Application No: 78-015

Title of Study: Birth Care Practices and Infant Mortality in Teknaf - Analysis of Correlates.

Project Status:
(X) New Study (Re-formulated protocol)
() Continuation with change
() No change (do not fill out rest of form)

Circle the appropriate answer to each of the following (If Not Applicable write NA):

1. Source of Population:
a) Ill Subjects: Yes No
b) Non-Ill Subjects: Yes No
c) Minors or persons under guardianship: Yes No

2. Does the study involve:
a) Physical risks to the subjects: Yes No
b) Social risks: Yes No
c) Psychological risks to subjects: Yes No
d) Discomfort to subjects: Yes No

3. Invasion of Privacy: Yes No
4. Disclosure of information possibly damaging to subject or others: Yes No

5. Will signed consent form be required:
a) From subjects: Yes No
b) From parent or guardian (if subjects are minors): Yes No

6. Will precautions be taken to protect anonymity of subjects: Yes No

7. Check documents being submitted herewith to Committee:
   - Only in proposal - Initially submit a copy (all other requirements will be submitted with individual studies).
   - Protocol (Required)

8. Abstract summary (Required)
   - Statement given or read to subjects on nature of study, risks, types of questions to be asked, and right to refuse to participate or withdraw (REQUIRED)
   - Informed consent form for subjects
   - Informed consent form for parent or guardian
   - Procedure for maintaining confidentiality
   - Questionnaire or interview schedule

If the final instrument is not completed prior to review, the following information should be included in the abstract summary:

1. A description of the areas to be covered in the questionnaire or interview which could be considered either sensitive or which would constitute an invasion of privacy.
2. Examples of the type of specific questions to be asked in the sensitive areas.
3. An indication as to when the questionnaire will be presented to the Board for review.

Agree to obtain approval of the Review Board on Use of Human Volunteers for any changes involving the rights and welfare of subjects before making such change.

Principal Investigator: Md. Shafikul Islam
Trainee Investigator (if any): None

Supporting Agency (if non-CRL): None

铡 deste return 2 copies of entire protocol to Chairman, Review Board, Health and Welfare, CRL.

Date: 18. 8. 18
This protocol intends to study the influence of birth care practices (birth attendants, method of cutting and dressing of the umbilical cord) on infant mortality and the socio-demographic factors (Mother's age, sex of infant birth order, number of living and dead children, father's occupation and mother's education) which determine the relationship. Data for this work were generated from the routine registration of birth and death reports collected in the Teknaf Demographic Surveillance system effective 1976. The survivors of the birth cohort of 1976 will be compared with the infants who died within one year of birth according to the aforementioned variables.

1. The study will involve about 1,800 live birth and 270 infant death reports which are already complete.

2. Not applicable (Data generated from routine reports).

3. Not Applicable

4. Data will be kept at personal care so that adequate confidentiality is maintained. No identifying information will be required to be quoted.

5. Not applicable

   a. Not applicable
   b. Not applicable

6. Not applicable (Data source is routine reporting system)

7. This kind of work will create social awareness of birth care practices, the factors and causes of infant mortality which may ensure welfare of mothers and infants.

8. Completion of this work will be based on the birth and infant death records which were already collected.
SECTION 1 - RESEARCH PROTOCOL

1. Title: Birth Care practices and Infant mortality in Teknaf Analyses of Correlates.

2. Principal Investigator: Md. Shafiquel Islam

3. Starting Date: May, 1978

4. Completion Date: October, 1978

5. Total Direct Cost: US $ 2731.00

6. Abstract Summary: (250 words or less)

This protocol intends to study the influence of birth care practices (birth attendants, method of cutting and dressing of umbilical cord) on infant mortality and the socio-demographic factors (mother's age, sex of infant, birth order, number of living and dead children, father's occupation and mother's education), which determine the relationship. Data for this work were generated from the routine registration of birth and death reports (Appendix I) collected in the Teknaf Demographic surveillance system effective 1976. The survivors of the birth cohort of 1976 will be compared with the infants who died within one year of birth according to the above mentioned variables.

