific seasonality.
4. There is no year-to-year difference in timing of cause-specific neonatal death.
5. There is no difference in age and cause-specific rates by sex.

2. Experiment with symptom list

A. Development of Questionnaire

Preliminary work has already been carried out, the forms tested are in Appendix 3. The problems of terminology have been solved for the most part; what remains is some elaboration of the check-list form to provide more descriptive information about a few symptoms--essentially providing questions for guidance about what should be filled in under "Remarks". Iterative pretests will be carried out for all forms until optimal ones are schieved, following the pattern of using forms to elicit information about 10 deaths and then reviewing the results. Criteria for "optimal" would be easy to administer, about 15 minutes long, comprehensible to the interviewee, and providing sufficient medical information for categorization. It is anticipated that at most 2 further iterations will be necessary.

B. Field use of symptom check-list

Starting in March 1982, using the forms developed, special field workers (to avoid contaminating the current system)will visit households

in which there was a death between January and April 1982. The anticipated sample size is about 700 or 800, with about 100 deaths in each of the neonatal, post-neonatal and 1-4 year age groups, and between 300 and 400 in the 5+ group. This sample size is likely to yield at least 5 deaths in almost all current ICDDR,B Matlab categories including maternal mortality. The categories for which there will be fewer deaths include murder, suicide. skin disease, ENT diseases, venereal disease, and possibly accidents (excluding drowning).

To minimize variation in recall because of time since the event, it is planned to collect information about all January deaths in March, all February deaths in April etc. This lag, although possibly as long as 10 or even 12 weeks, allows for the exigencies of the existing Matlab event reporting system and is not unrealistic for countries with no vital registration system. Information will be collected from the member pf the household "who knows most about the death". Because one objective is to develop a form which can be used by workers with a minimum of training, training will be limited to one day and focused mainly on asking the questions the same way each time. After this training and at monthly intervals thereafter, including at the close of the study, interviewers will be calibrated using a trained interviewee giving prepared answers. In addition, each field worker will be observed

in the field by a supervisor at least once every 2 or 3 weeks. Forms will be checked in Matlab for completeness then sent to Dacca for coding (of durations and ICDDR,B and local categories) and keypunching. A sample coding form (to be revised as necessary to confirm with checklist revisions) is included in Appendix 4.

C. Analysis

a. Documenting systems associated with ICDDR,B and local categories

For each current ICDDR,B Matlab category the frequency of positive symptom list responses will be tabulated, in some cases within age and sex-specific classes. In addition, for a subsample of deaths, death reports filled in by DSS workers will be compared with the symptom list information to see the differences in information collected.

For local categories collected in sufficient number ('alga' is expected to be one) the same kinds of tabulations will be made as for current ICDDR,B categories.

b. Categorisation

Using the list of symptom associations developed by WHO (1978) deaths will be classified into the categories used in the full(ICD-3-digit) and minimal (ICD 2-digit) mortality lists (See Appendix 1.3 for example). This can be done either by coders using a simple compuyer program. The result of this categorisation will be compared

with the local and ICDDR,B Matlab categiries, with categories produced by the Matlab physicians after reviewing the forms and with the results of verbal autopsies on a subsample of 20% of the deaths (separate protocol).

On the basis of the discordance between the various categorization systems and their apparent validity, reproducibility and relevance to our needs for death classification in Matlab, we may produce and test additional sets of categories and algorithms for classification. One important decision to be made is the ultimatelist (or lists) of possible causes to be used. This depends on what causes of deaths are of particular interest; the most likely ones are those which allow evaluation of the efficacy of interventions. A second consideration is comparability of data from Matlab with that from other places; this will much easier if a common list and classification algorithms are used. In this regard, the WHO two-digit list should be one of the classifications used. The three-digit list ( ) is another possibility. A double or triple classification system may be most desirable: one general list that will satisfy the basic requirements (comparability and evaluation) and other more refined or detailed lists that reflect particular investigatory interests and may not be operative for more than a few years. Such lists might contain, for example, more detailed diarrhoea or dysentry classifications than provided in any standard list. For at least the first few years of any revised system the current list should be one of those used, to allow continuity of trend analysis.

D. SIGNIFICANCE

The significance of this study is related to the worldwide interest in the problem of documenting health information in rural areas, with specific reference to developing countries. Apart from the importance of revising the Matlab DSS cause of death forms, this study will provide important information for those interested in developing similar systems of lay reporting elsewhere.

E. FACILITIES REQUIRED

1. Office space. As per DSS protocol
2. Laboratory space. None
3. Hospital Resources. None
4. Animal Resources. None
5. Logistic support: As per details in 'Methods'.
6. Equipment: As per DSS protocol
7. Other Requirements: NIL

F. COLLABORATIVE ARRANGEMENTS: NIL

REFERENCES

Blondeaux, J. "Shariakundi Health Complex, Evaluation of one year activity (1976-77). Brothers to all Men. Bogra, Bangladesh 1979.

Chowdhury SA, Khan AH. Causes of death,Companiganj, Bangladesh, 1975-78. Evaluation Unit Report No. 3.

Chen LC, Rahaman M, Sardar AM. Epidemiology and causes of death among children in a rural area of Bangladesh. Intl. J. Epidemiol. 1980, 9(1): 25-33.

D'Souza S. Small-area intensive studies for understanding mortality and morbidity processes. United Nation/World Health Organisation Working Group on Data bases and measurement of level, trends and differentials in mortality, Bangkok, 20-23 October,1981.

D'Souza S. A population laboratory for studying disease processes and mortality. The demographic surveillance system, Matlab, Comilla District, Bangladesh, June 1981, Special Publication No. 13.

Mackay, DM. "Causes of death in tea garden population", East Pakistan Medical Journal, Vol. VI. No. 2, Dacca, East Pakistan 1962

Mackay DM. "Causes of infant mortality in a tea garden population",Bangladesh Medical Journal, Vol. II, No. 2, Dacca, Bangladesh 1975

Rahaman M, et al. The people of Teknaf - births, deaths and migration (1976-77). International Centre for Diarrhoeal Disease Research,Bangladesh, Dacca - 1979.

World Health Organization. Lay reporting of health information. Geneva, 1978.

