



Glimpse

international centre for
diarrhoeal disease research, bangladesh
NEWSLETTER

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Mr. Paul A Erb, Chargè D'Affaires of Switzerland signing the contribution on behalf of the Government of Switzerland.

building for clinical facilities at Mohakhali, Dacca.

During FY 1980-81 OPEC also contributed US\$ 562,000 to the Centre for the construction of the ICDDR,B building. It may be mentioned here that the late President Ziaur Rahman laid the foundation stone of the ICDDR,B new building in February 1981. Besides OPEC the Centre has also received funds from the Kingdom of Saudi Arabia to meet the construction costs.

Mr. M G D Williams, High Commissioner of Australia presented a cheque of Aus. \$ 150,000 at a simple ceremony at the Centre on Thursday, September 24, 1981. This contribution is for the Financial Year 1981-1982.

NEW CONTRIBUTIONS FOR ICDDR,B

During the second Consultative Group meeting of ICDDR,B in New York the Government of Switzerland announced an additional contribution of SFr. 1.75 million. The Swiss Government earlier contributed SFr. 2 million for the year 1980 and 81. The Consultative Group meeting was held in New York in June 1981 and was chaired by UNDP.

Current major donors to ICDDR,B are Australia, Bangladesh, the United Kingdom, the United States of America, Saudi Arabia, Sweden, Switzerland, Ford Foundation, IDRC of Canada, UNDP, UNFPA and OPEC Fund.

The Organization of Petroleum Exporting Countries (OPEC) has recently announced an additional contribution of US\$ 950,000 to the ICDDR,B for the construction of



Mr. M G D Williams, the High Commissioner of Australia handing over the Australian contribution to the Director of ICDDR,B.

COUNTRY REPORT

PAKISTAN

The Inter-Regional Training Course on Diarrhoeal Diseases—Clinical Aspects was held in Dacca from 8-19 December 1980. Country reports presented by the participants are edited and summarized for our readers; this is the report presented by Drs. Abdul Waheed and Saedul Haque from Pakistan.

There are about 12 million children in Pakistan aged under 5; every year about 3.5 million births take place. Most of these children live in the rural areas without any health and education facilities. Every year all the children under five have at least one episode of diarrhoea, 1% of all diarrhoea episodes prove to be fatal resulting in 10 million deaths. No wonder 72% of all childhood deaths (0-14 years) occur among under 2 year olds.

In 1979, 2,752 children with diarrhoea were admitted to the Paediatric Department of the Mayo Hospital. Weight of 88% of these children were under the 10th percentile of the Harvard Standard, 97% of the children who died due to diarrhoea had weights below the 10th percentile of the Harvard Standard.

There were twice as many episodes of diarrhoea in summer than in winter. Large majority of the cases were from families with poor literacy, low income, unhygienic living conditions and improper water supply and sanitary conditions.

A national Diarrhoeal Disease Control Training Centre has been established in the King Edward Medical College, Lahore with the assistance of WHO. This Centre trains paediatricians, doctors, lady health visitors, paramedical personnel and social workers in management and control of diarrhoeal diseases. The main objectives of the Centre are:

- * train largest possible number of health personnel in the country
- * develop training and education

materials on control of diarrhoeal diseases

- * carry out applied and field research

- * provide health personnel with standardized oral and IV therapy regimens.

The Pakistan Paediatric Association (PPA a voluntary organization) is popularizing the use of ORS through radio, television, press and other information media. ORS seems to be well accepted and popular among mothers especially in the urban areas.

A Case Study

As the practical session of the Inter-Regional Training Course on Diarrhoeal Diseases—Clinical Aspects, the participants were assigned to treat a case in the hospital. The following case-history was recorded by Drs Waheed and Haque from Pakistan.