7. Reviews (Leave blank)

a. Research Involving Human Subjects:

b. Research Committee:

c. Director:

d. BMRC:

e. Controller/Administrator:
SECTION II - RESEARCH PLAN

A. INTRODUCTION

1. **Objective**: This study attempts to relate birth care practices to infant mortality and analyse the factors that account for such a relationship.

2. **Background**: A preliminary estimate of Teknaf data of 1976 gave infant mortality rate of 148.0, neonatal and post-neonatal mortality rates were 75.0 and 73.0 respectively. It was found that about 97 per cent of the deliveries took place in home, attended mostly by relatives of women and the traditional birth attendants i.e. the untrained village dais. Doctors and nurses attended less that one percent and the rest births required no attendants. Unscientific methods of cutting and dressing of the umbilical cords were used by most birth attendants.

A study of infant rearing practices and beliefs by Dharam B. Sharma and U.C. Lahori (1977) among 250 urban and 300 rural mothers of Jammu Province revealed that 74 percent of the urban and 91 per cent of the rural deliveries were conducted at home most of them by midwives (83.0 percent in urban and 95.0 per cent in rural area respectively). The frequency with which unscientific instruments were used for clamping the umbilical cord (urban 19 and rural 69 per cent) was quite alarming. So also was the prevalent practice of treating the umbilical stump with either unconventional substance like, cowdung, ash, ghee etc. or nothing at all.

In a Sylhet Tea garden population a study was carried out in 1960 by Mackay (1962). This study showed prematurity as the major cause of death in the neonatal period accounting for 65 percent of the deaths and 10 per cent to gastrointestinal and respiratory infection. The author found an average survival time of 7 days. Respiratory infections accounted for 31 per cent and gastrointestinal infections for 27.6 per cent of post-neonatal deaths. Prematurity featured in this group but to a much less degree (20 per cent). The results showed an average survival time of 2 months and 20 days. Again, during the years 1967 to 1969 Mackay (1973) found in the same Tea garden population an overall infant mortality of 50.6 per 1000 live births. The neonatal rate
was 30.4 and the post-neonatal rate 20.2. The author observed that the risks of death declined with age of infants. 77.8 per cent of the deaths occurred in the first three months of life, 90.3 per cent in the first six months and only 9.7 per cent in the remaining six months. The principal cause of neonatal death was prematurity accounting for 60.7 percent of the deaths, cot deaths 6.7 per cent and congenital deformation 5.9 per cent. The leading cause of post-neonatal death was infections of the bowel accounting for 42.2 per cent of deaths.

Anu Gupta, Kamlesh Chopra and Anita Khalil (1977) in a study of 247 neonates admitted over a period of twenty one months from January 1974 to September 1975 found tetanus neonatorum as one of the common causes of morbidity and mortality. There was higher prevalence of the disease in males and babies of rural community where deliveries were conducted at home by untrained dais. He found an overall mortality from tetanus neonatorum of 72 per cent. 98 per cent of all deliveries were conducted at home. The mortality was 80.7 per cent in neonates who presented with tetanus in the first 8 days of birth as compared to 39.3 per cent in babies who developed tetanus after 8 days of life. Unsterilized crude instruments were used to sever the cord; in 52 percent of cases the umbilical cord was cut by unsterilized blade. Other instruments used were knife, sickle and scissors.

According to a WHO chronicle (1976) infant mortality by age group showed considerable consistency. There was a pattern of high mortality rates among children born of mothers under 20 years of age. The rates declined in the 20-24 group and reached their lowest in the 25-29 group; they increased slightly in the 30-34 group and rather more in the 35 and over group. Moreover, the highest rates in all projects were roughly twice the lowest rates. Clearly the 25-29 years period was the most favourable in the maternal age span. For immaturity, the same pattern of high mortality rates in the under 20 group, particularly low rates in the 25-29 group, and increasing rates in older groups generally held true. With young mothers, the frequency of immature births may be greater because of biological conditions that interfere with the replenishment of reserves, such as inadequate development or shorter intergestational intervals. Also, such unfavourable factors as unwanted pregnancies, unstable marital unions, inexperience and lack of knowledge
and/or interest in prenatal and post-natal care may be more serious in this age group and thus pose an increased threat to the infant's survival. The correlation between infant mortality and birth order is clear: in the Latin American Projects and two North American ones where the relevant data were available there was a consistent pattern of increasing mortality rates with each subsequent product of pregnancy. The death rates among infants of the fifth or higher birth orders was more than double that for first products of pregnancy, reaching over 160 infant deaths per 1000 live births in EL Salvador. With immaturity, the infant death rates in general rose progressively from low levels for first births to higher ones for the fifth and subsequent orders, doubling themselves in each of the three Latin American projects and almost trebling themselves in the North American ones.