World Health Organization. Lay reporting of health information for primary health care. Report of a meeting (SEARO) October 27-31. 1980, New Delhi.

World Health Organization and United Nations Environment programme. Nairobi 7-11 September 1981.

World Health Organization. "Cours sur la Notification d'informations sanitaires par un personnel non medical".

Reports of DSS Activities

Demographic Surveillance System - Matlab. Volume One. Methods and Procedures. March 1978. 28p. ICDDR,B Scientific Report No. 9.

Demographic Surveillance System - Matlab. Volume Two. Census 1974 by Lado T. Ruzicka, A.K.M. Alauddin Chowdhury. March 1978. 48 p. ICDDR,B Scientific Report No. 10.

Demographic Surveillance System - Matlab. Volume Three. Vital Events and Migration, 1975 by Lado T. Ruzicka, A.K.M. Alauddin Chowdhury. March 1978. 45 p. ICDDR,B Scientific Report No. 11.

Demographic Surveillance System - Matlab. Volume four. Vital Events and Migration, 1975 by Lado T. Ruzicka, A.K.M. Alauddin Chowdhury. March 1978. 48 p. ICDDR,B Scientific Report No. 12.

Demographic Surveillance System - Matlab. Volume Five. Vital Events and Migration and Marriages-1976 by Lado T. Ruzicka, A.K.M. Alauddin Chowdhury. March 1978. 55 p. ICDDR,B Scientific Report No. 13.

Demographic Surveillance System - Matlab. Volume Six. Vital Events and Migration 1977 by Aporn Samad, Kashem Sheikh, A.M. Sardar, Stanley Becker and Lincoln C. Chen. February 1979. 65 p. ICDDR,B Scientific Report No. 18.

Demographic Surveillance System - Matlab. Volume Seven. Vital Events and Migration, 1978 by Mridul K. Chowdhury, Stan Becker, Abdur Razzak, A.M. Sardar, Kashem Sheikh and Lincoln C. Chen. May 1981. 80 p. ICDDR,B Scientific Report No. 47.

Demographic Studies in Rural Bangladesh: May 1969-April 1970 by A.I. Chowdhury, K.M.A. Aziz and Kashem Sheikh. April 1981. 28 p. ICDDR,B Working Paper No. 16.

Demographic Studies in Rural Bangladesh: May 1970-April 1971 by A.I. Chowdhury, K.M.A. Aziz and Kashem Sheikh. April 1981. 31 p. ICDDR,B Working Paper No. 17.

Demographic Surveillance System - Matlab. Vital Events and Migration - 1978 by Mridul K. Chowdhury, Stan Becker, Abdur Razzak, A.M. Sardar, Kashem Sheikh, Lincoln C. Chen. May 1981, ICDDR,B Scientific Report No. 47.

B. BUDGET SUMMARY

Category	Takas	Dollars
1. Personnel	21,206	-
2. Supplies	3,592	-
3 - 5. Nil Items	-	-
6. ICDDR,B Transport	4,530	-
7 - 8. Nil Items	-	-
9. Rent/Communication	-	-
10. Printing/Reproduction	2,000	-
11. Other Contractual services	-	-
12. Nil Items	-	-
13. Miscellaneous	-	-
TOTAL	31,328	
Total (in US Dollars)	1,958	
Grand Total (in US Dollars)	1,958	

SECTION II

A. DETAILED BUDGET

1. PERSONNEL SERVICES

Position	% Effort	No. of days	Annual Salary	Project Requirements Taka	Dollars
Principal Investigator	10	18	*		
Principal Investigator	50	90	*		
Field Surveillance Branch					
4 Health Asstt.	50	60	22,884	15,256	
Data Management Branch					
1 Sr. Statistical Officer	20	36	*		
1 Data Processing Asstt.	40	72	*		
1 Coding Assistants	100	45	19,565	2,250	
Computer Services					
1 Programmer (national)	100	30		3,500	
2 Data Entry Technician	100	3		200	
SUB-TOTAL				21,206	

* The Principal Investigators salaries are under the CSRWG staff protocol; the Senior Statistical Officer and Data Processing Assistant are under the DSS protocol.

II. SUPPLIES AND MATERIALS	Project Requirements	
	Taka	Dollars
Stationary	1,332	
2 Diskettes	260	
Computer Paper 2000 Sheets	1,000	
Misc. Office Supplies	1,000	

III. EQUIPMENT

None

IV. PATIENT HOSPITALISATION

None

V. OUTPATIENT CARE

None

ICDDR,B TRANSPORT

a. Dacca-Matlab-Dacca - 24 trips (Tk.355 per trip) 528 speed boat hours.	(105,600)*
b. Incremental 6 trips Dacca-Matlab-Dacca + 12 hours speed boat	4,530

VII. TRAVEL AND TRANSPORTATION OF PERSONS

None

* Budgeted under the Matlab SES survey Protocol.

		Project Requirements	
		Taka	Dollars
VIII.	TRANSPORTATION OF MATERIAL		
	None		
IX.	RENT. COMMUNICATION AND UTILITIES		
	None		
X.	PRINTING AND REPRODUCTION		
	Questionnaire cyclostyling (800 3 page questionnaires)	1,300	
	Other Xeroxing	700	
XI.	OTHER CONTRACTUAL SERVICES		
	Computer Time, ICDDR,B, S-34 will be used		
XII.	CONSTRUCTION, RENOVATION, ALTERATION		
	None		
XIII.	MISC. COMPONENTS		
	None		

Table 1: Cause of Current Death Codes 1975 - 81

Causes		74-80[A]
Smallpox		1
Measles		2
Tetanus		3
Drowning		4
Murder		5
Suicide		6
Diarrhea:	Acute	7
	Chronic	8
Dysentry:	Acute	9
	Chronic	10
Childbirth		11
Jaundice		12
Other		13
GI, Stomach		14
Respiratory		15
Heart		16
Liver		17
Venereal Disease		18
Skin		19
Ear, Nose, Throat		20
Cancers (proved)		21

Causes	74-80*
Dropsy	22
Rheumatism	23
Accident	24
Old Age	25
Fever	26
Unknown	27
Total number of causes	27

*Causes 1-13 are listed on form

Table 2: Types of Classification Used in in Present Cause of Death List

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SPECIFIC DISEASES (ETIOLOGIC AGENT)

Measles, Cholera (proved), Tetanus

ORGAN SYSTEM AFFECTED

Respiratory; Gastrointestinal and Stomach; Heart; Liver; Venereal Disease Skin; Ear, Nose and Throat

SYMPTOMS

Jaundice; Fever, Rheumatism; Dropsy; Acute and Chronic Diarrhea; Acute and Chronic Dysentry.