Mr. Abdul Hamid aged 45 years, a Muslim shopkeeper, was admitted to ICDDR,B Hospital at 10:15 a.m. on 10th of December, 1980

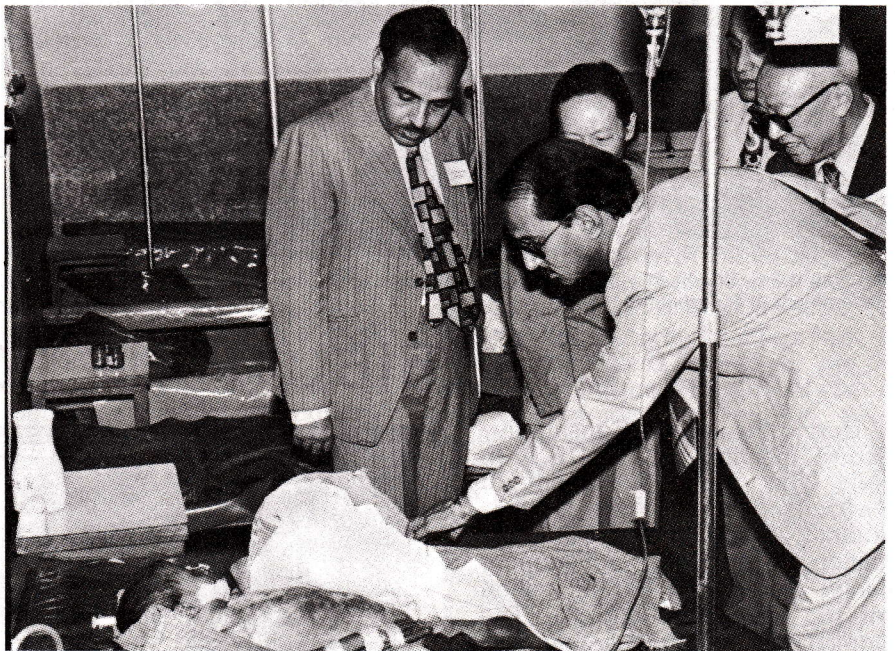
toms of severe dehydration were present; feeble pulse, sunken eyes, dry tongue, skin on pinching tented as turgor was lost, temperature was subnormal and blood pressure could not be recorded.

Provisional diagnosis was cholera.

Immediately the patient was put on oral rehydration solution (ORS), 1 cup (66–70 cc) every 5–8 minutes. In the meantime as the condition of the patient was very serious intravenous fluids were kept ready. Intake, output were measured and necessary measures taken for intensive care. In addition to ORS, Tetracycline 250 mg 6 hourly were advised for 3 days.

Patient's response for ORS was encouraging. During the first two hours—the patient vomited only once, passed 1 litre of stool and drank 3 litres of ORS. His general condition improved; he was alert, the pulse rate satisfactory and blood pressure about 100/80 mm of Hg.

Within 4½ hours of admission Mr Hamid had taken about 6 litres



The participants of the Inter Regional Training Course on Diarrhoeal Diseases-Clinical Aspects from Pakistan at the Treatment Centre.

with the following complaints:

- * 10–12 loose motions like rice water for 6 hours
- * vomiting for 6 hours
- * gradual increased thirst, restlessness for 3 hours

There was no history of fever or abdominal pain.

At the time of admission the patient was drowsy, all the symp-

of ORS, passed about 3 litres (5 stools and one vomit). There was remarkable improvement in the general condition and the intravenous fluid kept in readiness on admission was never used.

Laboratory Investigation

Stool on physical examination was watery and looked like rice-

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Mr. Hamid was exclusively rehydrated with oral rehydration solution.

water, with alkaline reaction. Stool culture was negative for cholera, *Shigella*, *Salmonella* or *E. coli*. Blood examination; Co PCV 43%, T.L.C. 10,000/cmm with 77% polymorphs and no malarial parasite seen. Serum electrolytes were not measured.

Mr. Hamid was discharged on the 11th of December 1980 at 4:00 p.m., pulse was 72 per minute, resp. 18 per minute, temperature 98°F., skin turgor normal, blood pressure 110/80 mm of Hg.