Stockwell hypothesised (1962) that postneonatal mortality is much more sensitive to socio-economic variations. Further, Willie (1959) and Stockwell (1962) suggested that income seems to be the most important socio-economic variable related to infant mortality.

Markides and Barnes (1977) in their work during the years 1970 to 1974 in San Antonio, Texas showed a definite relationship between the total infant mortality rate and socio-economic status, the rates rises steadily from a low of 13.8 for the High SES group to about 20.8 for the Low SES group. While the relationship between neonatal mortality and SES is not as strong, it still exists. The strongest relationship is found between SES and postneonatal mortality: the postneonatal rate rises from 2.3 to 6.3 as SES decreases. It was found that infant mortality rates were much more sensitive to income differentials than to occupational and educational differentials.

3. **Rationale**: The analysis of the influence of birth care practices, the factors and causes of infant mortality will be an important contribution towards the evaluation of maternity and child health care facilities in rural Bangladesh.

**B. SPECIFIC AIMS**

Specifically, the protocol addresses itself to the following questions:

1. Are there variations in infant mortality rates by age and sex of infant, age of mother, no. of living/dead children, birth order and socio-economic status of the parents?
2. Are there variations in birth care practises (birth attendant, cutting and dressing of umbilical cord) according to the aforementioned variables?

3. Is there a relationship between birth care practices and infant mortality?

4. Would the relationship (if any) persist after standardizing for age of mother, sex of infant, birth order, cause of death and socio-economic factors?

C. METHOD OF PROCEDURE:

The records of births occurring in 1976 in Teknaf Surveillance area will be matched against the death records obtained for this cohort to segregate the infant deaths from the survivors. Based on this dichotomy, tabulations will be made both for the infant deaths and survivors according to the following characteristics.

1. Age of mother

2. Sex of the child

3. Birth order

4. Number of children born alive now dead

5. Number of living children

6. Total number of pregnancies

7. Occupation of father )

8. Education of mother )

from census records.

Likewise, the birth care practices will be related to the aforementioned variables to avoid any spurious relationship. Then birth care practices will be related to infant mortality rates controlling for age of mother, parity, socio-economic characteristics, sex of the child, and other variables which will be
deemed important in the course of analysis.

Finally, chi square tests and partial correlation analysis will be done to statistically validate the results attained.

D. SIGNIFICANCE:

The high infant mortality rate has been an important concern of public health administrators in Bangladesh. Between 1974 and 1976 in Matlab study area of CRL, the infant mortality rate fluctuated from 138 to 103. Infant mortality for Teknaf was 148 per 1000 births in 1976. By extricating the factors accounting for the high infant mortality and examining the birth care practices as they relate to the infant deaths, appropriate intervention measures could be undertaken with proper focus. Such knowledge would aid public health planners in preparing adequate programmes for the reduction of infant mortality.

E. FACILITIES REQUIRED:

Statistical Assistance will be required for approximately two months for sorting birth and death reports, and making necessary tabulations. Help of computer service may be required for tabulation of data.