CIRCUMSTANCES OF DEATH

Accident, Drowning; Childbirth; Old age; Murder; Suicide

OTHER

Definite cause not one of the categories, for example, diabetes, cancer.

UNKNOWN

TABLE 3

Cause-Specific Death Rate

	77			78			79			80			81		
Cause	M	F	Both	M	F	Both	M	F	Both	M	F	Both	M	F	Both
Measles															
Tetanus															
Fever															
Unknown															
All															

For ages <7 days, 7-27 days, <28 days, 28 days - 11 months, 1 year, 1-4y, 5-14, 15-44, 45-64, 65+

Also calculate column percents (cause-proportionate mortality)
Also calculate F:M ratios

TABLE 4

Age, sex and area-specific death rate

Age at death	MCH-FP				Comparison				Both				Comp/MCH Ratio		
	Both	M	F	F:M	Both	M	F	F:M	Both	M	F	F:M	Both	M	F
All															
L1MO															
1-11MO															
L1Y															
1															
2															
3															
4															
1-4															
5-9															
10-14															
15-44															
45-64															
65+															

For each year for all causes combined and for tetanus, measles, all diarrhea, all dysentry, dropsy, fever and respiratory separately (causes which may show any MCH-FP effect).

TABLE 5

MOnthly death rate by cause

Cause	Month of Year 1	2	3	4	5	6	7	8	9	10	11	12
Measles												
Tetanus												
Fever												
Unknown												

For each year and the appropriate age-sex groups for each cause: (i.e. old age only for the 45-64 and 65+ groups; childbirth only for 15-44 females; tetanus for 1 mo and 1-11 mo, etc.)

Also calculate row and column percents.

Also calculate F:M ratios

Table 6
Timing of neonatal death

	Day after birth												
	0	1	2	3	4	5	6	7	8	9	10	11	12
Cause													
Tetanus													
Other													
Fever													
Unknown													
?													
All													

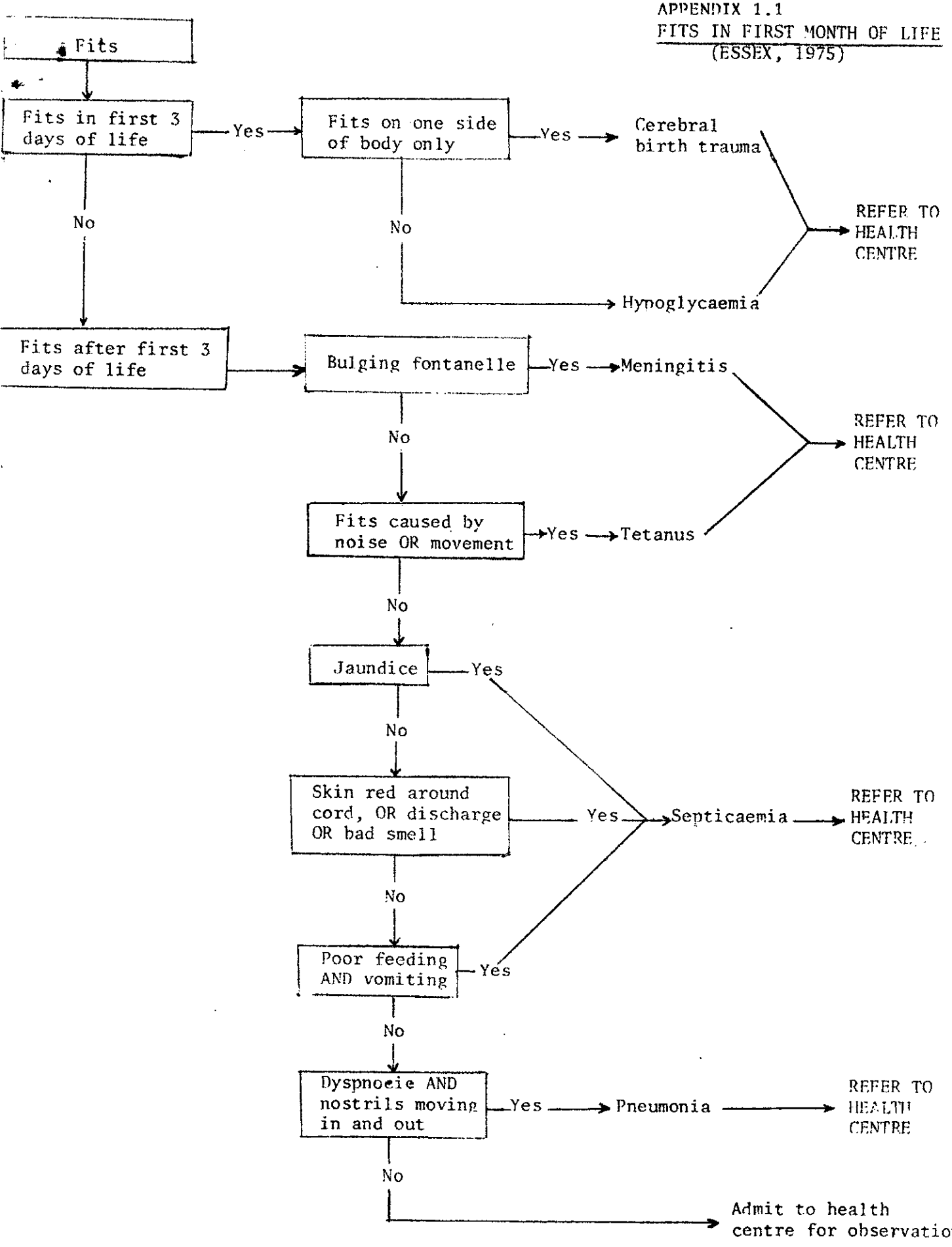
For each year, for sexes separately and combined, for the appropriate causes

Also calculate row and column percents.