Comments

ORS is recommended for mild to moderate dehydration, while Intravenous Infusion plus ORS is for the severe type of dehydration. Why this patient was treated with ORS instead of intravenous infusion was to see what would happen in a remote place where IV was not available. IV was kept ready at hand in case it was needed.

This case gave encouragement and an experience to all the participants of Inter-Regional Training Course on Diarrhoeal Diseases-Clinical Aspects, as it demonstrated that ORS can be successfully used for moderately severe to severe cases of dehydration in places where intravenous fluid therapy is not available.

Health Situation in Pakistan, 1978

1 doctor for	5,940 persons
1 hospital bed for	1,660 persons
1 hospital bed for	35,000 children
1 health facility for	11,110 persons

32% villages within 2 miles, 20% villages beyond 5 miles of a health facility.

1. Infant Deaths, Determinants and Dilemmas (A Cohort Analysis for Rural Bangladesh)/ A.K.M. Alauddin Chowdhury. May 1981. (Scientific Report No. 46)

The differentials of early neonatal, late neonatal and post-neonatal mortality were examined in this paper. A cohort of nearly 20,000 births occurring in a rural area of Bangladesh were prospectively followed for one year. The analysis of the data showed that:

- Among all infant deaths, the rate of neonatal deaths was higher than that usually found in developing countries;
- Birth order has a distinct U-shaped pattern for early neonatal mortality and post-neonatal mortality;
- Female children have lower mortality in the neonatal period, whereas male children have lower mortality in the post-neonatal period;
- Previous child mortality experience of the mother is directly related to the probability of death of subsequent births at any period of infancy;
- Only when the previous child survives at least one year is the birth interval inversely related to the probability of dying in infancy. This is especially true for the post-neonatal period;
- A variation in infant mortality with socio-economic status was not observed. This may be explained by the homogeneity of sanitation, environment and living conditions, food consumption patterns, and absence of medical and health facilities.

2. Comparison of Measures of Childbearing: Patterns by Age and Parity in Matlab, Bangladesh/ Stan Becker, Helen Hiltabidle. March 1981. (Working Paper No. 15)

With data from cross-sectional surveys there are many possible measures of the quantity and tempo of childbearing in a population. One can measure the frequency of birth events before the survey (and obtain fertility rates or birth

probabilities); intervals between events (open and closed birth intervals); the cumulative number of birth events (parity distribution measures); or the prevalence of pregnancy. Each measure has a particular time reference and gives one perspective on childbearing in the population. That the level of most such measures depends on age is obvious. In addition, for interval measures in particular, parity has been shown to be a crucial control variable. This is because the range of interval lengths for women of high parity is much more constrained than the range for women of lower parity. This paper documents the levels of seven measures of childbearing by age and parity for married women in the Demographic Surveillance System in Matlab, Bangladesh.

3. Demographic Studies in Rural Bangladesh: May 1969 April 1970/A.I. Chowdhury, K.M.A. Aziz, Kashem Shaikh. April 1981. (Working Paper No. 16)

This report gives a descriptive analysis of the data obtained during May '69-April '70 of a population of 132 villages under the Demographic Surveillance System maintained in Matlab since 1966. This also presents some of the yearly patterns for the four year period 1966-1970.

The annual rate of increase was found to be 2.03%. Among the under 14 and over 35 population the proportion of males were higher than the females, which was reversed in the age group 15-34 years. In both the neonatal and post-neonatal period male deaths were higher than female deaths, but the overall life-expectancy was higher in males than in females. More than 75% of the deaths among children aged under 1, were due to 'Takuria' i.e. cause unknown. 25% of the deaths among children aged 1-14 years were due to gastrointestinal diseases.

The peak age specific fertility was 332.4 for women aged 20-24 years. The mean length of generation was 26.27 indicating that a woman replaced herself with 2.24 females; out-migration among both males and females were higher than in-migration.