F. COLLABORATIVE ARRANGEMENT:

None.
## SECTION III - BUDGET
### A. DETAILED BUDGET

#### 1. PERSONNEL SERVICES

<table>
<thead>
<tr>
<th>NAME</th>
<th>POSITION</th>
<th>Percent of effort or number of days</th>
<th>Annual Salary</th>
<th>PROJECT Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Md. Shafiquil Islam</td>
<td>Research Associate</td>
<td>88 days</td>
<td>43,872/-</td>
<td>14,849</td>
</tr>
<tr>
<td>M.H. Munshi</td>
<td>Project Manager (Teknaf Dysentery)</td>
<td>10 &quot;</td>
<td>36,384/-</td>
<td>1,400</td>
</tr>
<tr>
<td>Trinidad Osteria</td>
<td>Investigator</td>
<td>5%</td>
<td>25,000/-</td>
<td>1250/-</td>
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<tr>
<td>M. Misanur Rahman</td>
<td>Statistical Assistant (Teknaf)</td>
<td>20 days</td>
<td>14,606/-</td>
<td>1,124</td>
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<tr>
<td></td>
<td>l Statistical Assistant</td>
<td>22 &quot;</td>
<td>9,720/-</td>
<td>823/-</td>
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</table>

Subtotal: 16,196 1250/-

#### 2. SUPPLIES AND MATERIALS:

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<tr>
<th>ITEM</th>
<th>UNIT COST</th>
<th>QUANTITY</th>
<th>PROJECT Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pen, Ballpoint, Black</td>
<td>$ 0.15</td>
<td>4 Each</td>
<td>TAKA 0.60 DOLLAR 0.60</td>
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<tr>
<td>Refill, Black</td>
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<td>14 Each</td>
<td>TAKA 0.64 DOLLAR 0.64</td>
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<td>Pencil, lead No. 1</td>
<td>$ 0.02</td>
<td>6 &quot;</td>
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<td>Pad, Octave</td>
<td>$ 0.16</td>
<td>2 &quot;</td>
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<tr>
<td>Eraser, double, Oblong</td>
<td>$ 0.04</td>
<td>2 &quot;</td>
<td>TAKA 0.08 DOLLAR 0.08</td>
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<tr>
<td>Clip, Paper, Gem</td>
<td>Tk. 3.75</td>
<td>1 Box</td>
<td>TAKA 3.75 DOLLAR 3.75</td>
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<td>Pad, foolscape, plain (100 sheet pad)</td>
<td>$ 0.36</td>
<td>2 Each</td>
<td>TAKA 0.72 DOLLAR 0.72</td>
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<td>Pad, foolscape, lined (100 sheet pad)</td>
<td>$ 0.28</td>
<td>3 Each</td>
<td>TAKA 0.84 DOLLAR 0.84</td>
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Subtotal 3.75 3.32
3. **EQUIPMENT**
   
   None

4. **PATIENT HOSPITALIZATION**
   
   None

5. **OUTPATIENT CARE**
   
   Not applicable

6. **CRL TRANSPORT**
   
   None

7. **TRAVEL AND TRANSPORTATION OF PERSONS**
   
   None

8. **TRANSPORTATION OF THINGS**
   
   None

9. **RENT, COMMUNICATION AND UTILITIES**
   
   None

10. **PRINTING AND REPRODUCTION**

    | ITEMS                        | TAKA  | DOLLAR |
    |------------------------------|-------|--------|
    | Mimeography                  | 1200/-|        |
    | Computer Service Charges     | 2400/-|        |
    | Cover Printing & Binding     | 300/- |        |
    | Xeroxing                     | 200/- |        |
    | Special reproduction         | 100/- |        |
    | **Sub-total**                | **4700/-** | **-** |


11. **OTHER CONTRACTUAL SERVICES**

None

12. **CONSTRUCTION, RENOVATION AND ALTERATIONS**

None
### E. BUDGET SUMMARY

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<tr>
<th>CATEGORY</th>
<th>YEAR-1 TAKA</th>
<th>DOLLAR</th>
<th>YEAR-2 TAKA</th>
<th>DOLLAR</th>
<th>YEAR-3 TAKA</th>
<th>DOLLAR</th>
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<td>3. Equipment</td>
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<td>5. Outpatient</td>
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<td>6. C.R.L Transport</td>
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<td>7. Travel Persons</td>
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<td>8. Transportation Things</td>
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<td>9. Rent/Communication</td>
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<td>10. Printing/Reproduction</td>
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<td>11. Contractual Service</td>
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<tr>
<td>12. Construction</td>
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<td><strong>Total</strong></td>
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</table>

Total $ 2730.72

Say, $ 2731.00

Conversion rate $ 1.00 = Taka 15.80
REFERENCES


2. Dharam B. Sharma and U.C. Lahori. Some aspects of infant rearing practices and beliefs in the urban and rural areas of Jammu(kashmir), Indian Pediatrics, XIV (7), July 1977, 511-518.