Also calculate F:M ratios

APPENDIX 1.1

FITS IN FIRST MONTH OF LIFE
(ESSEX, 1975)



APPENDIX 1.2

WHO QUESTIONS FOR ELICITING SYMPTOM INFORMATION

(Translated from WHO)

1. Was the death due to sickness, accident, suicide or murder ?
2. (if sickness) Did the sickness start suddenly or slowly ?

(Now determine which of the symptoms on the following list were present)

3. Fever
4. Chills
5. Diarrhoea
6. Vomiting
7. Cough, and for how long ?
8. Blood in sputum
9. Trouble breathing
10. Pain and in what part of the body ?
11. Cessation of urination
12. Bleeding, and in what part of the body ?
13. Pus, and in what part of the body ?
14. Ankle edema
15. Weight loss
16. Was the sick person reduced "to skin and bones"
17. Convulsions
18. Paralyses, and of what part of the body
19. Skin rash

(If the deceased was a woman, determine her status among the following options

20. Not pregnant
21. Pregnant, died before labor started
22. Pregnant, died after labour started
23. Pregnant, died after the birth
24. Had an abortion

(If the response to question 1 was accident, determine the type among the following options)

25. Bite of a dog, a cat, or another non-venemous animal
26. Bite or sting of a venemous animal
27. Burn
28. Fall
29. Poisoning
30. Automobile accident
31. Accident of another kind of transport
32. Other accident (for example, crushed by a machine, cut working with a circular saw)

(if the response to question 1 is suicide or murder)

33. Describe the circumstances in detail.

APPENDIX 1.3

WHO MINIMAL MORTALITY LIST CATEGORIZATION

(Translated from WHO)

Coding consists in using the recorded symptom or collection of symptoms to assign a code number from the list. The alphabetical index of symptoms is an unimportant aid in this process.

For example: a young man for whom the symptoms are fever for 3 days and cough:

a) search the index for fever. There is no associated symptom cough so

b) search the index for cough. Acute cough with fever is code 085. Since the cough lasted only 3 days (and chronic cough is defined as more than 3 months) the corfect code is 085.

Portion of index (WHO)

Cough 089
- acute, with fever (with) 085
- - chest pain, shortness of breath 082
- acute, with fever (with) - continued
- - muscular pain, headache, nose and throat discomfort 083
- - typical whoop 084
- chronic (3 months or more), loss of weight, blood in sputum, slight fever 080
- - laboratory confirmation of tuberculosis 081

Fever, unqualified (with) 039
- additional symptoms, not elsewhere classified 038
- high, with
- - intermittent, chills, prostration 030
- - - laboratory confirmation of malaria 031
- - prostration, painful glands, bubo 091
- - yellow skin and whites of eyes, discoloured stools, articular pains 014
- neck rigidity, vomiting, skin rash 024
- neurological manifestation, not elsewhere classified 029
- paralysis 023
- prostration (with)
- - ocular paralysis, [illegible]ular pains 020
- - severe headache, articular pains [illegible]
- pustules, healing with pitting 012
- red rash, disappearing in several days 010
- skin manifestation, not elsewhere classified 019
- vesicular blisters, healing-clear 011
- yellow skin and whites of eyes, discoloured stools, articular pains 013
- yellow* 014

appendix 1.4

FORM NO.3.

S.No.____

COMPANIGONJ HEALTH PROJECT
BASHURHAT, NOAKHALI.

DEATH REPORT FORM

Bari_____No.____
Vill._____
Union_____

Sub-Sub-Sector No.____
Deceased House No.____
Deceased family No.____

Informant's Name:_____
Relationship with the deceased_____

NAME OF THE DECEASED:_____IND.NO.____ SEX:MALE/_/FEMALE/_/
Date of death:_____day_____Month_____Year+ Date of birth:_____

+Exact age of the deceased at the time of death:____Year___month___day

+(Specially for the children under 4 years).

Usual residence of the deceased - In this household/_/
Outside of this household/_/

Place of death: In this household/_/ Outside of this household/_/
If outside, give location:Bari name:_____Vill._____ P.O._____
Thana_____Dist._____

Marital status:Never married/_/Married/_/Widow/_/Separated/_/
Divorced/_/

If the deceased was a married woman, ask:Was she pregnant?Yes/_/No/_/
Was the deceased ever seen by any project personnel before death?
Yes/_/ No/_/

If YES:Where - RHC Clinic/_/Bamni Clinic/_/Sub-Centre/_/
Hospital bed patient/_/ When_____How often_____
If NO:By whom:None/_/Kabiraj/Vill.doctor/Quack/_/Homeopath/_/Dai/_/
Khoner/Pir/Fakir/_/ Others(specify)_____
General history from the family:(If the deceased is within 28 days of age).

Check the following	Yes	No	Duration
Was this a full term birth?			
Could the baby took the breast milk?			
Was there any fever?			
Was there any cough?			
Was there any difficulty in breathing?			
Was there any problem at the time of birth?			
Did the baby turn blue or black?			
Was there any spasms?			

+Check: If the deceased is under 5 years:Whether the child had yellow card? Yes/_/ No/_/

Whether yellow card is available now?
Yes/_/ No/_/

2.

General history from the family:(If the deceased is at the ag of 28 days or older).

Check the folloving except died of accident and drowning	Yes	No	Duration
Was there any fever?			
Was there any cough?			
Was there any blood with cough in sputum?			
Was there any trouble in breathing?			
Was there any vomiting?			
Was there any rashes?			
Was there any loose motion?			
Was there any loose motion with blood/mucus?			
Was there any loose motion more than 10 times daily?			
Was there any swelling of abdomen?			
Was there any swelling in legs or other parts?			
Deceased could eat enough food?			
Enough food was available for the deceased?			