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(Continued from page 3)

4. Demographic Studies in Rural Bangladesh: May 1970-April 1971/A.I. Chowdhury, K.M.A. Aziz, Kashem Shaikh. April 1981. (Working Paper No. 17)

The mid-year population of Matlab Demographic Surveillance System for 1970-71 was estimated with an adjustment of births, deaths and migrations. An average annual rate of increase of 2.4% was found. The crude birth rate and crude death rate were lower than the preceding years and the crude rate of natural increase was 2.9%. Out-migration rate was 22.1 and in-migration rate 30.8. Both male and female in-migration was more than out-migration.

In the neonatal period, death rate among male infants was higher than the female infants. Whereas in the post-neonatal period death rate among the female infants was higher than the male infants. Overall, infant mortality rate was higher among the male than the female. The age-specific death rates showed a U-shape pattern. The peak occurred during October to December 1970-1971 and earlier years. This peak period of death coincides with the peak in winter with higher deaths among the <1 and above 40 year olds during 1970-1971 and earlier years. Over two-thirds of children <1 year reportedly died of 'Takuria' i.e. cause 'unknown' and about half of the persons over 40 years died of 'dropsy, asthma, rheumatism, etc.' i.e. 'others.' The life expectancy of males was higher than females.

Sex ratio at birth was 101 males per 100 females. October-December period of 1970-71 was the peak period for pregnancy termination. Higher numbers of first pregnancies were terminated in September-November. Second

and third pregnancies were terminated mostly during October- and third pregnancies were terminated mostly during October-January. Four through seven pregnancies were terminated during October-December and beyond, seven were terminated largely during October-November. Overall, most of the conceptions took place during the spring and early summer (February-April) seasons. The peak age-specific fertility rate was 329.7 for women aged 20-24. The intrinsic rate of natural increase was 2.88% per year.

5. Interrelationships Among Certain Socioeconomic Variables in A Rural Population of Bangladesh/M. Shafiqul Islam, Stan Becker. May 1981. (Working Paper No. 18)

Interrelationships among three key socioeconomic variables— income, education and occupation of head of 2352 households were determined and compared with a fourth variable, dwelling space. The relevant data from the 1974 census of Matlab demographic surveillance were matched with income data calculated on the annual land yield collected through a follow-up systematic sample survey in five percent of the households.

There was significant difference in the mean education level and the mean dwelling space between occupational groups ($P < 0.001$). Mean annual income increased significantly with educational level of the household head ($P < 0.001$). Similarly, mean dwelling space increased significantly with educational level of the head of household and annual income of the household ($P < 0.001$). It was found that dwelling space is an indicator of the socioeconomic status of rural households.

GLIMPSE or any of these publications can be received free. Complete list of publications is available. Write to the Publication Unit ICDDR,B GPO Box 128, Dacca-2 Bangladesh

AN EXPERIENCE IN ORAL REHYDRATION IN BANGLADESH

By
Crisanta de Joya-Agregrado, M.D.

During the Inter-Regional Training Course on Diarrhoeal Diseases Control, Clinical Aspects, held in Dacca, Bangladesh from December 8 to 19, 1980, emphasis was placed on the efficacy of oral rehydration with the use of Oral Rehydrating Salts Solution (WHO Formula) or ORS solution for short (locally known as Oresol).

Participants were made to observe and manage diarrhoeal conditions of all kinds and in all ages treated with ORS solution. Practically all cases of *mild* and *moderate* cases of dehydration which were given ORS solution for main management responded positively with the state of their hydration restored satisfactorily. The more *severe* forms of dehydration were placed on initial IV fluid administration but the follow-ups were always with ORS solution and with very satisfactory, if not, excellent results.

All participants were impressed with the efficacy of ORS solution in the management of dehydration. It is just remarkable seeing infants and older children drinking ORS solution copiously and within a few hours rehydrated. But there are other impelling factors that favor the use of this solution. For one, it is more economical; ORS solution is definitely cheaper than IV fluids. For another, being given orally, it is definitely easier to administer. IV solution may be avoided altogether in some patients thus avoiding complications of IV infusions. It is also a very practical form of therapy in which hydration can be carried out in the home especially in rural areas.

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