7. WHO chronicle, 30, 1976, 198-200

BIRTH REPORT
TEKNAF DYSENTERY PROJECT
(Cholera Research Laboratory, Dacca)

Card (2-3)
Study No. (4-6)
Identification (9-10)

Name of Newborn:

Litter Size: (13) Single 1  Twin 2  Triplet 3

Result (14): Miscarriage 1  Still birth 2  Live birth 3

Sex: (15) M  F

Vill: [ ] Para: [ ] Census No. [ ] [ ] [ ]

Information on Father:
Name: __________________________ Age: [ ] (26-27) Census No. [ ] [ ] [ ] [ ] (70-77)

Information on Mother:
Name: __________________________ Age: [ ] (38-39) Census No. [ ] [ ] [ ] [ ] (49-50)

Marital Status of mother at the time of delivery:
Married 2  Widowed 3  Divorced 4  Separated 5

No. of living children: [ ] Sons [ ] Living with mother: Son [ ] Daughter [ ]

No. of children born alive now dead: [ ] Sons [ ] No. of children born dead: [ ]

No. of additional children wanted: [ ]

Birth Attendant: (62) None 1  Mother 2  Mother-in-law 3  Grandmother 4

Neighbouring women: [ ] Dai [ ] Nurse [ ] Doctor [ ]

Other (specify): [ ]

Cutting of the umbilical cord: (63) Blade [ ] Knife [ ] Bamboosheet [ ]

TDP Kit [ ] Other Specify: [ ]

Dressing of the umbilical cord: (64) Nothing [ ] Ash or Burnt earth [ ] Tied with thread [ ]

TDP Kit [ ] Others: [ ]

Any delivery complication: [ ] Specify:

Complication of the newborn: [ ] Breathing or crying difficulty [ ] Inability to suck [ ]

Due baby [ ] Injured during birth [ ] Birth defect [ ] Others [ ]

Place of birth: Vill: [ ] Para/P. O. [ ] Thana [ ]

(If the place is not the usual residence of Mother)

Remarks:

Reported by: [ ] FA Date: [ ] Verified by FSA: [ ]
DEATH REPORT

TEKNAF DYSENTERY PROJECT
(Cholera Research Laboratory, Decca)

Appendix - 1

Card

Study No. (18) Identification

Name of deceased : 

- True Age : Year (13-16) 
Month (15-18) 
Day (17-18)

- Sex : M F

- Census No. 1 2 (23-25)

- Marital Status at death : Never married 1 Married 2 Widowed 3 Divorced 4 Separated 5

Describe events and symptoms leading up to death

Causes of death as reported : (34-35)

F ever 
Malaria 
Dysentery : Acute 07 
Malnutrition 13

Malaria 
Dysentery : Chronic 08 
Drowning 14

Dysentery : Acute 09 
Snake bite 15

Chronic 
Tuberculosis 16

Delivery complications 11 
Rabies 17

Whooping cough 17 
Killed by wild animal 18

Other not covered above (specify) 19

Treatment given by : (31) Licensed allopath 1 
Allopath quack 2 
Homoeopath 3

Hakim/Kavira 4 
CRL 5 
No treatment 6 
Other (specify)

No. of persons eating together : 39

Place of death : 

Village/Para 1 
P.O. 2 
Thanaka 3

(if the place is not the usual residence of the deceased)

6. If age at death was 10 years or below, complete the following:

Occupation of Father/Head 

Mother's census 

Mother's marital status : Married 1 
Widowed 2 
Divorced 3 
Separated 4 
Mother dead 5

Mother alone 3 
Stepmother 4

The deceased was living with : (53)

Both parents 1 
Father alone 2 
Mother alone 3 
Paternal relations 5 
Maternal relations 6 
Other (specify)

Date

Reported by F.A. 

Verified by 

Date