Recorded by:_____

Supervisor Date:_____

FOR DOCTOR'S USE

DOCTOR'S CONFERENCE DX: Immediate cause of Death:_____
Underlying cause of death:_____

History from the family(Made in home visit) Doctor's Signature

COCTOR'S DX: (Made after home visit)
IMMEDIATE CAUSE OF DEATH:_____
UNDERLYING CAUSE OF DEATH:_____

Doctor's Signature

nn:

APPENDIX 1.5

DEATH REPORT

(CDDR,B/MATLAB

	Village		Code		Study No.

of deceased :

f death : Day | Month | Year

Years | Months | Days | Sex | M | F

f age | Census | M-In | Date of M.In _____ Date of Birth _____

o : '68/'70 _____ Census No. '74/_____

r's VTS No. 68/'70 _____ Cenus No. 74/_____ (If any)

l Status at the time of death

Married | 1 | Married | 2 | Widowed | 3 | Separated | 4 | Divorced | 5

tion at death | Occupation at death

and symptoms leading up to death :

es	01	Diarrhea : Acute	06	Chronic	07
us	02	Dysentery : Acute	08	Chronic	09
ning	03	Childbirth	10		
er	04	Jaundice	11		
le	05	Other not covered above	12		

toms Leading up to death _____

Residence, _____ Code
Village P. O. Thana

of death. _____ Code
Village P. O. Thana

of Doctor Consulted :

ced Allopath [1] Allopath quack [2] Homeopath [3] Kabiraj [4] Others [5] Doctor not Consulted [6]

rks _____

rted by _____ Date _____

entered _____

l Vol. | Matlab Vol.

APPENDIX 2

Review of the 1980 death records from 3 villages (information collected by 2 field workers) reveals some problem areas in the current system:

1. Inconsistent classification

   One death for which the only recorded information is that pneumonia was present (case 21) is coded "other"; two others (cases 27 and 40) are coded as due to "fever".

2. Improbable diagnoses:

   a) Whooping cough in older men. Three men ages 38, 34 and 64 (cases 33, 51 and 56) were classified as having died from whooping cough.

   b) Rheumatism. "Rheumatism" is the coded cause of death for an 5 day-old child (case 20); and a 75 year-old man (case 10).

   c) Tetanus. The most likely time for neonatal tatenus deaths is between 4 and 14 days after birth ( ). Two infants (cases 37 and 55), age 3-days and 2 days, are coded as tetanus deaths. In 1979, only 50% of the deaths coded as due to neonatal tetanus occurred between days 4 and 14; 36% occurred before day 4..

3. Vague, nonspecific causes:

   Eleven of the 31 deaths occurring in village 1 were associated with dysentry (cases 1,3,6,9,12, 13,22,23, 29,31). In 6 of these, whenever it was recorded as a symptom, "dropsy" is the coded cause of death. One of the 'deaths' was coded as due to old age; the rest as due either to chronic or acute dysentry.

..2

4. Variation between field workers:

Examination of what the two field workers wrote on their forms for the tetanus deaths indicates that each worker tends to have a stereotyped description. Field worker 1 mentions that the infant could not suck and, in 2 of 3 cases, that it was discoloured. Field worker in 2 in all 11 cases mentions that the infant refused the breast and in 10 cases that it cried loudly, but never indicates colour. Because the recording is open-ended, it is unclear whether relatives were asked about cramping.

APPENDIX 2.1 : Information on death forms and coded cause of death for 60 deaths in 3 villages, in 1980 collected by two field workers.

Fieldworker 1, Village 1

Case	Age	Sex	Written of Form	Coded Cause
1	80 y	M	Dysentery, loose motion, couldn't eat food	Acute dysentery
2	65 y	M	Rheumatism few days, pain stomach, sudden death	OI
3	4 y	F	Bloody dysentery associated with diarrhoea and dropsy	Dropsy
4	68 y	F	Before 3 days of death she suffered fever	Fever
5	7 d	F	Evil spirit, couldn't suck mother's breast, discoloured	Tetanus
6	3 m	M	Chronic dysentery, some days before death, dropsy and acute diarrhoea	Dropsy
7	2 y	M	Dropsy	Dropsy
8	76 y	F	Dysentery, due to old age passed urine several times a day, fever	Old age
9	2 y	F	Attacked by dysentery and dropsy and at time of death blood from her mouth	Dropsy
10	75 y	M	Rheumatism since February 79	Rheumatism
11	5 d	F	-------	Tetanus
12	25 y	M	Dysentery associated with dropsy and loose motion	Dropsy
13	4 y	F	Had been suffering from dysentery and suffered fever for 3 days and could not eat any food	Chronic dysentery
14	5 d	M	Evil spirit, since birth cried loudly and could not suck mothers breast	Tetanus
15	1 y	F	Water contained in body, could not take food, properly and died	Dropsy
16	9 m	M	Fever, measles	Measles
17	5 y	M	Drowning	Drowning
18	3 y	M	Fever for 8 days associated with measles	Measles
19	2 y	F	Drowning	Drowning
20	5 d	F	Suddenly attacked by rheumatism	Rheumatism
21	21 d	M	Penumonia, difficulty breathing	Other
22	60 y	M	Dysentery, could not eat properly	Acute dysentery
23	2 y	F	Dysentery, diarrhoea, dropsy	Dropsy
24	2 y	F	Liver pain, fever, dropsy, became thin	Liver
25	2 y	M	Evil spirit, couldn't such breast milk, discoloured	Tetanus

Contd...../2

Contd.

Case	Age	Sex	Written on form	Coded Cause
26	70 y	M	Liver pain, fever, became thin	Liver
27	20 d	M	Pneumonia, became thin	Fever
28	65 y	F	Cancer	Other
29	4 y	F	Dysentery and dropsy	Dropsy
30	4 y	M	Fell from roof onto bamboo stick	Accident
31	1 y	F	Dysentery and fever	Acute dysentery
Fieldworker 2, village 2				
32	12 d	F	Alga, refused breast, cried	Tetanus
33	38 y	M	Whooping cough	Respiratory disease
34	8 d	F	Alga, refused breast, cried, cramped body	Tetanus
35	16 d	F	Alga, etc.	Tetanus
36	4 d	F	Alga, etc.	Tetanus
37	3 d	F	Alga, etc.	Tetanus
38	1 m	M	Refused breast, creid loudly	Tetanus
39	68 y	F	Cancer since 2 months	Other
40	1 m	F	Pneumonia since 1 month	Fever
41	14 d	F	Alga, etc.	Tetanus
42	75 y	M	Old age - couldn't move or eat properly	Old age
43	8 d	F	Alga, etc.	Tetanus
44	3 y	F	Lame and thin from birth	Other
45	1 y	M	Liver	Liver
46	1 m	M	Refused breast, cried loudly	Tetanus
Fieldworker 2, village 3				
47	48 y	F	Cancer since 1 month	Other
48	65 y	F	Fever and dysentery	Acute dysentery
49	4 d	M	Refused breast milk, cried loudly	Tetanus
50	58 y	F	Cancer since 1 month	Other
51	34 y	M	Whooping cough	Respiratory
52	2 y	F	Fever and cough since 7 days	Fever
53	6 y	F	Heart failure	Heart
54	48 y	M	Cancer	Other
55	2 d	F	Refused breast	Tetanus
56	64 y	M	Wheeping cough and severe headache	Respiratory
57	2 m	F	Alga, not feed at breast, cry	Tetanus
58	5 y	F	Dropsy and fever - 20 days	Dropsy
59	2 y	F	Fever - 20 days	Fever
60	1 y	M	Fever - 20 days	Fever

Census # _____ 3 - 12 _____ _____ Age (Years) __ __ Sex ___ Date of Birth __ __ __ __ __ __

Date of Death __ __ __ __ __ __ Related to Pregnancy or Childbirth No [1] Yes [2]

Was Death Sudden ? No [1] Yes [2] Accident No 1 Yes 2

What do you think was the cause of death ? _____

Was There:	Bengali word or phrase used	1 No	2 Yes	For How Long ?	REMARKS
Fever					
Cough					
Cough with Blood in Sputum					
Trouble Breathing					
Skin Rash					
Stool Stopped					
Stool Watery					
Stool with Blood or Mucous					
Jaundice					
Weight Loss					
Swollen Abdomen					
Urination Increased					
Urination Reduced					
Convulsions					
Cramping					

APPENDIX 3.1 - 43

Nosebleed					
Vomiting Blood					
Black Stool					
Blood In Urine					
Other Bleeding					
Paralysis					
Cancer or tumor					
Swelling of Legs					
Swelling of Hands					
Swelling of Face (Eyelids)					
Other Swelling					
Headache					
Other Pain					
Enough Food Available					
Took Food Properly					

Other (Story of death) [illegible]

Date of Visit ___ ___ ___ ___ ___ ___
150 155

HA ___ ___
156 157

Information From: _____

Relationship To Dead: _____

APPENDIX 3,2

Symptom list: Neonates (less than 1 month old)

First I'd like to ask some questions about the pregnancy and birth.

1. Was this the mother's first child?

   ☐ Yes ☐ No. How many other births has she had?_____

   Did any of those children die soon after birth?

   ☐ No ☐ Yes ⟶ How many?_____

2. Was this pregnancy unusual or difficult?

   ☐ No ☐ Yes ⟶ In what way?_____

   _____

   _____

   _____

3. Was the birth unusual or difficult?

   ☐ No ☐ Yes ⟶ In what way? _____

   _____

   _____

   _____

4. How long was it between the first pain and the birth?_____

5. When did the water break (how long before birth)?_____

6.

7. Had the mother ever received tetanus injection?_____

   ☐ No ☐ Yes ⟶ How many and when?_____

   _____

Now we'll talk about the child just after birth.

8. What was its color?_____

9. Did it begin to breathe easily

☐ Yes ☐ No ⟶ How long before it breathed?_____
What was the trouble?_____
_____

10. Did it cry?

☐ No ☐ Yes ⟶ Was the cry ☐ weak or ☐ strong?

11. Was the child ☐ normal or ☐ limp?

12. Was there anything unusual about the child?

☐ No ☐ Yes ⟶ What was it?_____
_____
_____

13. How big was the child?_____

14. When did the child first suck?_____
_____

15. Did the child take the breast normally?

☐ Yes ☐ No ⟶When did it stop?_____
Why did it stop?_____

16. Did the child vomit?

☐ No ☐ Yes ⟶ When did this start?_____
Did it vomit ☐ much or ☐ little?
What color was the vomit?_____

17. Did the child pass stool normally

☐ Yes ☐ No ⟶ When did the trouble start?_____
Describe the troubles_____
_____

18. Did the child pass urine normally?

☐ Yes ☐ No ⟶ When did this trouble start?_____

Describe the trouble_____

_____

19. Did the child have trouble breathing?

☐ No ☐ Yes ⟶ When did this trouble start?_____

Was the breathing

☐ faster than normal

☐ slower than normal

☐ stopped from time to time

Did the nostries move? ☐ No ☐ Yes

Was there any sound?

☐ No ☐ Yes ⟶ Describe _____

_____

Other description of the trouble_____

_____

_____

20. Did the child move its arms and legs normally?

☐ Yes ☐ No ⟶ Was there ☐ cramping

☐ fits

☐ paralysis

☐ Other_____

Describe the movement_____

_____

When this happened, was the body

☐ hard like wood ☐ moving

☐ other_____

When did it start?_____

Did it happen ☐ all the time or ☐ from time to time

more.....

When it happened was the child

☐ awake
☐ sleepy
☐ like dead
☐ Other_____

Was the unusual movement on

☐ one or ☐ both sides of the body?

Did light or noise make the movement worse?

☐ No ☐ Yes

Was the fontanelle

☐ normal or ☐ unusual ⟶ Describe_____

_____

22. Did the child move its head normally

☐ Yes ☐ No ⟶ Describe the trouble_____

_____

When did it start_____

23. Before the child died, were its eyes

☐ shut ☐ shut tightly ☐ wide open (big) ☐ other_____

24. Did the child move its eyes normally

☐ Yes ☐ No ⟶ Describe_____

_____

25. Did the child have fever

☐ No ☐ Yes ⟶ When did it start?_____

Was the fever ☐ low or ☐ high?

(Other information)_____

_____

26. Was the color of the child unusual

☐ No ☐ Yes ⟶ Describe _____

_____

When did this start?_____

27. Did it have a rash or skin trouble ?

☐ No ☐ Yes Describe .....

.....

When did this start ? .....

28. Did the cord heal normally ? ☐ No ☐ Yes

29. Did the cord smell bad ? ☐ No ☐ Yes

30. Was the skin around the cord red ? ☐ No ☐ Yes

31. Was there water or swelling in any part of the body ?

☐ No ☐ Yes In what part of the body ? .....

.....

When did this start ? .....

.....

(Other information) .....

.....

32. Did the child cry a lot ?

☐ No ☐ Yes Describe the sound .....

.....

What was the reason ? .....

.....

.....

When did this start ? .....

APPENDIX 3.3

Interviewer:_____

Symptom List: Adults

he time before death did _____(name)_____ have:

FEVER? NO ☐ YES ☐ → 1. For how long?_____

2. Was the fever low ☐ or high ☐ ?

3. Did the fever occur every day? No ☐ Yes ☐

4. When in the day did the fever occur

In the morning? No ☐ Yes ☐

In the afternoon? No ☐ Yes ☐

In the night? No ☐ Yes ☐

5. Was ther sweating with the fever? No ☐ Yes ☐

6. (Other information)_____

_____

COUGH? NO ☐ YES ☐ → 1. For how long?_____

2. When in the day was there cough

In the morning? No ☐ Yes ☐

During the day? No ☐ Yes ☐

During the night? No ☐ Yes ☐

3. When (name) was coughing, was there sputum?

No ☐ Yes ☐ → What was the color?_____

4. (Other information)_____

_____

TROUBLE BREATHING?

NO ☐ YES ☐ → 1. For how long?_____

2. Did this trouble start slowly ☐ or suddenly ☐ ?

3. Did (name) have trouble breathing

All the time? No ☐ Yes ☐

Only with exercise? No ☐ Yes ☐

When lying flat? No ☐ Yes ☐

4. Was there pain with breathing?

No ☐ Yes ☐ → Where in body?_____

5. Was there a sound with breathing?

No ☐ Yes ☐ → Describe_____

6. (Other information)_____

_____

VOMITING? NO ☐ YES ☐ ⟶ 1. For how long?_____

2. How many times a day?_____

3. Color_____

4. (Other information)_____

_____

NORMAL STOOL HABIT?

YES ☐ NO ☐ ⟶ 1. Was there

Constipation? No ☐ Yes ☐

Diarrhea? No ☐ Yes ☐

Dysentery? No ☐ Yes ☐

2. For how long?_____

3. Was the stool consistency

Hard? No ☐ Yes ☐

Normal? No ☐ Yes ☐

Soft? No ☐ Yes ☐

Watery? No ☐ Yes ☐

4. What was the stool colour?_____

5. Was there mucous? No ☐ Yes ☐

6. Was there blood? No ☐ Yes ☐

7. How many times a day?_____

8. Did (name) have to get up at night? No ☐ Yes ☐

9. Was there pain with defecation?

No ☐ Yes ☐ ⟶ Where?_____

10. Did (name) have piles?

No ☐ Yes ☐ ⟶ Since how long?

11. (Other information)_____

_____

NORMAL URINATING HABIT?

YES ☐ NO ☐ ⟶ 1. For how long?_____

2. Was the amount of urine

Normal? No ☐ Yes ☐

Decreased? No ☐ Yes ☐

Increased? No ☐ Yes ☐

3. Was the number of times a day

Normal? No ☐ Yes ☐

Decreased? No ☐ Yes ☐

Increased? No ☐ Yes ☐

4. Did (name) have to urinate during the night?

No ☐ Yes ☐ ⟶ How many times?_____

5. Was there pain or buring with urination?

No ☐ Yes ☐

6. What was the color of urine?_____

7. (Other information)_____

_____

NORMAL EATING AND DRINKING HABIT?

YES ☐ NO ☐ ⟶ 1. For how long?_____

2. Amount of food taken

Increased? No ☐ Yes ☐

Normal? No ☐ Yes ☐

Decreased? No ☐ Yes ☐

3. Amount of water or liquid taken

Increased? No ☐ Yes ☐

Normal? No ☐ Yes ☐

Decreased? No ☐ Yes ☐

4. Did (name) want to eat?

No ☐ Yes ☐

5. Was (name) able to eat?

Yes ☐ No ☐ ⟶ Why not?_____

6. (Other information)_____

_____

. SKIN RASH? NO ☐ YES ☐ ⟶

1. What kind of rash?_____
2. For how long?_____
3. Was the rash
   All over the body? No ☐ Yes ☐ or
   On one part of the body? No ☐ Yes ☐
   ↓
   Where?_____
4. Was the rash large ☐ ? or small ☐ ? or mixed ☐ ?
5. Was there water? No ☐ Yes ☐
6. Was there itching? No ☐ Yes ☐
7. Was there fever with the rash?
   No ☐ Yes ☐ ⟶ For how many days before the rash?_____
8. Did the rash disappear?
   No ☐ Yes ☐ ⟶ After how many days?_____
9. (Other information)_____

_____

. WATER OR SWELLING IN ANY PART OF THE BODY?

NO ☐ YES ☐ ⟶

1. Water in the legs?
   No ☐ Yes ☐ ⟶ For how long?_____
2. Swelling of the hands?
   No ☐ Yes ☐ ⟶ For how long?_____
3. Swelling around the eyes?
   No ☐ Yes ☐ ⟶ For how long?_____
4. Did swelling disappear during the day or with movement?
   No ☐ Yes ☐
5. Swelling of abdomen?
   No ☐ Yes ☐ ⟶ For how long?_____
6. (Other information)_____

_____

10. PAIN? NO ☐ YES ☐ →
1. Where in body?_____
2. For how long?_____
3. Headache?
No ☐ Yes ☐ → Where in head?_____
4. Pain in stomach? No ☐ Yes ☐
Was it worse before ☐ or after ☐ eating?
5. Pain with exercise?
No ☐ Yes ☐ → Where in body?_____
6. Heart pain?
No ☐ Yes ☐ → For how long?_____
7. (Other information)_____

11. JAUNDICE? NO ☐ YES ☐ →
1. For how long?_____
2. Was the urine yellow ☐ ? brown ☐ ?
other color ☐ ?
3. Were the eyes yellow? No ☐ Yes ☐
4. Were the palms yellow? No ☐ Yes ☐
5. Did the jaundice disappear?
No ☐ Yes ☐ → After how many days?_____
6. (Other information)_____

12. RHEUMATISM?
NO ☐ YES ☐ →
1. For how long?_____
2. What part of body?_____
3. Did it start suddenly ☐ or slowly ☐ ?
4. Was there pain in joints?
No ☐ Yes ☐ → Where?_____
5. Was there swelling of joints?
No ☐ Yes ☐ → Where?_____
6. Was there a color change of any part of the bod
No ☐ Yes ☐ → Describe_____
7. (Other information)_____

13. PARALYSIS? NO ☐ YES ☐ →
1. For how long?_____
2. What part of body?_____
3. Did it start suddenly ☐ or slowly ☐ ?
4. (Other information) _____

14. CRAMPING OR FITS?

NO ☐ YES ☐ →
1. For how long?_____
2. Was this cramping ☐ or like epilepsy ☐ ?
3. Did noise or light make the cramping or fits worse?
No ☐ Yes ☐
4. Was (name) aware ☐ drowsy ☐ unconscious ☐ ?
5. (Other information)_____

15. NORMAL MENTAL STATE?

YES ☐ NO ☐ →
1. For how long?_____
2. Describe the mental state_____
3. Did this start suddenly ☐ or shlowly ☐ ?
4. (Other information)_____

16. WEIGHT LOSS? NO ☐ YES ☐ →
1. For how long?_____
2. Was (name) just skin and bones?_____
3. Did weight loss happen slowly ☐ or quickly ☐
4. Did (name) lose weight because he was not eating enough or because of other reasons?_____
5. (Other information)_____

17. LOSS OF BLOOD OR EASY BLEEDING ?

NO ☐ YES ☐

1. For how long ? _____
2. From what part of body ? _____
3. How frequently ? _____
4. (Other information) _____

18. CANCER OR TUMOR ?

NO ☐ YES ☐

1. For how long ? _____
2. Where in body ? _____
3. (Other information)? _____

Symptom list: Adult women

(If dead person was woman)

19. TROUBLE WITH MENSTRUATION?

☐ NO ☐ YES ⟶ 1. For how long?_____

2. Describe trouble_____

_____

_____

(If woman was married)

20. WHEN WAS HER LAST MENSTRUAL PERIOD?_____

21. WAS SHE PREGNANT?

☐ NO ☐ YES ⟶ 1. How many months pregnant?_____

2. Was death related to pregnancy?

☐ No ☐ Yes

3. (Other information)_____

_____

_____

22. HAD SHE GIVEN BIRTH IN THE LAST 2 MONTHS?

☐ NO ☐ YES ⟶ 1. Was death related to the birth?

☐ No ☐ Yes

2. Did she have shutika? ☐ No ☐ Yes

3. (Other information)_____

_____

_____

APPENDIX 3.4

Cause of Death Study

Form 1 (verbatim history) - all deaths Interviewer:_____

> We are trying to learn more about why people die. Recently someone in this house died; if you give your permission we would like to ask some questions about that death from the person who knows most about it. The questions will take about one-half hour; the information will be kept confidential. May we proceed?

STATUS

☐ Interview started at (time)_____ Date_____

☐ Interview not possible now, come back (date)_____

Reason_____

☐ Interview refused. Reason_____

☐ Mistake. No death in this house (other information_____

_____

1. (Check information written below and fill in blanks)

Name_____

Current ID No. _____ Registration No._____

Date of Birth_____ Date of Death _____ Sex_____

(Now ask questions)

2. What do you think was the cause of death?_____

3. Was (name) ill before death? ☐ Yes ☐ No (go to 6)

4. What was the first sign that (name) was ill?_____

_____

_____

5. When was this?_____(go to 8)

6. (If no illness) What was the first sign that (name) would die?___

_____

_____

7. When was this?_____

8. Now tell me what happened then_____

Just to be sure I have noted all the signs of illness I will read you a list of them. Please tell me of (name) was having this trouble before death

APPENDIX 4

SUGGESTED CODING PLAN

Registration No.

Current No.

Sex

Date of Birth

Date of Death

Local classification

ICDDR,B classification

Symptoms or conditions - for each

1. absence or presence, characteristics
2. starting time
3. duration

for example:

Fever col _____ absence = 1, presence, low = 2, presence, high = 3

starting time { col _____ Kind of measure 1 = year 2 = Mo 3 = days 4 = hrs.
col _____ number

duration { col _____ Kind of measure
col _____ number

so a child having a high fever which started 4 days before death and lasted until death would be coded: 3304304

one having a high fever starting about a month before death and lasting 6 days would be coded: 3201306

মৌখিক সম্মতি পত্র

আন্তর্জাতিক উদ্ভিদসত্ত্ব সংরক্ষণ কেন্দ্র (প্রোটেক্ট প্লান্টের রিসার্চ লেবরেটরী) মতলবে মৃত্তিকা কারনের উপর খুঁটিনাটিভাবে তথ্য সংগ্রহ করার পরিকল্পনা করেছে। আমরা মৃত ব্যক্তির বয়স, লিংগ, মৃত্যুর সময়, মৃত্যুর কারনের উপর কিছু প্রশ্ন করব এবং এজন্যে আপনার সময় নিতে চাই। এ ব্যাপারে আপনার যেসব মতামত তথ্যাবলী নেওয়া রাখা হবে। এ জন্য আপনাকে কোন টাকা পয়সা দেয়া হবে না। আপনি ইচ্ছে করলে যে কোন সময় প্রশ্নের জবাব দেয়া বন্ধ করতে পারেন। এ ব্যাপারে আপনার কোন প্রশ্ন থাকলে আমরা জবাব দিতে চেষ্টা করব।

আপনার কোন প্রশ্ন আছে কি ?

আপনি কি আমাদের সহযোগীতা করতে রাজী আছেন ?

Appendix - 5

Verbal Consent Statement

The International Centre for Diarrhoeal Disease Research, Bangladesh (formerly Cholera Research Laboratory) is planning to collect some indepth information on "Cause of Death" of some deceased individual of Matlab DSS area. We will collect information on age, sex, date of death and cause of death of the deceased. You will be asked some questions relating to the above variables and it will be treated as confidential. Please note that you will not be paid. You may, at any time, refuse to answer questions. If you have any questions we will try to answer them.

Do you have any questions now ?

Do you agree to participate ?